



Greater Sudbury Hydro Inc Conservation and Demand Management Programs

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Ontario's Electricity Supply

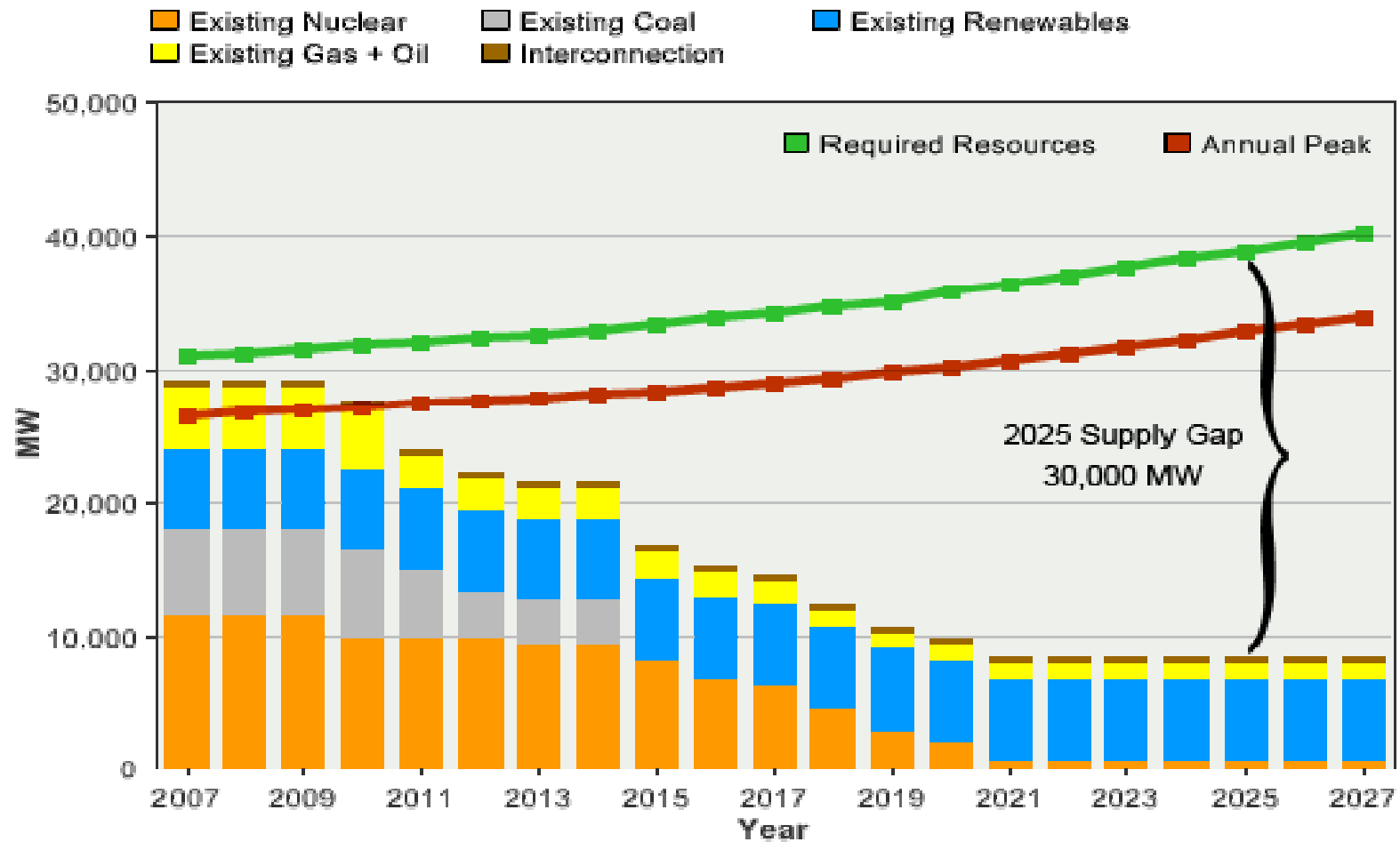
Ontario has installed capacity to generate about 31,000 Megawatts of electricity.

- Nuclear power = 52%
- Hydroelectric = 21%
- Coal = 18% (to be phased out by Dec 2014)
- Natural Gas = 8%
- Wind = 1%

Why Conserve?

- Coal facilities are to be phased out by December 31, 2014; and, many existing power facilities are reaching the end of their operating lives and will need to be refurbished or replaced over the next 20 years.
- If no new facilities are built and existing ones are retired as they reach the end of their operating lives, there will be a huge gap between available and required capacity by 2025.

Why Conserve?



Conservation is Important to Our Future

- Conservation and demand management play a vital role in the Ontario Government's plan to build a better future. Ontario has set a goal to reduce Ontario's peak demand by about 20% - or a total of 6,300 megawatts - by 2025.
- We all have a role to play in conserving electricity.
- Greater Sudbury Hydro has incentive programs to help us move in the right direction.

