




Power to Ontario. On Demand.



Get Energy Smart

A smart grocer's guide to managing electricity costs

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Welcome to Get Energy Smart:

A smart grocer's guide to Ontario's electricity market.

Start Smart

As a grocer, you know what it's like to squeeze every penny you can from your store. Profit margins are small. What you save here, you re-invest there. And with that re-investment, you work hard to grow your business and compete with other stores and retail banners.

But how do you level the playing field when electricity can eat up a significant portion of your operating budget? You may need to think smarter about electricity. And that's where this guide can help.

The Independent Electricity System Operator – the not-for-profit entity that manages Ontario's power system and electricity market – and the Canadian Federation of Independent Grocers have teamed up to develop this *Get Energy Smart* guide. There are some simple – and some long-term – ways to keep your electricity costs under control. We want you to know about them so that you can make informed choices. It all starts with a plan – a plan that you manage, monitor and adjust until you reach your goal.



Inside this guide, you'll find:

- **Basic facts about Ontario's electricity market.** Prices in the Ontario electricity market are based on supply and demand. In order to stay on top of your expenses, you need to know how the market works... and make it work for you.
- **Strategies for saving money.** Three independent Ontario grocers will tell you first-hand how they plan, manage and monitor their electricity costs... and how much they expect to save on their annual electricity bill.

Whether you have one store or many, whether you're retrofitting or expanding your business, this guide is designed with your needs in mind. Our goal is to help put you in control of your electricity costs so that you can get on with the job of growing your business.

Understanding your electricity bill

How much you pay for electricity largely depends on two things: when you use it and how much of it you use. In other words, everything that runs on electricity – from refrigerators to lights to the bakery to pop coolers – finds its way into your bill.

pay a variable rate that goes up and down depending on the time of day and the calendar month. That rate is called the Hourly Ontario Energy Price (HOEP). By understanding how it works, you can make it work for you.

Charges			Taxes	
Standard Supply Service (SSS)			GST	
SSS Admin Charge	\$0.25/month	\$0.25	Total Taxes	
Electricity*	\$0.096498/kWh	\$30,653.48	Account Status Year	
Provincial Benefit		-\$5,352.57	Cost Incurred	
Miscellaneous			\$34,14	
Transmission Connection Charge	\$2.3769/kWh	\$1,225.05		
Transmission Network Charge	\$2.3322/kWh	\$1,202.02		
Debt Retirement Charge**	\$0.0077/kWh	\$2,128.06		
Wholesale Market Services	\$0.0062/kWh	\$1,969.49		
Total Other Charges		\$31,825.78		

▲ Typical electricity bill

When your local utility calculates your bill, it looks at how much electricity your store uses and what your highest *peak* is for the month. The peak demand – which is measured in either kilowatts (kW) or kilovolt-amperes (kVA) – represents the most electricity that you use in one fifteen minute period in a month. That peak determines how much you will be charged for transmission and distribution each month. Your store could use the same amount of electricity every month, but if you lower your monthly peak, your bill will be less.

Your bill also reflects how much electricity you use each month. The *electricity charge* – sometimes called the *generation charge* – is based on your total usage. It is measured in kilowatt-hours (kWh).

Electricity rates

If you have a **fixed-price contract*** with an energy retailer, you are charged a set rate for the electricity you use. But if you don't have a contract, then you

Interval meters* monitor how much electricity you use – and when you use it. If you have an interval meter, your bill is calculated using the hourly rate. By 2007, most businesses in major urban centres will be required to have an interval meter.

Electricity pricing

In Ontario, electricity is bought and sold like any other commodity and is subject to the forces of supply and demand. But unlike other commodities, electricity can't be stored. It must be generated at the moment it is needed. If everyone in Ontario wants to use electricity at the same time – and often they do – there must be enough power available to meet the peak hour of the day. As demand rises and falls, so too do electricity prices.

Here's an example. Let's say there's a heat wave in August. If it's a weekday, when businesses are open and every air conditioner and refrigeration system is running continuously, the price for electricity will go up because more expensive types of electricity generation are required to meet the need. Add to this the fact that Ontario is currently experiencing a shortage of electricity, and the price might increase even further. Time of year is just one factor that determines the price of electricity.

Think about your typical workday. Now factor in the millions of other people with workdays like yours.



▲ IESO Control Room

Electricity follows the same pattern. More of it is used between 4 p.m and 6 p.m. than at any other time of day, because that's when businesses are still operating and when people arrive home, turn on the lights, prepare dinner and adjust the thermostat. The price for electricity also tends to be higher at this time, reflecting the increase in demand.

