GreenCare™
Green+Leaders

Plug Load Toolkit

This toolkit will help you to save energy in your unit by unplugging non-essential electronic devices when not in use.

Background Information

The Lower Mainland Health Authorities use approximately 290,000,000 kWh of electricity annually. This is enough electricity to power about **26,364 homes for a year**. While BC currently benefits from clean hydro power to meet electricity needs, demand is expected to outstrip our current capacity by 40% in the next two decades. How can BC close this gap? Significant energy savings can be achieved by being smart with how we use energy.

A "plug load" refers to the energy used by any electronic device or equipment that is plugged into a wall outlet. In a health care setting, plug loads include everything from life-sustaining and diagnostic medical equipment to computer monitors and cell phone chargers used by staff in your unit or office. In total, 10 to 20 percent of energy used by the health authorities comes from plug loads.

Phantom Plug Load

A "phantom load" is the amount of energy certain devices consume while in standby mode or switched "off." For example, some devices need power to keep an internal clock or touchpad active even while switched off. When these devices remain plugged into the wall, they draw roughly 5 percent of the energy consumed while in operation. Unplugging these devices when not in use saves energy. See Additional Resources for information on how to measure a device's phantom load.
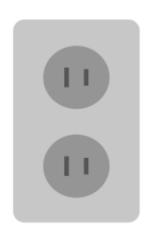
The Big Picture

This toolkit is part of a broader initiative to reduce the Lower Mainland Health Authorities' energy use, and to foster a workplace culture where everyone works together to help reduce the energy demand of electronic equipment.

Steps

Step 1 – Get your Manager / Supervisor Involved

Speak with your Manager/Supervisor about running a plug load campaign. Ask for the following kinds of support:

- Sending 2-3 emails to staff explaining the campaign and reporting results
- Participating in the desired behaviours
- Expressing support for campaign objectives as needed

Here are some key points to help get them on board:

- The Lower Mainland Health Authorities uses over 300,000,000 kWh of electricity per year (enough to power about 27,000 homes annually).
- 10 to 20 % of LMHA's consumption is due to electronic devices and equipment plugged into wall outlets.
- Together we can work to reduce this demand by turning off and unplugging non-critical electronic devices and equipment when
they're not in use.
- These improvements increase efficiency and reduce unnecessary financial and energy waste.

Step 2 – Assess your work area and equipment

Use the "Equipment" Worksheet in the Energy Visual Assessment Tool and substitute the action "Unplug" for "Turn it Off" to determine what equipment is left on and/or plugged in when it does not need to be. This assessment will:

1. Become the baseline against which you can measure changes after you run the campaign
2. Help you decide which devices and areas to focus on in your campaign

Step 3 –Select the devices/equipment that your campaign will target

Use the following criteria, based on the "Equipment" Worksheet in the Energy Visual Assessment Tool to select the devices or equipment that will be the focus of your campaign:

- Non-essential devices/equipment frequently left plugged in when not in use
- Devices/equipment that can be unplugged by staff

Step 4 – Communicate the Plan & Build Your Team

Think about how people share and receive information at your workplace. Use this knowledge to decide how you will communicate your campaign and action request. See the Additional Resources section for optional methods of communication.

Step 5 – Evaluate outcomes with the Energy Visual Assessment Tool

After you have run the campaign for several weeks, use the "Equipment" Worksheet in the Energy Visual Assessment to compare the current state with the initial baseline that you collected.

Keep in mind that not all campaigns will be immediately successful. Some will take time and require you to think about barriers and adapt strategies when needed. Talk to your Green+Leaders Coordinator about tools for uncovering barriers to change.

Step 6 – Share your Success

Sharing your success with other Green + Leaders can be motivating and can help support others as they try new tactics and approaches. We also love telling success stories on the GreenCare Community site, so share your story with us.

Fast Facts: Energy + Plug Loads

✓ Energy conservation can enhance human health by reducing GHG emissions, improving outdoor air quality and decreasing acid rain.

✓ Over 97% of our reported greenhouse gas (GHG) emissions come from health care buildings within the LMHOs, making health care one of the most energy intensive sectors.