Electric Thermal Storage Heating Program



Electric Thermal Storage Heating

- Although the province of Ontario is summer peaking, we are a winter peaking utility. GSH customers experience cold harsh winters that result in extremely high energy costs.
- We have a large population that heat their homes with electric heat.
- This program replaces conventional heating with Electric Thermal Storage Heating (ETS) technology. ETS equipment utilizes a storage medium (such as ceramic brick) to store low cost electricity in the form of heat for use in heating 24 hours a day.
- promotes the shifting of electricity usage from “on peak” periods to “off peak” and readies the customer for smart meters / TOU billing.

Electric Thermal Storage Heating

- Greater Sudbury Hydro has received approval to run this program for 2009 through 2011.
- **The program includes up to \$2,500 incentive per customer.**

Electric Thermal Storage Heating

Example: The following data is based on a customer who has a thermal storage heating system. The customer is billed time of use rates. The bill period was 65 days (Nov 1/08 – Jan 5/09) and hourly data was categorized into the three regulated time-of-use periods.

<u>Period</u>	<u>Sum of Billable kWh</u>	<u>Sum of Total</u>	<u>Rate</u>
• On	962.37	\$84.69	8.8 ¢
• Mid	1089.93	\$78.48	7.2 ¢
• Off	<u>12392.42</u>	<u>\$495.70</u>	4.0 ¢
• Grand Total	14442.72	<u>\$658.87</u>	

The bill calculation tabulated under the regulated price plan without TOU pricing is as follows:

• First Block	2166.67	\$121.33	5.6 ¢
• Balance	<u>12392.42</u>	<u>\$798.07</u>	6.5 ¢
• Grand Total	<u>14442.72</u>	<u>\$919.40</u>	

This customer realized savings of \$260.53 for bill period Nov 1/08-Jan 5/09.

Parking Lot Controller Program



GET PLUGGED INTO...

The Ultimate Energy and
Cost Saving Solution for
Parking Lot Operators

As an operator of a commercial
establishment, you know how taxing
winter energy costs can be. By installing
Intelligent Parking Lot Controllers you can
save up to 65% in energy costs associated
with vehicle plug-ins.

Call Greater Sudbury Hydro today for
details on how to reserve parking
lot controllers.

**We will even pay
you up to \$175
per unit installed!**



*Greater Sudbury Hydro Inc.
Hydro du Grand Sudbury Inc.*

Visit sudburyhydro.com or call 675-0517.

Parking Lot Controllers

Background:

- Electronic devices that control the electricity supply to outdoor plugs used for engine block heaters, allowing fleet, building and property managers to effectively control electricity usage in their parking lots, during winter months.

Parking Lot Controllers



Parking Lot Controllers

- Units are Local Control Devices that are installed in place of the receptacle at the parking site.
- Simple to install and doesn't require major wiring modifications.
- Indicating LED's also warn users if their heaters are faulty as they plug in.

Parking Lot Controllers

In contrast to timers, they automatically adjust the length of time that electricity is provided to the plugs based on outside temperature.

Above -5°C , outlets typically receive no electricity. As the temperature drops, electricity is progressively delivered for longer periods of time.

Once the temperature drops to below -20°C , the power remains on continually.

Parking Lot Controllers

- Greater Sudbury Hydro has received approval to run this program for 2009 through 2011.
- **Includes a \$175 incentive per unit available to GSH's commercial customers**

Parking Lot Controllers

Savings Estimate

- It's estimated that in the multi-residential sector, for every hour a block heater is plugged in, 30 minutes of energy is wasted.
- A 75 unit apartment building could potentially use 37.5kW based on 75 cars with 500 watt block heaters. Thus, based on operating 10 hours per day, 7 days per week, 16 weeks of winter, the potential usage could be 42000kWh annually. Studies have determined that the average direct consumption savings with the installation of the controller is over 65%, therefore, the potential annual savings is about 27300kWh or \$3,300. (Based on 12¢ per kWh)

Parking Lot Controllers

- A local school bus company with 95 buses (standard 66 passenger school buses have 1000W engine block heaters) use 95kW. Based on a connected time of 12 hours per day 5 days a week for 16 weeks, energy usage could be in excess of 91mWh costing about \$11,000. With the installation of the controller, the energy usage would be reduced to 32mWh costing \$3,800 which represents a savings of about \$7,200 per winter season. (Based on 12¢/kWh)

Report for Parking Group: Mississauga..Yards

Monday, April 23, 2007
Present Data Report

Average parking duration (A/D): 75.73 Hours
Average vehicle load (B/A): 641.72 Watts
Average power consumption savings ((B-C)/B): 65.45 %

