# Saving Electricity Made Easy

## Northern Housing Conference 2013

### Hydro One Remote Communities, Inc.

# Overview

By the end of this session you will know:

- Why YOU should Conserve Electricity
- Difference between Energy Conservation & Efficiency
- How to Conserve Energy
- Product Purchasing Tips
- How to get more Information

# Who, Who and What We Do?

## Who Are We?

- Hydro One Remote Communities Inc. (Remotes) is a subsidiary of Hydro One

## Who Are Our Customers?

- 21 communities across Ontario including 14 First Nations

## What We Do?

- Operate & Maintain the generation and distribution of electricity to locations who are “off the grid”

# Our First Nation Customers At a Glance

Bearskin Lake

Deer Lake

Fort Severn

Kasabonika Lake

Kingfisher Lake

Kitchenuhmaykoosib Inninuwug

Marten Falls

Neskantaga

Sachigo Lake

Sandy Lake

Wapekeka

Weagamow

Webequie

Whitesand

# So … Why Conserve?

- Customer Savings
- Community Savings
- Supplier Savings
- Electricity Supply
- Environmental and Social Responsibility

http://www.youtube.com/watch?v=Es-c92qlDYE

# Energy Conservation vs. Efficiency

## Conservation

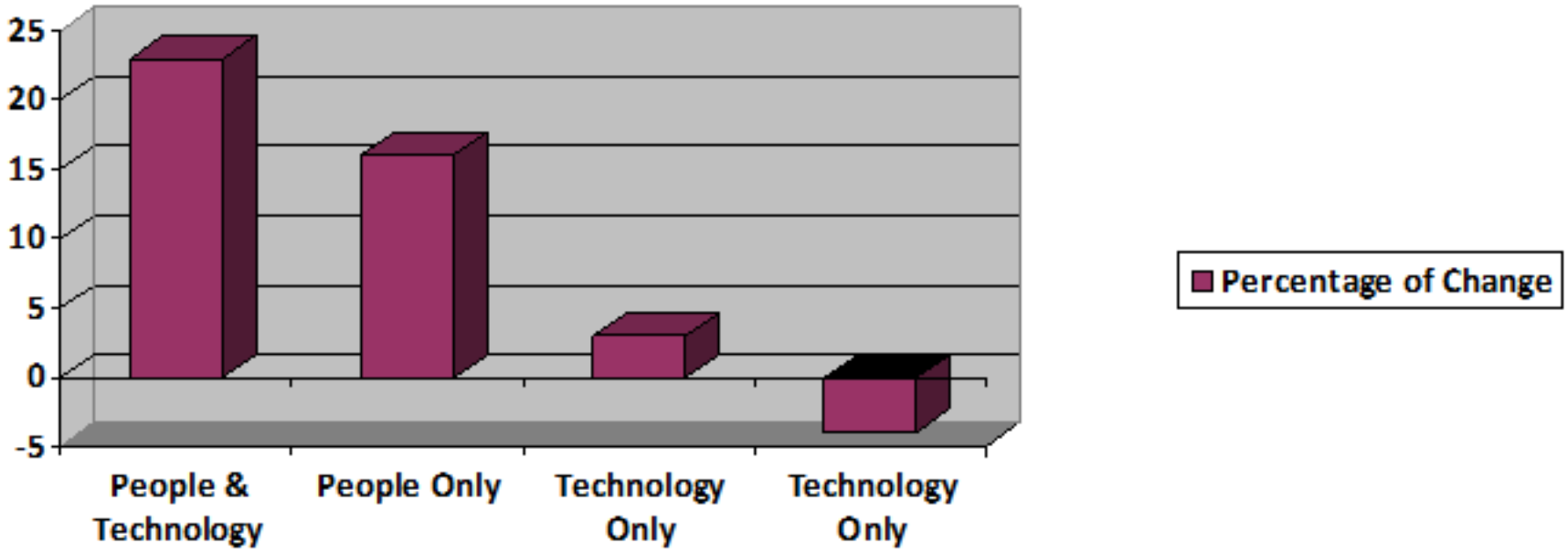
- Simple Steps **Individuals** can take to reduce their **Own** electricity consumption to **SAVE MONEY**.
- Little or no financial investment, cheap, cheap, cheap
- Monitor and Be **Pro-Active**
- ITS ALL ABOUT CHANGING BEHAVIOUR

## Efficiency

- Performance of a product i.e. appliances, electrical or plumbing fixtures, even buildings and their components
- Replacement or New Items that may carry an Initial cost
- REMEMBER SAVINGS are continual.