✓ Our target is aligned with the Provincial mandate of reducing the public sector's carbon footprint 33% by 2020.

✓ While the LMHOs' overall energy consumption has increased since 2007 – due to facility expansions and increased health care services – our energy conservation measures have resulted in a **decrease in energy intensity** (*i.e.* amount of energy used per square foot): -9.3% Fraser Health, -0.7% PHC, -2.5% PHSA and -10.2% VCH.

Plugload Energy Use

· 10 to 20 % of LMHA's energy consumption is due to electronic devices and equipment plugged into wall outlets.

· Recharging units keep using energy long after the attached appliance or device is fully recharged

· Power strips (power bars) make it easy to unplug all devices in a work space simply by pressing one button. Power strips can also be purchased with a built in timer that can be programmed to shut off during times when equipment/devices are not in use

- A desktop computer, in "sleep mode" uses about 21 watts, and while turned "off" still draws an average of nearly 3 watts. See more "phantom loads" of devices at: http://standby.lbl.gov/summary-table.html

- Removing or unplugging unnecessary devices is the easiest way to manage energy use associated with plug loads

Additional Resources

Plug Meters

Plug meters (pictured right) are devices that plug into the wall socket and measure how much electricity each piece of equipment uses. Check with your manager / supervisor about purchasing a plug meter if you would like to find out the phantom load (power draw when plugged in but shut off) of a particular device or piece of equipment.

Communicate the Message – Send an Email

Have your manager/supervisor send an email, asking staff to turn off or unplug particular pieces of equipment when they are not in use. Send the email yourself if this is more appropriate. Use the data you collected in your Step 2 assessment.

Sample Email Template

Subject: We all need to unplug at the end of the day…

Did you know that "plug load," from our electronic devices and equipment accounts for 10-20% of all the Lower Mainland Health Authorities' energy use? And some of this energy is consumed simply when devices and equipment are plugged in, even when they are not being used!

In our own [office/work area/department] [X] % of [Equipment] in [area] is left on at the end of the day. With your help we can reduce this unnecessary waste of money and energy. And, most importantly, we can help reduce our collective carbon footprint.

<u>Starting today, we're asking all staff to unplug non-essential electronic devices and equipment when they are not in use.</u>

Thank you for your help in making the LMHAs greener, more environmentally responsible organizations!

Communicate the Message – Speak at a staff meeting

At the next staff meeting share the goals of the campaign and the call to action to unplug electronic devices. You may also offer to do presentations at smaller team meetings.

Ask for/ nominate volunteers to:

- o   ensure that equipment is turned off or unplugged at the end of the day;
- o   be responsible for turning off or unplugging equipment in common spaces (such as a kitchen, copy room, meeting rooms, storage room).

Communicate the Message – Put up posters

After you have identified key devices/equipment, post the "Unplug it" posters in prominent locations to act as reminders.

Additional Ideas for Action

- o   Use Timers to Automate Savings

  Timers can be an effective low cost solution to reduce electricity use by activating an appliance only during the time that it is needed. Timers can be installed at the plug and can be reset as needed. For example, you can set large coffee makers and water coolers on timers to turn off overnight.

- o   Include Kitchens, Break Rooms and Other "Orphaned" Areas in your Campaigns

  Some of the best places to implement a plug-load campaign are the areas with multiple pieces of non-critical equipment. These communal areas, like staff kitchens and break rooms, are areas where electrical devices are consistently left on when not in use, because no one person has the responsibility to turn them off. Recruit a staff member to adopt the "orphaned" area and make sure that a power bar or individual equipment is switched off or unplugged at the end of the day or shift.

- o   Organize a Day to 'Make the Switch'

  For many offices, each work station often has its own set of equipment. Rather than unplugging each device individually, plugging them into a power bar can make "unplugging" a simple act each day by hitting the on/off switch on the power bar. As a first step in the campaign, organize a day in which everyone sets up their devices to plug into their own power bar and demonstrate how it can be used. While monitors can be included, computers should not be as they are often required to be left on.

Contacts

For help using this toolkit, please contact the Green + Leaders Program Coordinator.

Visit https://bcgreencare.ca/framework/energy-conservation for more information on GreenCare's energy-related initiatives.