Serial Number	Stall Name	Power On Time (days)	Plug-in (A) Time (hrs)	Power Consumption		Plug-in Count (D)	Park Time (hrs)	Load Size (W)	Stall Save (%)	Overload Count	Requalify Count	Short Cct. Count	Power-Up Count
				Without (B) IPLC (Kwh)	With (C) IPLC (Kwh)								
10815A	010815A	676.00	3498.89	1814.68	480.53	47	74.44	518.64	73.52	0	0	2	4
10815B	010815B	676.00	5033.23	3041.35	895.47	46	109.42	604.25	70.56	0	0	2	4
10816A	010816A	675.99	774.30	568.08	160.91	5	154.86	733.67	71.68	2	0	6	4
10816B	010816B	675.99	1273.40	916.81	169.56	10	127.34	719.97	81.51	7	0	4	4
10817A	010817A	675.99	82.53	75.69	21.14	7	11.79	917.12	72.07	0	0	0	4
10817B	010817B	675.99	457.54	257.45	34.53	63	7.26	562.68	86.59	0	0	5	4
10818A	010818A	675.99	2760.70	1617.86	773.69	25	110.43	586.03	52.18	0	0	2	4
10818B	010818B	675.99	3044.69	1231.19	599.33	147	20.71	404.37	51.32	0	0	7	4
10820A	010820A	675.97	75.55	91.12	1.60	3	25.18	1206.08	98.25	0	0	1	4
10820B	010820B	675.97	9.41	3.86	0.76	3	3.14	410.32	80.19	0	0	2	4
10821A	010821A	675.99	4830.85	3439.51	1346.73	55	87.83	711.99	60.85	1	0	1	4
10821B	010821B	675.99	4791.11	3014.88	1209.49	51	93.94	629.27	59.88	0	0	2	4
10822A	010822A	675.99	3644.53	2455.13	811.45	52	70.09	673.65	66.95	1	0	3	4
10822B	010822B	675.99	3147.85	2175.55	856.56	59	53.35	691.12	60.63	0	0	0	4
10823A	010823A	675.98	2252.80	1663.76	513.37	19	118.57	738.53	69.14	0	0	22	4
10823B	010823B	675.98	2137.20	1328.37	373.09	17	125.72	621.55	71.91	0	0	1	4
10824A	010824A	675.98	3111.14	2053.13	846.41	38	81.87	659.93	58.77	0	0	0	4
10824B	010824B	675.98	2077.73	1230.28	444.45	19	109.35	592.13	63.87	0	0	3	4
10825A	010825A	675.99	3475.53	1814.88	478.82	32	108.61	522.19	73.62	0	0	0	4
10825B	010825B	675.99	3377.53	1475.27	427.51	29	116.47	436.79	71.02	1	0	1	4
10826A	010826A	675.99	3454.90	3184.08	1471.64	49	70.51	921.61	53.78	0	0	6	4
10826B	010826B	675.99	4021.36	2840.69	1318.78	47	85.56	706.40	53.58	0	0	7	4
10827A	010827A	676.00	4621.50	2975.53	981.45	47	98.33	643.85	67.02	0	0	1	4
10827B	010827B	676.00	4758.64	2762.32	712.76	60	79.31	580.49	74.20	0	0	0	4
11111A	011111A	420.05	2626.90	2024.44	515.75	10	262.69	770.66	74.52	0	0	1	5
11111B	011111B	420.05	2376.59	1965.87	454.58	7	339.51	827.18	76.88	0	0	0	5
Totals			71716.41	46021.77	15900.35	947				12	0	79	

Vending Machine Power Controllers Program



POWER DOWN WHEN NO ONE'S AROUND...

And save 35% - 55% In energy costs

The VendingMiser®, is designed to use less energy in refrigerating beverage vending machines by automatically powering down and re-powering the cooling system at one to three hour intervals, while ensuring that the product stays cold.

Call Greater Sudbury Hydro today for details on how to reserve VendingMisers® for your business establishment. We will even pay you up to \$175 per unit installed!



*Greater Sudbury Hydro Inc.
Hydro du Grand Sudbury Inc.*

Visit sudburyhydro.com or call 675-0517.

Vending Machine Power Controllers

Background:

- Vending machines and self serve coolers present an excellent opportunity for energy conservation.
- They operate 24/7 and consume six times as much energy as a household refrigerator.
- Found in all local hotels/motels, restaurants, colleges, university, hospitals, high school cafeterias, recreation facilities, supermarkets and corner stores to mention a few.
- By installing vending machine power controllers, energy consumption and costs can be cut in half.

Vending Machine Power Controllers



Vending Machine Power Controllers

- The power controller consists of a passive infrared motion sensor and control unit.
- Monitors the presence of people in the room using infrared technology and automatically powers off the vending machine if no one is present for 15 minutes.
- Once powered off, the device monitors the temperature of the room and will power the machine on in 1.5 to 3 hour intervals.

Vending Machine Power Controllers

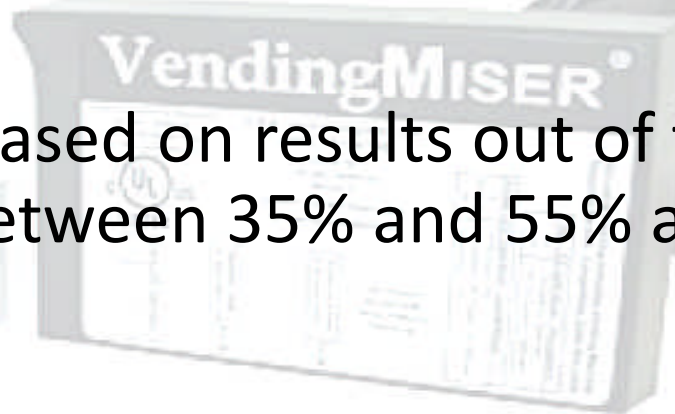
- Greater Sudbury Hydro has received approval to run this program for 2009 through 2011.
- **Includes \$175 incentive per installed device available to GSH's commercial customers**



Vending Machine Power Controllers

Savings Estimate

- The energy savings will depend on the pedestrian traffic in the area of the controlled machine.
- Annual savings, based on results out of the USA, are expected to be between 35% and 55% annually.



