

Energy Conservation Methods General Guidelines

Electrical Consuming Device by category (End-User):

1. Interior Lighting: [lamp/luminaries, bulb, fluorescent (standard/compact)]
Good energy management can easily cut lighting energy by half. The reductions in waste heat also decrease the need for air conditioning.

- Use fluorescent tubes in preference incandescent bulbs. Fluorescent lamps are three (3) times more efficient and last ten (10) times longer.
- Consider the purchase of compact fluorescent lamps/luminaries (CFL). These lamps produce less heat and last longer.
- Rooms can be light-zoned. In non-reading and non-working areas reduced lighting (25 watts – 40) watts can be used.
- Avoid “long-life” bulbs. They are 20% less efficient than the standard bulbs.
- Dimmer switches can save energy when used with incandescent lighting fixtures.
- Use high-pressure sodium or metal halide lamps for outdoor/external lighting (left on all night).
- **Turn off** all lights, when someone is **not occupying** the washroom, closets and in-frequently used area.
- **Report any and all** electrical lighting problems/faults or mal-function to the Public Works Department and the Electrical Inspectorate Division – Public Works or your maintenance/repair personnel.

2. Office Equipment: [printer, scanner, photocopier, facsimile/fax, calculator, cash machine, paper shredder, detacher, transformer (power)]

- All office equipment is to be **in accordance with** the suppliers/manufacture operational procedure manual; failure to comply can and would result in poor equipment operation and failure.
- Use as necessary or as the need arise. All **nuisance use or non- work related** task and assignments are to be avoided.
- Do not leave transformers plugged into the wall outlet receptacle; disconnect (**turn-off the outlet switch**) and isolate (**remove**) all transformers at the end of the working day.
- Shut off unnecessary computers, printers, and copiers that are not in use and close-down/disconnect at the end of the working day.

3. Computer & Electronic (Operational) Equipment: [personal computers, electronic (processing) equipment]
 - For efficient use it is recommended that all personal computers (PC's) utilize the power management option. PATH - go to the computer **Desk Top**, click on **Start-Settings-Control Panel-Power management Option**: The time settings in this power option controls how long if unattended the PC takes to go to the standby mode to conserve energy [low-power state].
Suggested Settings:
 1. Monitor – 15 min.
 2. Hard Disk (Central Processor Unit) – 25 min.
 3. System Standby – 30 min.
 4. Screen Saver – 1 min.
 5. Additionally, use the automatic save feature when working in all applications, preferable at one (1) minute intervals.
 - **See 2.** Office Equipment above - identical.
 - Shut off unnecessary computers, printers, and copiers that are not in use and close-down/disconnect at the end of the working day.

4. Air Conditioning: [air conditioner unit (window, split, central)]
 - All office windows are to be covered by **light coloured blinds/curtains or screens**. E.g. white, beige, light cream, to reduce heat conduction, radiation and convection. Awnings to shade windows also help.
 - Unit setting should be at 70 – 74 deg. F or 22 – 24 deg. C. Each increase will reduce air conditioning consumption by approximately 8 %.
 - All doors, windows and openings are to be **thermally sealed** and **kept closed on entry/exit** to reduce unit over-work.
 - Seal leaky HVAC ductwork – with the duct system fan operating, check duct air distribution system for air leaks.
 - Depending on occupancy level and local area disposition, room air conditioners [window type units] can be replaced by more energy efficient split units or central air conditioners.
 - Set thermostat/temperature control to “auto”. The “fan-on” setting will increase energy use.
 - Do not use ceiling fans with the air conditioner unless the thermostat for the air conditioner is set higher than normal e.g. 78 – 82 deg. F or 26 – 28 deg. C.
 - Seal all leaks around coils.
 - Provide shade for the condenser unit, without obstructing airflow currents.
 - Review the maintenance programme for the air-conditioners, as poor maintenance contributes to low performance and energy losses.

- Natural Cooling:

- Fans should not run in rooms that are unoccupied.
- Ceiling fans can augment natural breezes to increase comfort. They can improve ventilation and lessen the need for air conditioning.
- Open windows as wide as possible to admit cool circulating breeze and fresh breeze.

5. Domestic Refrigeration, Heating & Ventilation: [refrigerator, freezer, chillers, water fountains, water heater, fans, ventilator]

- Be conscientious and mindful of the time spent with the refrigerator door open, during the **entry and/or retrieval** of items.
- Use as the need arise; however before opening (the door) **think and decide** on what item, one wish to remove from the appliance.
- Set the level on the temperature control (thermostat) at **3 or 4** depending on the quantity of the items in the refrigerator (medium level or full).
- Allow warm food to cool before storing in the refrigerator.
- Make sure that air spaces under/beneath and behind the refrigerator allows for the free escape of hot air currents
- Motor and condenser coils should be kept free of dust.
- Proper (i.e. at appropriate times) defrosting as directed [by the manufacturer] increases efficiency.
- A second refrigerator or freezer only partly/partially in use should be turned off, so as to maximize the use of the other unit [refrigerator or freezer].
- Place refrigerator and/or freezer away from direct exposure to heat sources such sunlight and stoves.

6. External Lighting: **See 1.** Interior Lighting (above)

7. Cooking, Domestic Equipment, Laundry & Clothes Drying: [oven, range/cooker, hot plate, microwave, toaster, blender/mixer, kettle, floor polisher, vacuum cleaner, dryer/blower, iron, television, video, radio/stereo, washing machine]

- All appliances must be **turned off**, when not in use.
- Microwave should be set at 'medium or medium-high' for **2 – 4 min.** duration.
- Kettles should be **quarter filled** for preparing a cup of coffee, tea or chocolate.
- Stove/oven/ ranges are to be set on the medium range at **2 – 3** temperature level.

- Laundry: Good practices saves on energy use for water heating, washing and drying.
 - Use cold water (70° to 80° F) for most cloths and for rinsing. This does not affect the quality of the wash.
 - Use hot water (130° F) only for colour fast cotton and stains.
 - Use short wash cycle for lightly soiled garments
 - Wash full loads **ALWAYS** if and when possible.

- Clothes Drying:
 - Use a clothes-line or “solar clothes dryer”. This saves 100 % use in electric energy.
 - If a power dryer is used , wash and dry several loads in succession, since a warm dryer uses less energy.
 - Dry **ONLY** full loads as often as possible.

- 8. Miscellaneous Equipment: [motors, pumps, compressors, irrigation schemes]
 - Stagger start-up times for equipment with large starting currents to minimize load peaking.
 - If possible, shut off a piece of equipment before starting the alternate piece.
 - Disconnect primary power to transformers that do not serve any active loads (e.g. periodic/seasonal loads or surpluses transformers).

Only – *absolutely essential power systems that are required to be in continuous operation should remain **ON**.*

NOTE:

The consumption for each metered entity, should be monitored, checked and control by the members of that entity; they are the GUARDIANS of the ‘electricity services’, the onus is therefore on the individuals (consumers) to ensure efficient utilization of the electricity.