# What Makes the Difference?

## Maximize Savings by combining Conservation with Energy Efficiency




Source: Good Practice Guide 84, Managing & Monitoring Staff to Save Energy compliments of NRCan – Dollars to $ense, Energy Monitoring Session

# Ways to Conserve

## How ***YOU*** can Save Electricity

**Energy Conservation**

- Awareness & Action
  - Understanding how electricity is wasted
  - Taking action to reduce energy consumption

- **Energy Efficient Products**
  - Lighting
  - Heating / Ventilation
  - Building Envelope

# More Ways to Conserve

## Understand the Relationship between electricity & water consumption

**Reduction in Personal Usage**

Personal Savings

- Billed Usage
- Drawing from a well or lake

**YOU & Community Savings**

# Water Conservation

## What can ***YOU*** do?

- Don't leave water running – brushing teeth, drinking water
- Reduce Use – short showers instead of baths, do dishes once per day. Don't pre-rinse. Only run full loads in dishwasher
- Only wash full loads of laundry (use cold water)
- Use cold water for cleaning house and washing floor
- Collect rain water for lawn, gardens, washing vehicles, etc.
- Repair leaks and drips

**Things to consider**

Low-flush or dual flush toilets – Toilet Tank Bank

Low-flow faucets or aerators

Energy Star Appliances

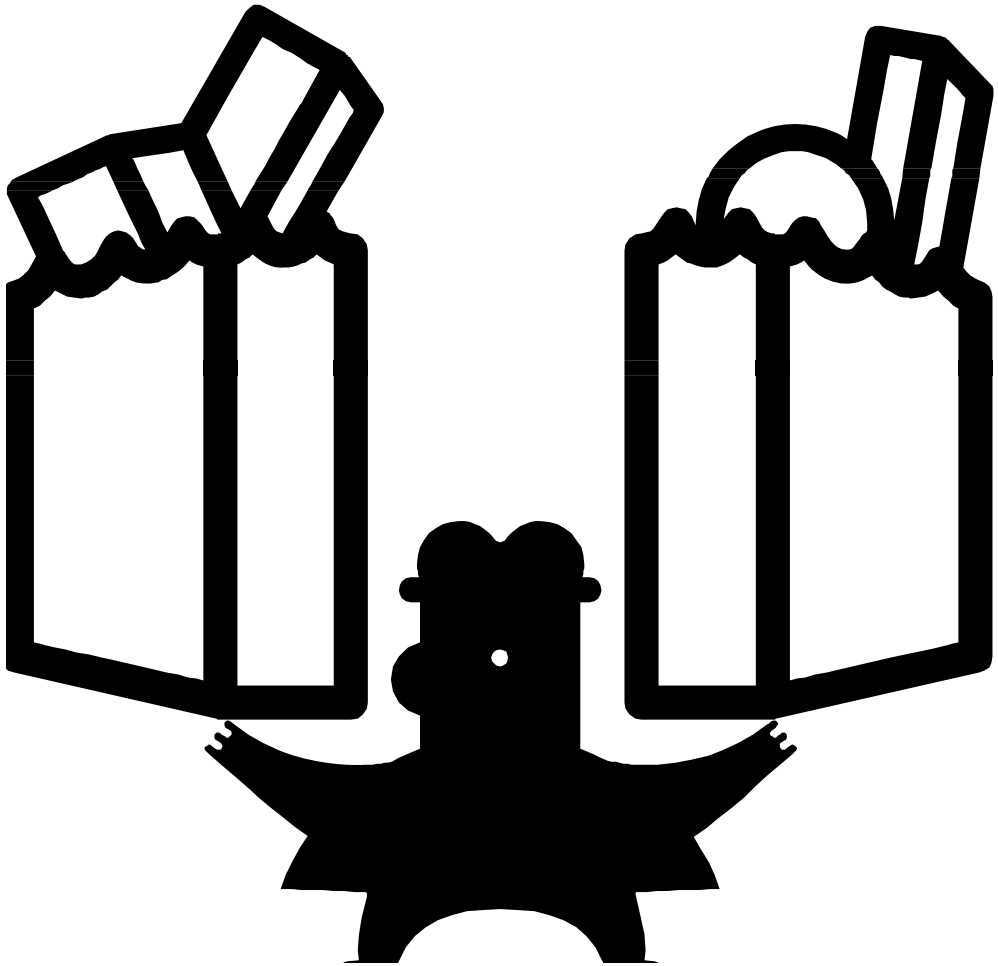
# Conserving Water at Work

## What can be done?

- General Maintenance – fix leaks & drips