LED Traffic Light Conversion Program

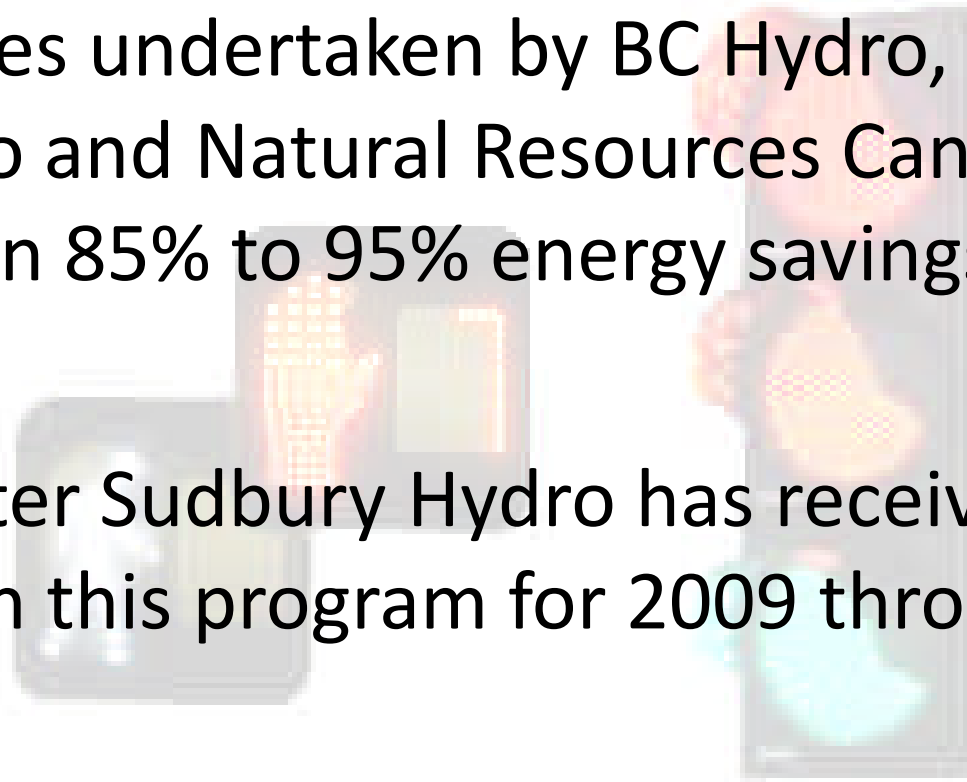


LED Traffic Light Conversion

- The traffic signal market in Canada and abroad is shifting toward low energy consuming LED technology and away from inefficient incandescent bulbs.

LED Traffic Light Conversion

- Studies undertaken by BC Hydro, Manitoba Hydro and Natural Resources Canada have shown 85% to 95% energy savings.
- Greater Sudbury Hydro has received approval to run this program for 2009 through 2010.



LED Traffic Light Conversion

- Incentives will be offered for Red, Green, Advance Green Arrows and Pedestrian Signals.
- Yellow yield and yellow arrows are not covered.



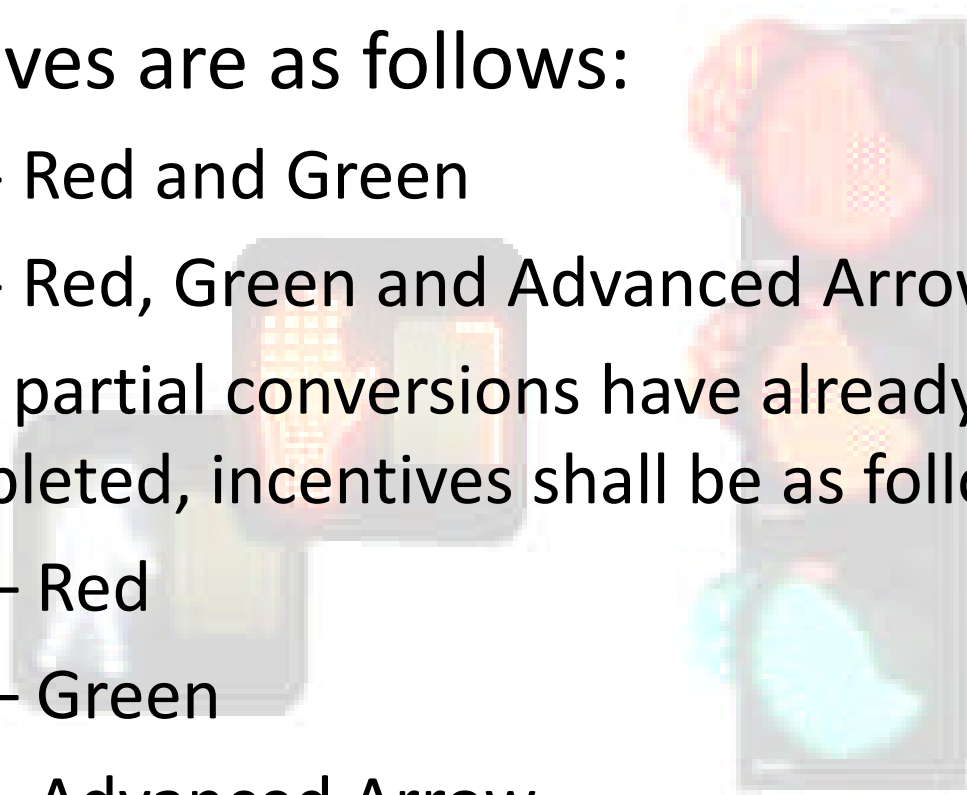
LED Traffic Light Conversion

- Incentives are as follows:

- \$55 - Red and Green
- \$88 - Red, Green and Advanced Arrow

Where partial conversions have already been completed, incentives shall be as follows:

- \$20 – Red
- \$30 – Green
- \$30 – Advanced Arrow
- \$30 – Pedestrian



Demand Response (Peaksaver™) Program

Join PeakSaver
for your chance to

**WIN
A LAUNDRY
ROOM
MAKEOVER**

valued at **\$4,500**
which includes a
Kenmore ENERGY STAR®
Front Loader Washer
& Dryer and \$500 cash

Draw Date: July 15, 2009

Join the Peak Saver program
by June 30th and receive a FREE
programmable thermostat and
installation, a \$25 rebate on your
hydro bill – a package worth
more than \$400; and, a chance
to **WIN A LAUNDRY ROOM
MAKEOVER**, a \$4,500 value
which includes:

- Kenmore ENERGY STAR® Front
Loader Washer and Dryer*,
- Wicker Laundry Baskets,
- Dryer Rack,
- One Year Supply of Hi-Efficiency
Laundry Detergent,
- \$500 Cash for Renovation Costs!





**Greater Sudbury Hydro Inc/
Hydro du Grand Sudbury Inc**
Visit sudburyhydro.com or call 675-0517

*Offer available to all Greater Sudbury Hydro electricity customers with central air conditioning, who join the PeakSaver program by June 30th, 2009. **Prize includes a Truffle coloured Kenmore Elite 4.4 cu. ft. Sierra HE 5t Steam Front Load Washer and 7.5 cu. ft. HE 5t Steam Front Load Dryer (not as shown).

PeakSaver™

To be eligible:

1. The applicant must be a residential or small commercial customer of Greater Sudbury Hydro.
2. Customers must own a central air conditioner.

PeakSaver™

Program is designed to help ensure that the demand for electricity does not exceed supply in the province and our community during summer peak demand times.

Attempt to avoid brown-outs and black-outs when supply is constrained.

To avoid a reoccurrence of the black-out that we experienced on August 14, 2003.



PeakSaver™

The special programmable thermostat and/or switch plus installation are free of charge and a one time \$25 credit applied to their hydro bill (value worth more than \$400).

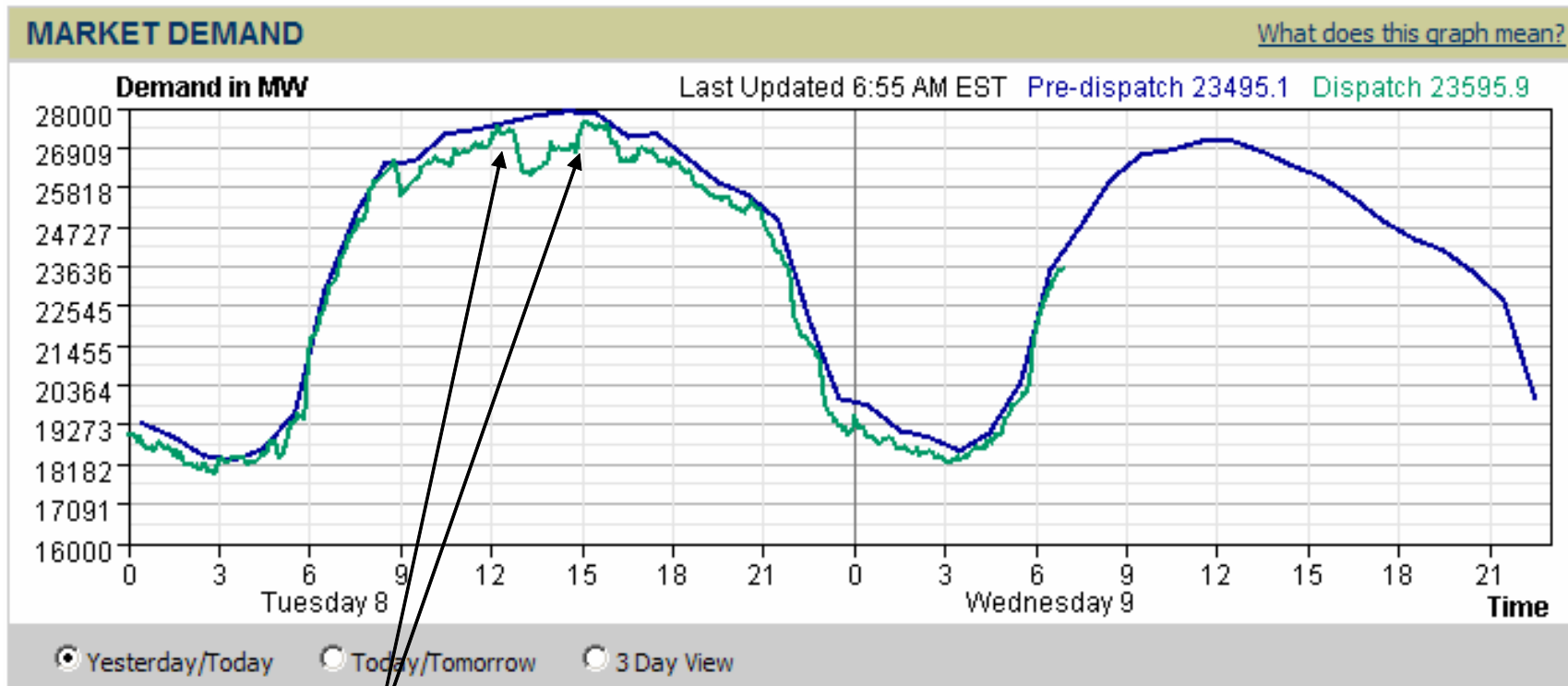
Many consumers have chosen to have the thermostat installed on their AC unit and a switch on their water heater (when combined with the thermostat, the value is worth more than \$800)