Managing your costs wisely

Canadian grocery stores consume approximately 9.9 billion kilowatt-hours of electricity each year – enough to power a city the size of Ottawa for one year. Of that, 30 to 50 per cent is used for refrigeration, with the balance consisting of lighting, heating, space cooling, baking and other uses. Interestingly, air conditioning accounts for a very small portion of a store's annual energy bill.

Start with a plan

In addition to conserving energy, there are many low-cost ways to keep your electricity costs in check. You will find some examples on pages 4-9 of this guide. Each of the grocers who are profiled here started with an energy **audit***. They wanted to know how much it would cost to make changes, and what the **pay-back*** period and projected savings would be. Those are smart questions. We hope the solutions they came up with for their stores will help you plan the next move for yours.

Terms with a * next to them are explained in the back of this guide. See 'Think Smart' section on page 10 for details.

▼ Lights in the refrigerated foods section of Longo's North Burlington store

No-cost ways to save

Conservation* is one of the easiest ways to control your store's electricity costs. The smart part about conservation is that it can cost you nothing. You can save approximately five per cent on your electricity bill simply through regular maintenance of your store's equipment and by operating machinery properly. Here are some no-cost ways to start improving your bottom line:

REFRIGERATION

- Clean refrigeration equipment condenser and evaporator coils regularly.
- Keep upright display case doors shut.
- Keep air curtain supply and return registers clean and clear of product.
- Rotate stock regularly.
- Do not let refrigerated items sit and warm up during delivery and/or restocking.

HEATING AND COOLING

- Set the thermostat to recommended levels of 16-18°C during the winter and 22-24°C in the summer.
- Maintain vinyl curtains in loading areas.
- Inspect and clean condenser coils regularly.
- Close doors to keep warm/cool air inside.

LIGHTING

- Reduce lighting to minimum acceptable levels for safety and security in hallways, restrooms, storerooms and coolers.
- Avoid over-lighting your aisles and displays.
- Turn lights off when not in use.





Plan Smart



“I’m trying to educate myself now because I want to use 50 per cent less energy in my new store.”

Evan MacDonald
Owner, Village Grocer

There are no blueprints yet, but Evan MacDonald already knows that his new store will be designed with energy efficiency in mind. And that he’ll pay far less for electricity than he does now.

It will have a ventilation system with heat recovery to recycle the heat (or cool air in summer) from exhausted air. And special motors on the fans in his refrigeration units – called electronically commutated motors (ECMs) – will cut the amount of electricity used by conventional refrigerator fans by one-half.

It may sound futuristic, but when your electricity costs range from \$4,000 to \$6,000 per month, as Evan’s do, you soon realize that you need to plan smart in order to keep your electricity costs in check.

“Electricity used to be near the bottom of my list of priorities,” says Evan. “But now that I know I will probably have to install an interval meter in my new store, electricity has jumped up the list to number two. I’m trying to educate myself now because I want to use 50 per cent less energy in my new store. Energy efficiency will be a focal point of the new place.”

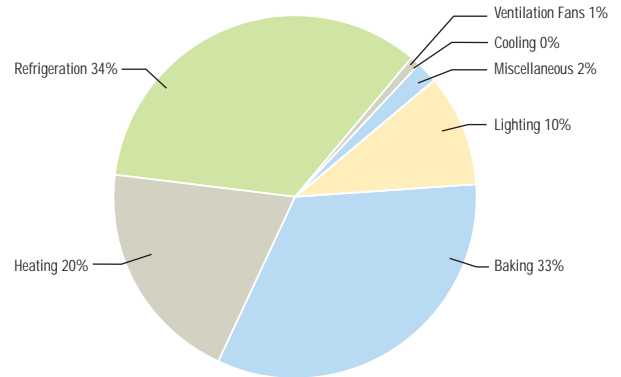
Light sensors that turn indoor lights on only when natural light is dim can save Village Grocer \$990 per year.