- Only use cold water in washrooms for washing hands
- Introduce low-flow faucets or aerators in bathroom & kitchen
- Introduce low or dual flush toilets, waterless urinals
- Only do dishes once/day or use a dishwasher

  – remember to only run full loads, no heat dry and purchase Energy Star

# So Many Choices…



# So many Choices…

## Product Purchasing Tips

- Know what you are looking for then Read the labels
- Consider time delay features, energy saver switches or settings
- Understand water vs. energy conservation
  i.e. washing machines, dishwashers, refrigerators & freezers
- Be prepared to follow operations & maintenance recommendations
- Purchase Energy Star or greater whenever possible

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# Don’t be Fooled


Check the Label

# Is this product Energy Efficient?

## Energy Star vs. EnerGuide

Energy Star

- Good Start – use as first cut
- Integral in changing industry standards
- Identifies products that meet or exceed the minimum energy standards

BUT

- Currently Under Review & being updated
- Not all energy efficient products carry label
- Does NOTcompare “like” products

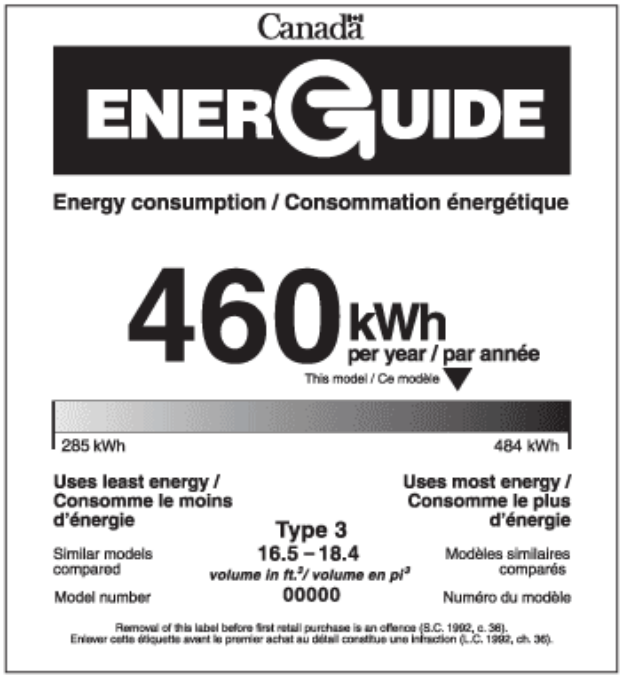
## Check the Label

# How about this product – Is it Efficient?

## Energy Star vs. EnerGuide

EnerGuide

- More information
- Average annual consumption (kWh)
- Efficiency relative to similar models of same type & size
- Provides model number
- On most products today