In return the customer allows the utility to raise the set point of the thermostat or shut off the switch during peak demand periods.

PeakSaver™

- Activation period between 1:00pm and 10:00pm.
 - Maximum of 4 hours per day and to an aggregate maximum of 40 hours per year
 - May to September inclusive (never activated during heating season).
 - unlikely to occur on holidays or weekends.
- ** The yearly limit could also be exceeded for system reliability or emergencies.

PeakSaver™



PeakSaver event start and Stop

Courtesy IESO

PeakSaver™

- Toronto, ON, July 9, 2008
- “....the program, saved in excess of 40 megawatts during a day in which temperatures reached as high as 32 degrees and the humidex went as high as 38 degrees in some parts of the province. The 40 MW of peak reduction is equivalent to the peak electricity requirements of about 10,000 homes.” (OPA Website)

PeakSaver™

As an Added Bonus. . .

If you schedule an appointment to have the thermostat or a switch installed on your central air conditioning unit before June 30, 2009, **you could win a laundry room makeover valued at \$4500.00 dollars.**

Refrigerator Roundup



**Trade your old
ENERGY SUCKING FRIDGE
and save 18%***

Plus a chance at a \$2,500** rebate



**THE GREAT
REFRIGERATOR
ROUNDUP**

every kilowatt counts

Sudbury Hydro Inc.
Hydro de Grand Sudbury Inc.

For details call 675-0517
or visit sudburyhydro.com

* Refrigerator must be at least 12 years old, in working condition, and between 18-27 cubic feet. ** A credit amount, up to \$2,500, applied against the selected refrigerator's future electricity bills. **Offer is part of the Ontario Power Auction.

Refrigerator Roundup

The Refrigerator Roundup is an Ontario wide program designed to remove older inefficient refrigerators and freezers from the Ontario grid.

The program also ensures that the appliances are disposed of and recycled in a responsible manner

Refrigerator Roundup

- No need to remove your appliance from your home - pick-up is free and we'll haul it out of your home and dispose of it in an environmentally way so that all that remains to go into the landfill will fit into a cowboy hat.
- We ask that refrain from putting these appliances at roadside for pick-up and transport to our local landfill; but rather ... to take advantage of this service with the next pick-up dates as follows:
 - May 21/09 / May 26/09 / June 4/09 / June 10/09 / June 17/09 / June 24/09

Refrigerator Roundup

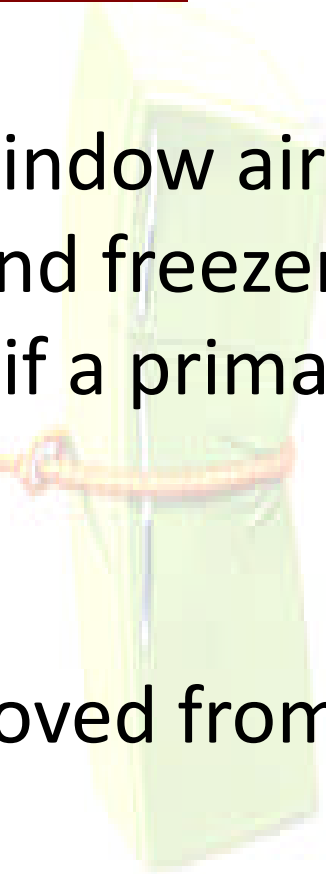
The Primary Appliance must be a refrigerator or freezer that is:

- Working condition
- Manufactured in 1994 or earlier
- Is between 10 and 27 cubic feet



Refrigerator Roundup

- Secondary appliances such as window air conditioners and refrigerators and freezers under 10 cubic feet also qualify if a primary appliance is being picked up.
- Window A/C units must be removed from window prior to pick up.



Refrigerator Roundup

AS A BONUS!

Receive a 10% discount coupon towards the purchase of an Energy Star® refrigerator from [THE NOTRE DAME BOYS and Sears](#); and, if you purchase before August 31, 2009 you will save an additional 8% PST exemption.