GROCER:
Village Grocer
LOCATION:
Markham
FLOOR AREA:
615m²
RETAIL AREA:
557m²
ANNUAL ELECTRICITY BILL:
\$50,000-\$70,000

While he's busy making plans for his new venture, Evan has already started to make his Markham store more energy efficient – starting with the lights. His immediate plan is to:

- Invest \$650 to replace all the 50-watt incandescent track lighting in his store with 15-watt compact fluorescent lights.
Annual savings: \$2,200
- Spend \$700 for daylight sensors that flick lights on only when the outside light is dim.
Annual savings: \$990

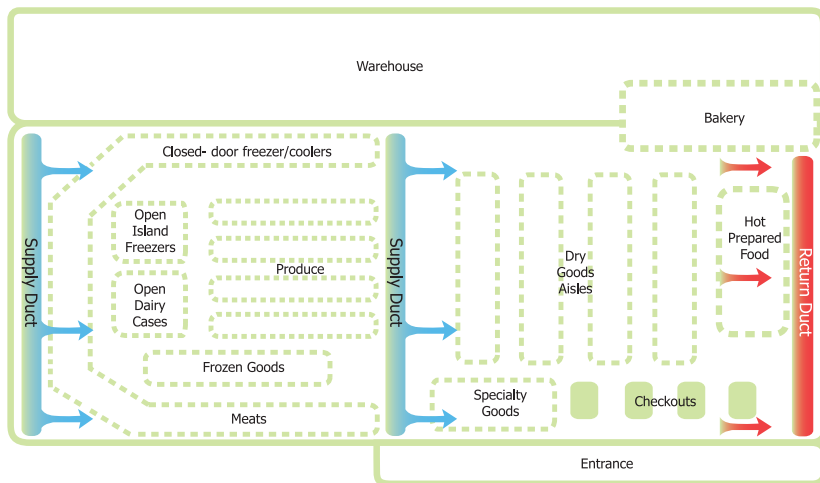
Energy Use Breakdown



Baking accounts for 33 per cent of Village Grocer's total electricity bill. It is one activity that can be scheduled for certain hours of the day as a way of lowering a store's monthly electricity peak and avoiding hours when electricity prices are high.



Layout Improvement Possibilities



Village Grocer is considering a plan that would group cool areas together, keeping them separate from warm areas where heat and humidity build up. Air would be flowed over the refrigerators, move toward the produce and dry goods, then be exhausted near the bakery and check-out counters.

The bakery area might be another part of Evan's energy efficiency plan. Because baking is a significant part of his business, he operates the ovens round the clock. Evan could practice **load shifting*** – by baking only at night and early in the morning when electricity prices tend to be lower – but he's still deciding how feasible that option is. For now, he's got more immediate plans. By installing a \$12,300 heat recovery system that transfers heat from the refrigerator's compressors to the store's hot water tanks, he can reduce the amount of natural gas that's required to do the same job and save \$4,700 a year – a pay-back of 2.6 years on his investment.

"As a businessman, I need to know what energy efficiency costs, how much I will save and what the pay-back is. There's a lot at stake; that's why you need to get informed and plan accordingly."

Manage Smart



GROCER:
Longo's
LOCATION:
North Burlington
FLOOR AREA:
3,695 m²
RETAIL AREA:
2,500 m²
**ANNUAL ELECTRICITY
BILL:**
\$170,000 - \$200,000

Anthony Longo – the company's President – and John Gallo – Operations Support Specialist – have always managed their business with energy efficiency in mind. But when the electricity market changed three years ago, and their stores started paying the market price for electricity, they knew it was time to start doing things differently.

"Initially we put some of our stores on fixed-price contracts because we wanted price stability," says John. "Since then we've compared electricity costs for our stores that were on fixed-price contracts to those on the fluctuating market rate. We found that, averaged over a few years, the costs came out about the same. Our decision now is whether we want to be exposed to the volatility of market prices. The rebate from the **provincial benefit*** does help to reduce our costs somewhat. Going forward, we need to be even more strategic about how we manage our electricity costs."

Here is the plan. The store's refrigeration system – which represents 37 per cent of its energy use – is already state-of-the-art. To keep these costs under control, Longo's has an intensive maintenance programme. A contractor comes in to the store three times a year to recalibrate all controls and temperature settings, and to clean condenser and evaporator coils. All of the refrigeration units have roll-down aluminum blinds to keep the coolness in at night. Longo's also plans to test a new component to their software that will shut off some of the refrigeration, HVAC and lighting when the price of electricity is high.

To drive electricity costs down even more, Longo's is focusing on decreasing its lighting costs, with a goal of shaving a further five to seven per cent from the store's \$14,000 to \$17,000 monthly electricity bill.