## Check the Label

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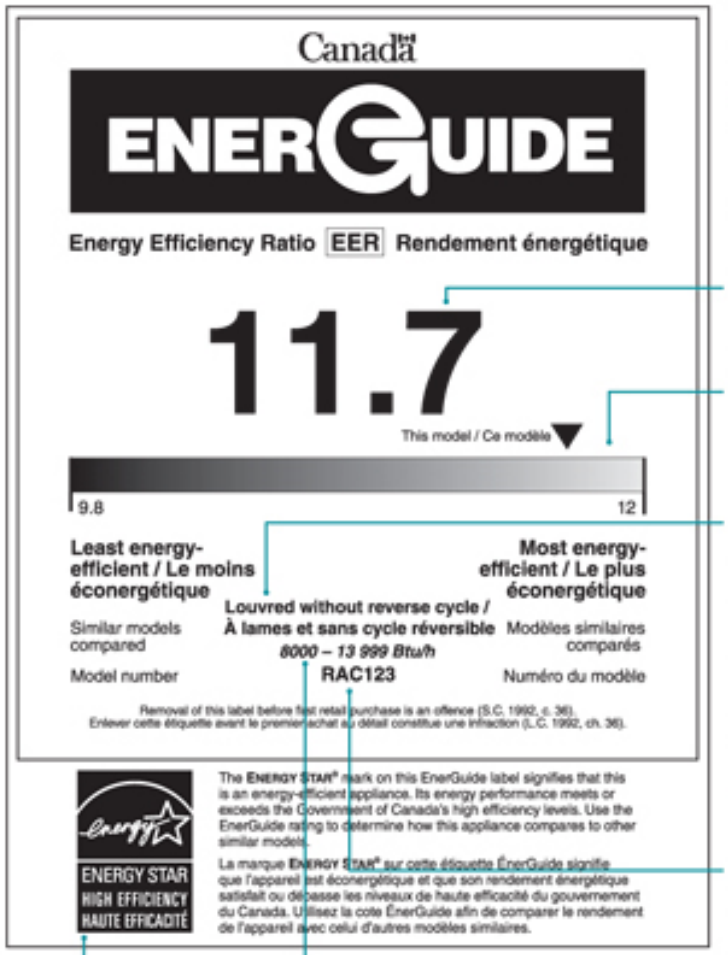
# How to Read an EnerGuide Label




This EnerGuide label lists an EER of 11.7. Note the arrow on the scale. Its position near the far right indicates that this model is among the most energy efficient on the market.

The scale shows the EER range for models of this type and size sold in Canada.

"Louvred" means this is a window-mounted unit (as opposed to a "non-louvred," or through-the-wall, unit). "Without reverse cycle" means it only cools (as opposed to also operating as a mini heat pump).

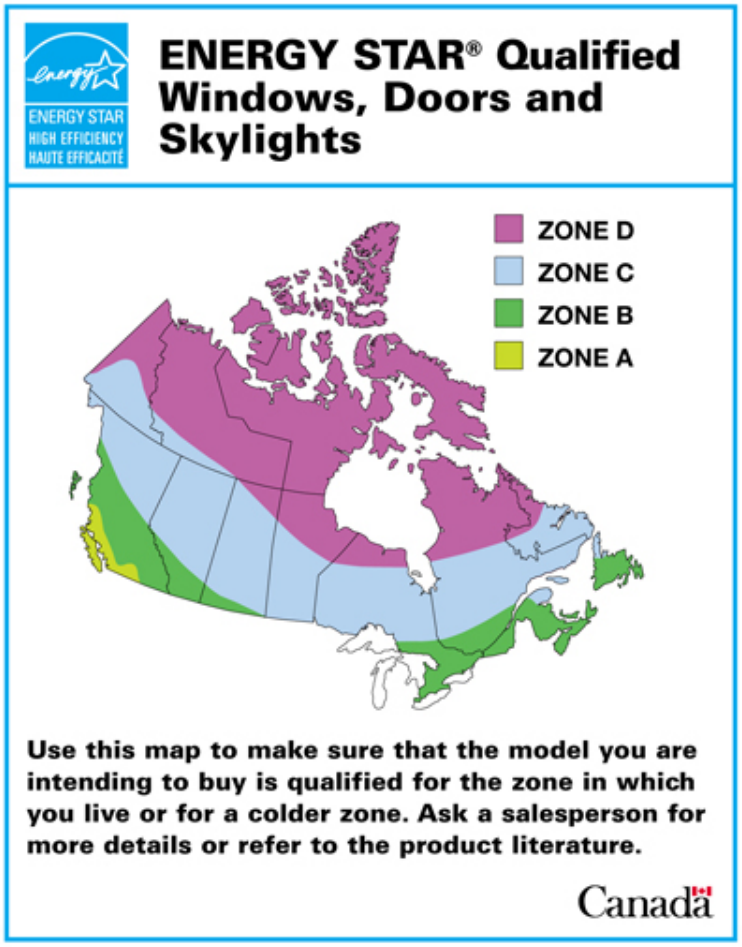
This is the unit's model number.