PLUS!

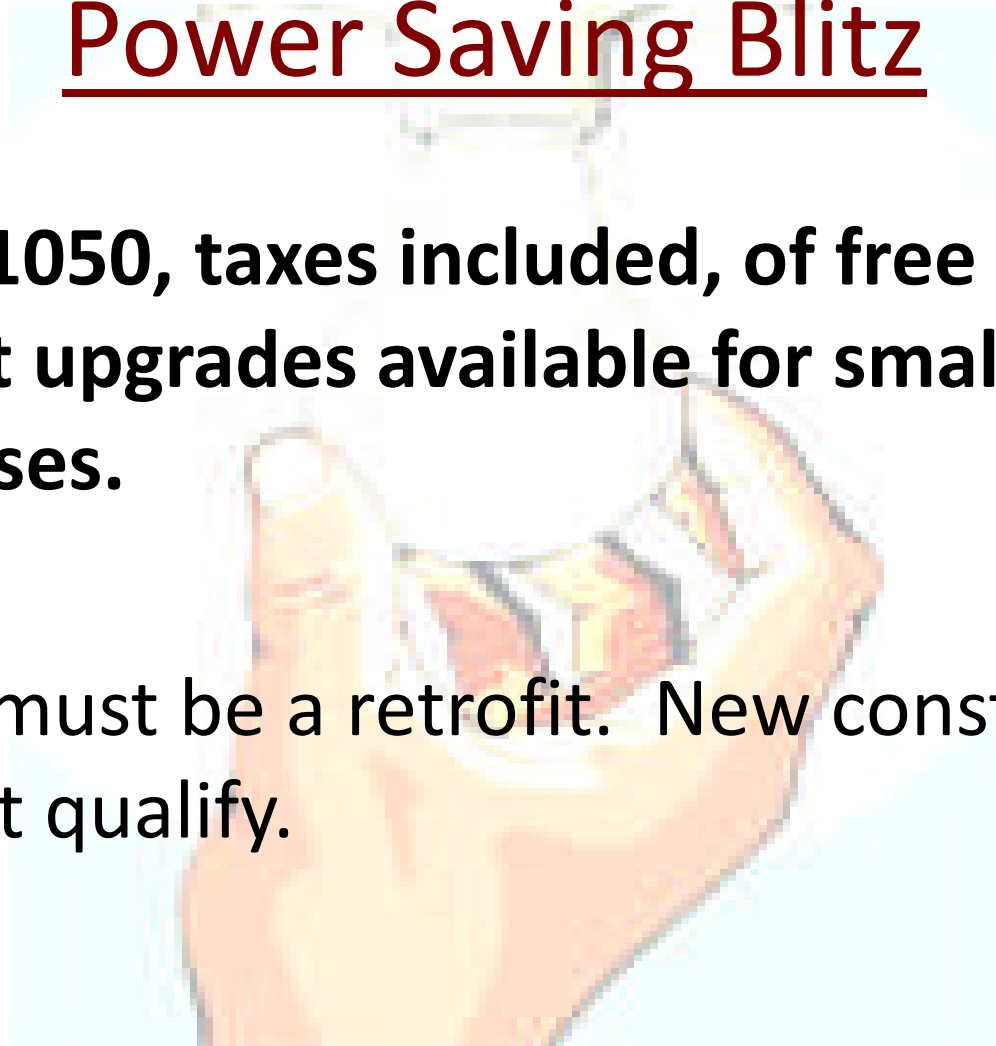
If you bring us the bill of sale, with the make and model number of the Energy Star® refrigerator, you will be entered to win the equivalent value of your purchase, to a maximum of \$2500, to be applied to your future electricity bill.