"Before we retrofit any further, however, we're doing our homework," says John. "We use a combination of 400-watt metal halide lights and fluorescent lights in this store. We are testing 250-watt dual reflective H.I.D. lights in one of our other stores to see how they compare. If they measure up, we'll



“The profit margins are so small in the grocery business; you have to manage your electricity costs just as aggressively as all your other costs.”

John Gallo
Operations Support Specialist
Longo's

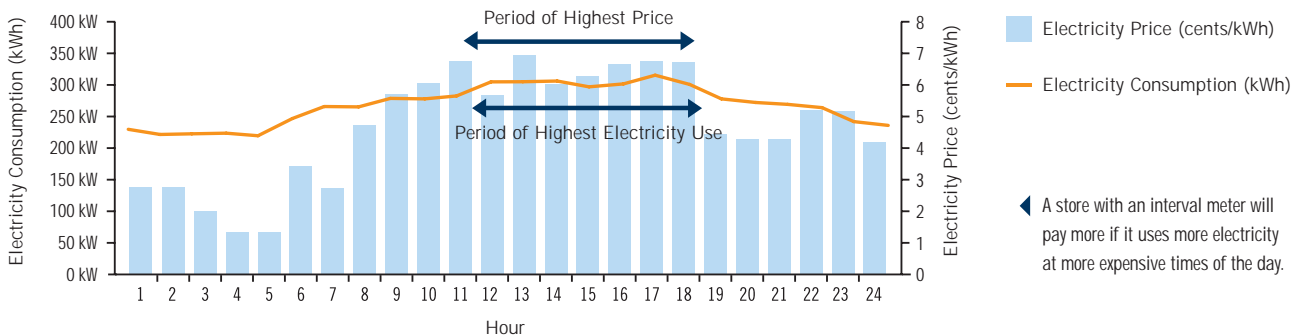
retrofit. We also know that occupancy sensors have worked in our head office, so we're hoping to try them in the store offices too.”

Other retrofiting strategies include asking tenants who lease space within the store to adhere to Longo's lighting policies, meaning they will be expected to replace any incandescent lights with fluorescent lights which are more energy efficient.

Longo's employees have a role to play too. A new initiative is underway to encourage employees to do their part to keep lights off when they're not in use.

“Our experience as one of the bigger independents is that change is incremental. We keep working at it. Every time we build a new store and every time we have an opportunity to retrofit, we'll do it with energy management and solid economics in mind. We're now getting involved much earlier in the building process, ensuring that energy efficiency is reflected in the blueprints. The profit margins are so small in the grocery business; you have to manage your electricity costs just as aggressively as all your other costs.”

Electricity Consumption and Cost Implications





Smart Ideas

“We were surprised to see how many different opportunities there are to reduce our electricity costs.”

Rina Virgilio, Director of Operations
Concord Food Centre

Concord Food co-owner Joe Greco didn't know what to expect when he signed up for an energy audit at his Thornhill store last summer. He wondered how much he would save if he invested in energy efficiency.

It wasn't until he saw the results of the audit that he understood just how important it is to know the breakdown of energy use in your store – and then develop an energy plan that's based on hard facts.

“Before the audit, I said I didn't want night curtains because I didn't think my employees would have time for it,” says Joe. “But after learning they could save me \$3,400 a year – for a \$3,400 one-time investment – I'm reconsidering.”

According to Director of Operations, Rina Virgilio, the energy audit has changed the way Concord looks at its operations. “Now that we've reviewed the recommendations, we're looking more closely at our lighting and refrigeration systems. I was really

surprised that air conditioning accounted for such a small percentage of our annual electricity use, but that refrigeration consumed almost 47 per cent of our total use.”

Energy audits are a good way to identify where your store can save money on electricity. Some of the options that Concord Food Centre is considering include:

- Floating-head pressure controls on compressors that allow the head pressure to change according to outside conditions.

Annual savings: \$3,700

Lighting accounts for 13 per cent of Concord Food's total energy costs, while refrigeration consumes approximately 47 per cent. It costs nothing to turn off lights when the store is closed and to keep refrigerator coils clean, vents clear of product and doors closed. ▶

GROCER:
Concord Food Centre

LOCATION:
Thornhill

FLOOR AREA:
4,460 m²

RETAIL AREA:
1,440 m²

**ANNUAL ELECTRICITY
BILL:**
\$125,000 – \$165,000

- Controls for convenience coolers.
Annual savings: \$400
- Warehouse and office occupancy sensors.
Annual savings: \$2,000
- Heat recovery system on ventilation equipment.
Annual savings: \$11,200
- Air conditioning units with *high latent heat capability* will dehumidify the air, thereby reducing refrigeration loads. These units can be installed in conjunction with controls for anti-sweat heaters on glass doors and for on-demand defrost cycles.
Annual savings: \$3,500

“We were surprised to see how many different opportunities there are to reduce our electricity costs,” says Rina. “It’s definitely food for thought. In addition to seeing how much we could have saved on lights, we now understand the impact of refrigeration on our electricity bill.”