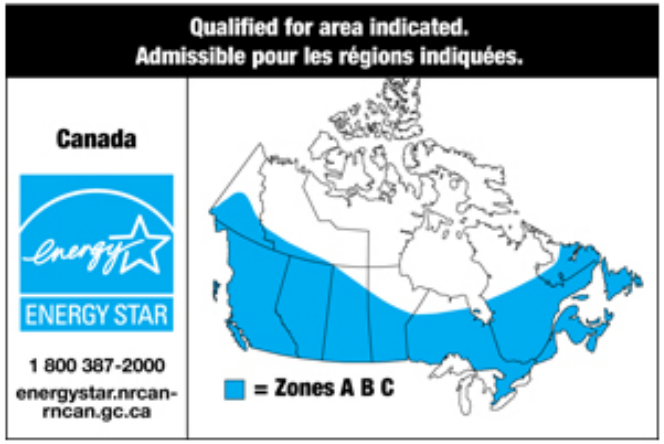
This number shows the model's cooling capacity grouping in Btu/h.

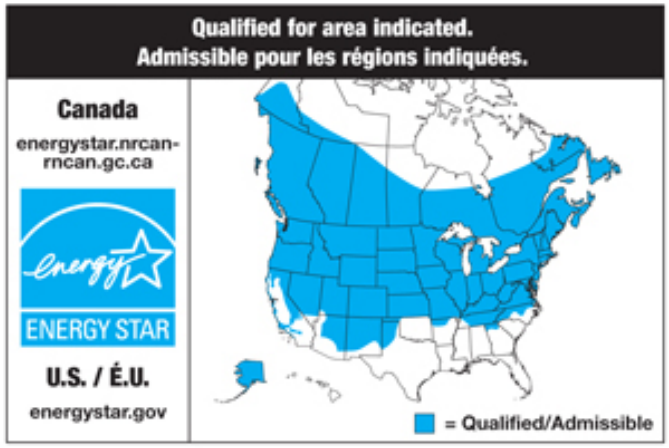
The ENERGY STAR® symbol indicates that the product meets the high-efficiency ENERGY STAR performance levels – assuring you that it's one of the most energy-efficient units on the market.