Power Saving Blitz

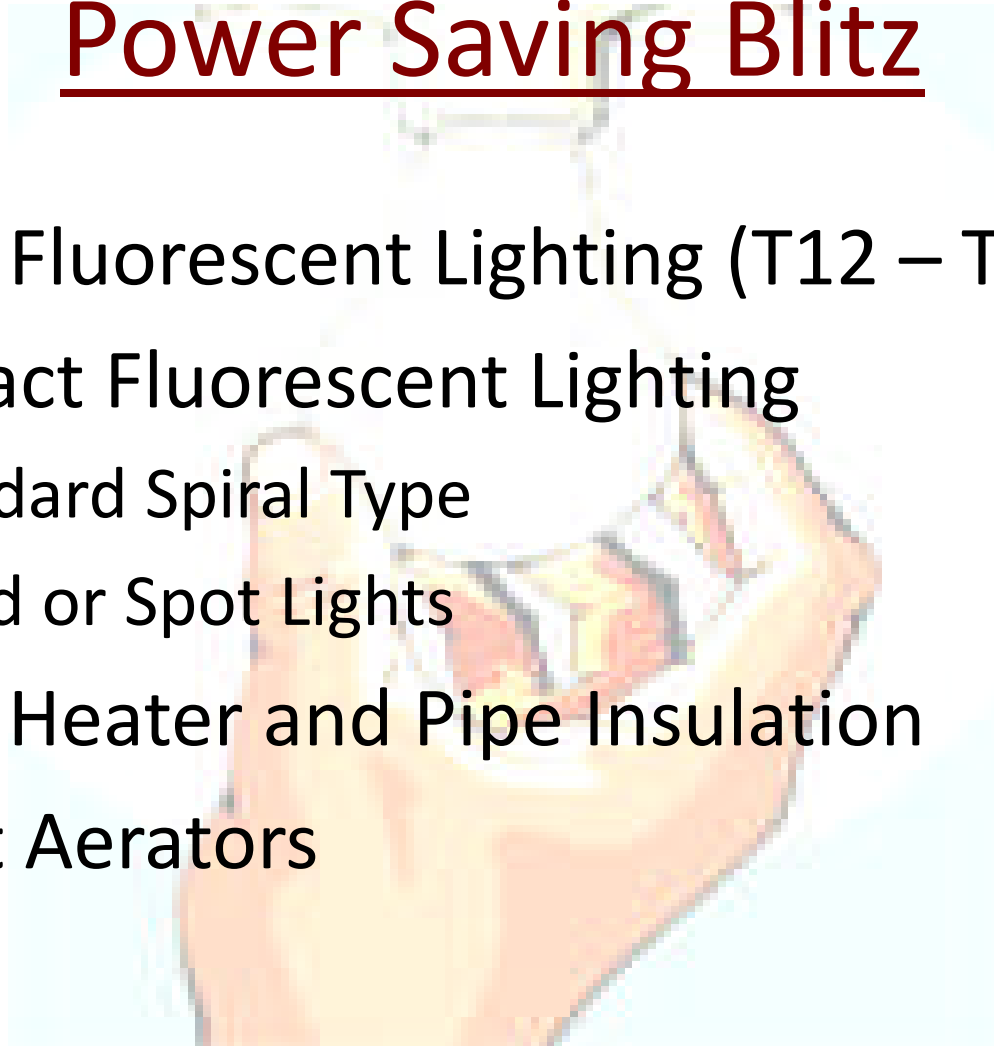
Power Saving Blitz

- **Up to \$1050, taxes included, of free energy-efficient upgrades available for small businesses.**
- Project must be a retrofit. New construction does not qualify.



Power Saving Blitz

- Linear Fluorescent Lighting (T12 – T8)
- Compact Fluorescent Lighting
 - Standard Spiral Type
 - Flood or Spot Lights
- Water Heater and Pipe Insulation
- Faucet Aerators



Power Saving Blitz

- Participants will receive a free energy assessment.
- If eligible, a work order will be issued to upgrade their electrical equipment.
- Minimum \$300 to maximum \$1050 including all taxes for all retrofit measures installed.
- Participants will have no out-of-pocket expenses unless they wish to exceed the \$1050 limit.

Power Saving Blitz

- The 2008 Power Blitz program was very successful and Greater Sudbury Hydro **paid out more than \$134,000** in incentives.
- All retrofit measures are decommissioned and disposed of in accordance with all laws and regulations and environmental best practices.
- They cannot be sold or used elsewhere.



Electricity Retrofit Incentive Program

ERIP



ERIP

The program offers incentives for energy conservation and load management initiatives undertaken within existing buildings in the commercial, institutional, industrial and agricultural sectors.

ERIP



To be eligible:

1. The facility must be within the Greater Sudbury Hydro Service Territory and serviced by GSH
2. Must have an active account with GSH
3. Project must be a retrofit. New construction does not qualify.

ERIP

A light green background with a faint, large circular arrow in a clockwise direction. In the center of the arrow is a glowing yellow light bulb with a brown base.

Two types of projects:

1. Prescriptive – predefined technologies. The incentive is based on what is installed.
2. Custom – Measures that result in electrical demand reduction. The incentive offered is based specifically on the level of improvement.

ERIP

A lightbulb with a green recycling symbol around it. The recycling symbol is a circular arrow pointing clockwise, with a lightbulb in the center. The background is a light green gradient.

Prescriptive Examples:

Most Common:

1. Lighting

- Fluorescent lighting systems (T8, T5, CFL)
- Metal Halide lighting systems
- LED "exit" signs
- Occupancy sensors

2. Motors

- Three-phase premium-efficiency motors 1-200 hp

3. Cooling Equipment

- Unitary A/C units up to 25 tons that are Energy Star qualified or CEE (Consortium for Energy Efficiency) compliant

Other Items Covered Under Prescriptive Measures:

Transformers

Heating

Ventilation

Certain Agribusiness Equipment

ERIP

Custom Project Examples:

- Replacement of existing electrical equipment with new higher efficiency electrical equipment
- Replacement of oversized existing electrical equipment with new “right-sized” efficient electrical equipment
- Implementation of more efficient operation procedures and controls

All technologies must be commercially proven.

ERIP

Benefits

In 2008, Greater Sudbury Hydro **paid out more than \$108, 000** in incentives to commercial customers which will help them to improve their bottom line by lowering their electricity bill.

In 2009, to date we have **approved incentives totaling about \$135,000.**

In some cases the incentives cover over 20% of the material cost and some customers will recover the project cost, as a result of energy savings, in as little as 5 months.

Find Out More

- For more information -

Call us at: 675-0517

Or visit our website at:

www.sudburyhydro.com

****Take the Pledge – “Count Me In”**

www.energyconservationweek.ca