Would Joe have done an energy audit first, before he installed new refrigeration equipment last year? “You bet. I now believe that I could have made different choices. From now on, we’re setting goals, monitoring our results and managing accordingly.”

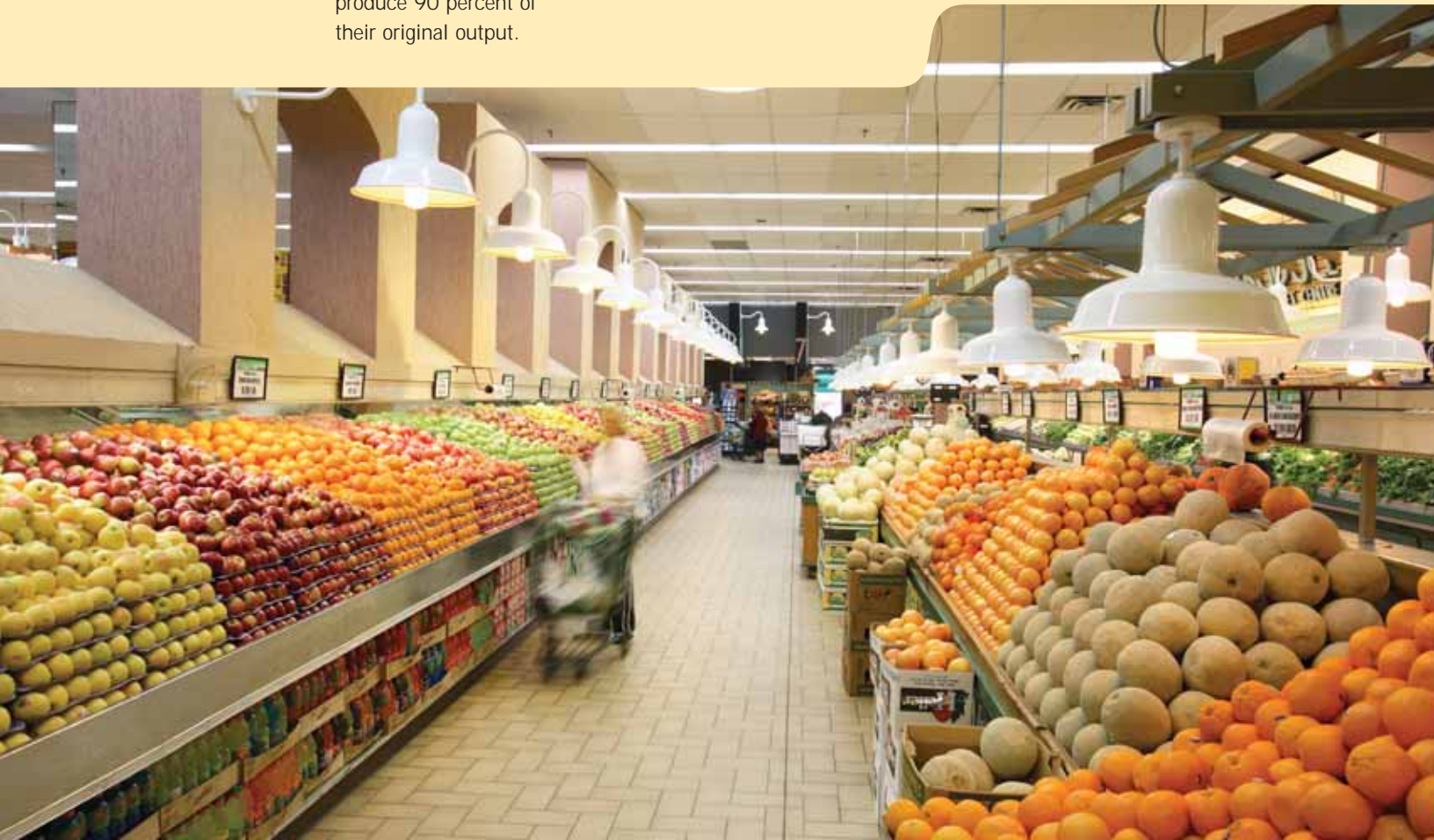
Did you Know?