Source: NRCan Office of Energy Efficiency

# Energy Star Qualified Windows, Doors and Skylights



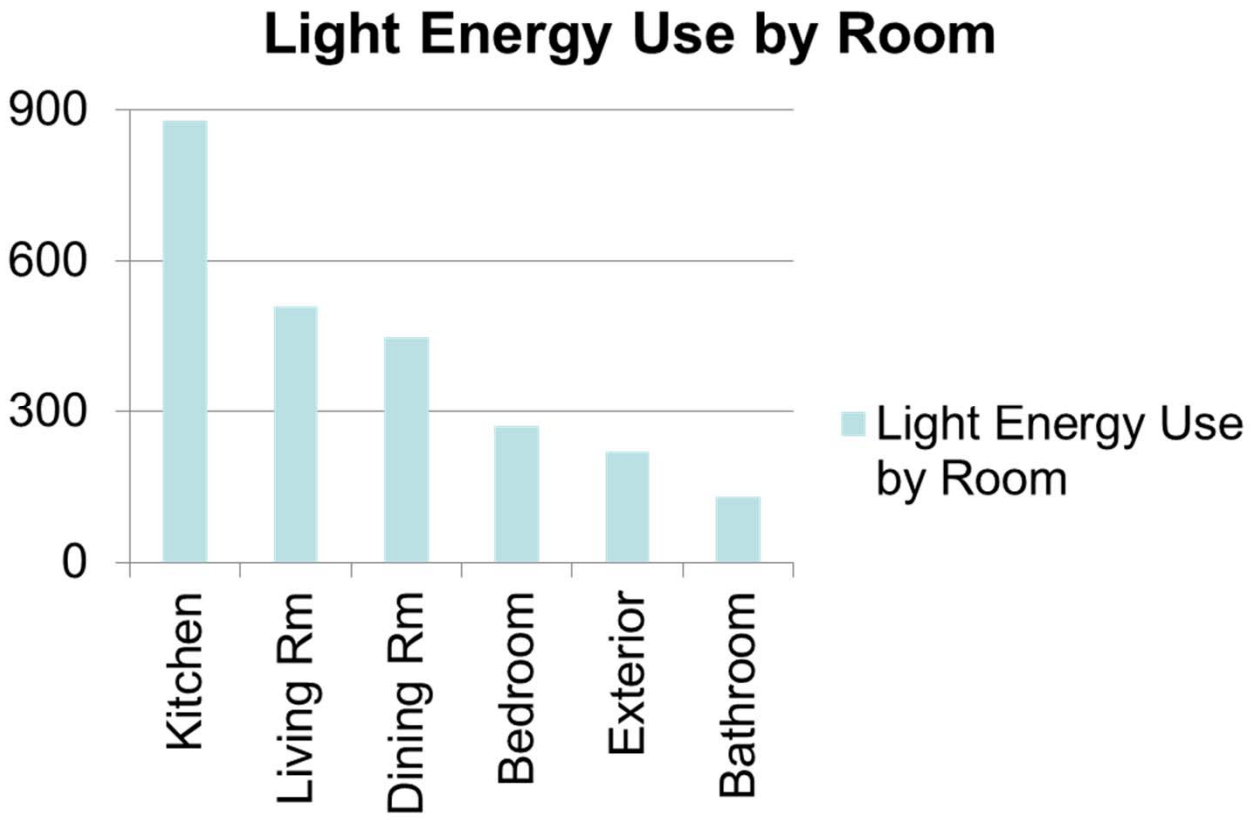




Source: NRCan Office of Energy Efficiency

# Energy Efficient Residential Lighting

- Incandescent bulbs – phased-out by end of 2014
- Artificial Lighting consumes 17% of household electricity

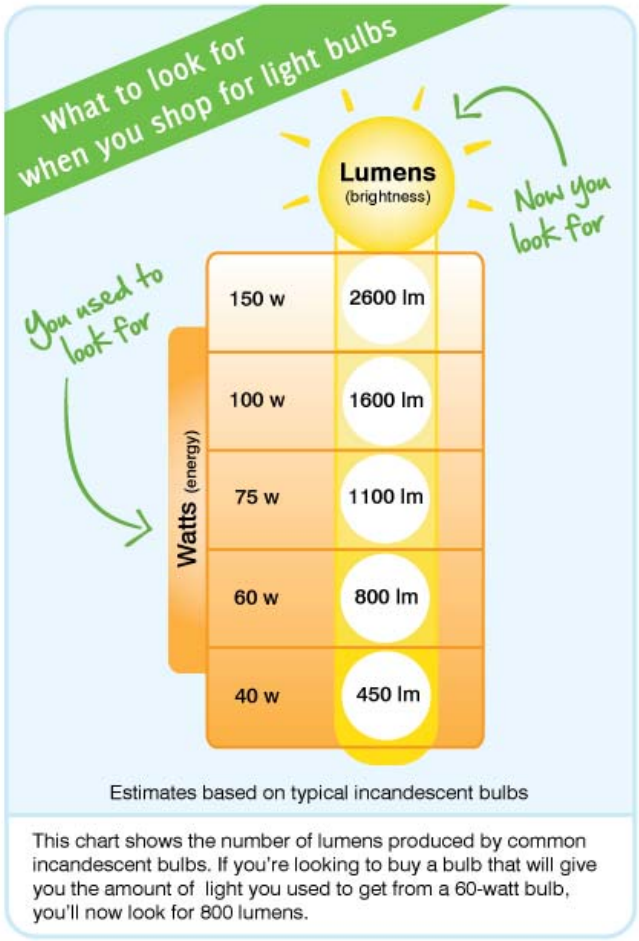



Source: Lighting Research Center – Rensselaer

# How to Upgrade Your Lighting

## 1. Out with the Old

- Determine Lumens (lm)
- Note the wattage of bulb & maximum wattage allowed for fixture i.e. 100, 60, 40 watt
- Note shape of bulb, type and use of bulb
- Measure length and diameter of bulb




Source: Lumen Now.org

# How to Upgrade Your Lighting

## 2. Choose a New Bulb – all bulbs compared to incandescent

- **Halogen**
  - same quality of light
  - Longer life and use 25-40% less energy
  - Hot to touch and limited uses
- **CFL**
  - Take longer to reach full light output
  - Longer life and 30-60% less energy
  - Cheaper than other efficient options
  - Variety of colours, temperatures and sizes
- **LED**
  - use 75% less energy
  - last 25 x longer
  - have limited applications
  - expensive

# How to Upgrade Your lighting

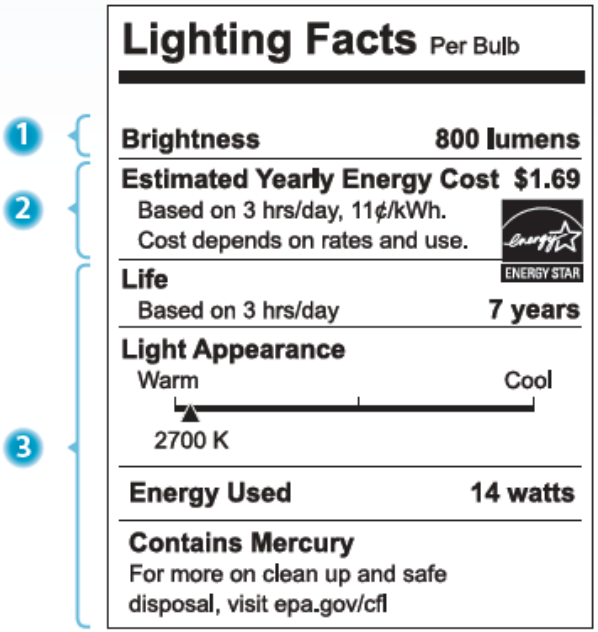
## 3. At the Store

- Find the type of bulb you've decided to replace the old one with
- Find the bulb with the brightness (lumens) you are looking for and then at the wattage
- Look for the colour "temperature" in Kelvins
- Double check the rating of bulb – not all are meant to used the same
- Make sure the bulb will fit the old fixture – size matters


Source: Lumen Now.org

# Purchasing Tips - Read the Label

## See the Savings on New Bulb Labels




**ENERGY STAR Logo** – Indicates which CFLs and LEDs meet ENERGY STAR requirements for efficiency, lifetime and quality.

**Life** – Estimates in years how long the bulb will last. Long life bulbs save you the hassle of frequent bulb changes.

**Light Appearance** – Tells you the shade of light. Incandescents produce warm white light—between 2,700 and 3,000 K. Bulbs that produce cooler or more bluish light will have a higher rating, such as 4,000 to 6,500 K.

**Energy Used (watts)** – Measures bulb energy use, not brightness.

**Contains Mercury** – CFLs contain extremely low levels of mercury, <5 mg, and are completely safe to use in normal operation. In fact, the amount of mercury inside a CFL is equal to the size of the period at the end of this sentence. Should a CFL break in your home, use common sense clean-up procedures – keep kids away, open the window and carefully clean up the pieces and place them in a zip lock bag for proper disposal. To put this concern in context, mercury emissions from power plants present a much more serious threat to human health and the environment than a broken CFL. Also note, retailers such as Home Depot and Lowes offer free CFL recycling.

NRDC

Source: Lumen Now.org

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# Is this Light SAFE?

CFL bulbs contain small amounts of Mercury

| Product | Amount of Mercury | Equivalent CFLs |
|---|---|---|
| CFL Bulb | 5 mg | 1bulbs |
| Watch Battery | 25 mg | 5 bulbs |
| Dental Amalgams | 500 mg | 100 – 400 bulbs |
| Home Thermometer | 2 grams | 400 bulbs |
| Float Switches for Sump Pump | 3 grams | 600 bulbs |

Source: Mearie Group

# Proper Handling

## CFLs last longer when handled properly

- Handle with some care
- Install and remove by holding the ballast
- Store in original packaging

## Oops it broke

- Clean-up and remove with care
- Protect, ventilate, seal and remove
- Dispose broken or burned out lamps accordingly

# Energy Efficiency at Work

## Equipment

- Only use when necessary, shut down equipment in evening, weekends and holidays
- Purchase energy efficient or auto shut down models
- Programmable Thermostats for heat and air conditioning and set sensible temperatures
- Use smart bars
- Perform Regular maintenance

## Lighting

- Upgrade Lighting Fixtures
- Introduce Task Lighting
- Install timers and/or motion sensors
- Utilize natural light
- Turn out the Lights when not in use!!!

# Upgrade Commercial Lighting

## Significant Savings

T12 Fluorescent Lighting to be discontinued in 2014

Follow similar steps as upgrading residential Lighting by:

- Determine what the old fixtures and lamps are
- What kind of lighting is required, i.e. task, ambiance, etc.
- Research your options for upgrades, T8, T5 or LED
- Consider Maintenance issues
- Consider additional features
- Do you require new fixtures as well as lamps?
- Determine the best options for cost of lighting and buy-back options
- Determine the estimated energy savings from year to year
- Don't forget interior and exterior lighting

# Upgrade Commercial Lighting

## Significant Savings – **Examples**

**Administration Office** (2 Story + basement)

- Est. savings at time of assessment = 5819 kWh ($640/yr)
- $2800 community savings first 4 months

**Typical Arena**

- Estimated community savings = 69,264 kWh ($7600/yr)

**Typical Community Centre** c/w Stage, washrooms

- Estimated community savings = 2,985 kWh ($478/yr)

# Upgrade Commercial Lighting

## Significant Savings – **Examples**

**Typical Laundromat**

Est. savings at time of assessment = 1,796 kWh ($287/yr)

**Typical Community Restaurant**

Est. savings at time of assessment = 10,304 kWh ($1,649/yr)

http://www.youtube.com/watch?v=5LPafDq5F6A

# Hydro One Remotes
# CaRE Program Initiatives

## Conservation and Renewable Energy Program

- Community Conservation Program
- Community Conservation Competitions
- Commercial Lighting Retrofit Program
- Commercial Appliance / Equipment Upgrade Program
- Energy Conservation Youth Camps
- Appliance Rebate Program
- Remotes' Refrigerator Round-up Program
- Renewable Energy Innovation DiEsel Emission Reduction (Reindeer) Initiative

# Useful Websites

## For More Useful information Visit:

http://www.hydroone.com/Pages/Default.aspx

http://www.nrcan.gc.ca/home

http://oee.nrcan.gc.ca/residential/10759

http://oee.nrcan.gc.ca/equipment/manufacturers/15286

http://www.esasafe.com/

http://esasafe.com/Recalls.php?s=5

# For More Information

Lori Rice
Conservation & Renewable Energy Officer
Hydro One Remote Communities
680 Beaverhall Place
Thunder Bay, ON P7E 6G9
Tel. 807-474-2829
Email: lori.rice@HydroOne.com

*Change Your Thoughts and you Change Your World*

*Norman Vincent Peale (1893 – 1993)*

# Your Turn

Questions?

We'd Like to Hear from you