METAL HALIDE LIGHTS perform poorly over time providing only 60 per cent of their original output after a few years compared to T8 fluorescent lights that cost less to operate and produce 90 percent of their original output.

T8 FLUORESCENT LIGHTS (the ‘skinny’ ones) with electronic ballasts offer the same amount of light as T12 (‘fat’) lights but use at least 20 per cent less power.

MODERN FLUORESCENT LIGHTS cast light that is almost as natural as sunlight. The green and pink tones of old fluorescents are a thing of the past.

INCANDESCENT LIGHTS including halogen lights, use four times more electricity than fluorescent lights for the same amount of light.



Think Smart

The first step to managing your electricity costs is to understand some of the terms that are used to describe the electricity market. Here is a quick primer that will help make your energy decisions easier.

AUDIT

Energy audits identify ways in which your store can save money on electricity. First, auditors will look at your electricity bill to see how much electricity your store uses for lighting, refrigeration, heating/cooling, baking, etc. Then, they will assess the condition of your store's equipment and make recommendations for changes, including the projected cost for each change and estimated pay-back period. Audits are a good first step in developing an energy management plan.

Natural Resources Canada's Office of Energy Efficiency (OEE) offers financial incentives for planning and implementing energy retrofits on commercial buildings. For more information, contact the OEE through its website www.oee.nrcan.gc.ca/buildings.

CONSERVATION

Conservation means using less electricity without compromising your store's operations. For example, by installing occupancy sensors in your warehouse, lights will only turn on if there is someone in the room. You conserve energy when the lights go out several minutes after they leave the room because you are only lighting an area when it is in use.

DEMAND RESPONSE

Demand response refers to the practice of shutting down certain parts of your operation during times when electricity is more expensive. For example, you might decide to turn off signs and display lights, convenience coolers for pop and juice, meat grinders or hot food warmers, for some period of time depending on the cost of electricity at that hour. By doing so, you would avoid paying higher prices during high demand periods, and your operations would not suffer. Only stores with interval meters can benefit from demand response.

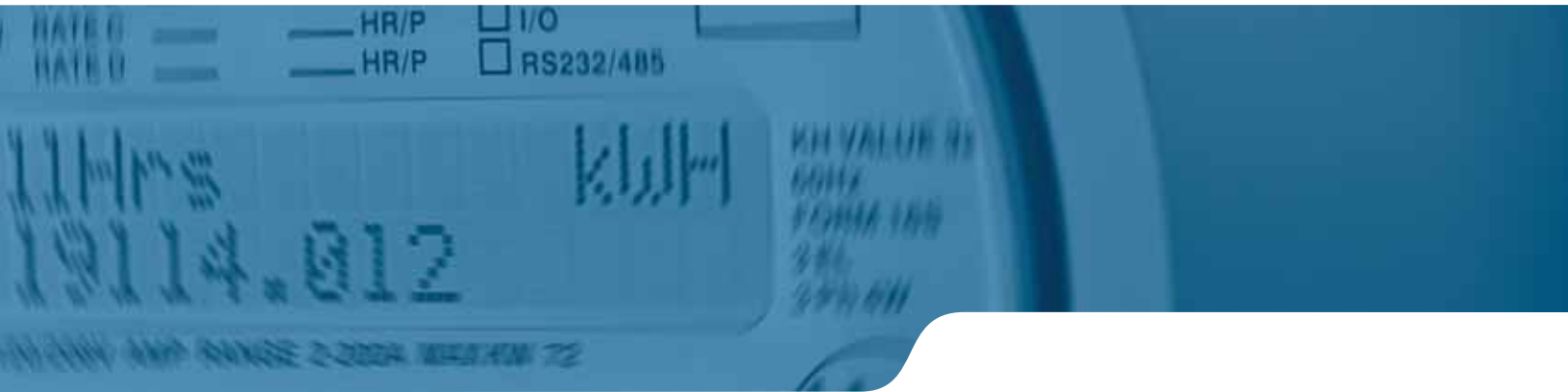


FIXED-PRICE CONTRACT

Electricity can be purchased at fixed prices from authorized electricity retailers (See www.oeb.gov.on.ca for a list of licensed retailers). The duration of the contract may vary from one to several years. Fixed-price electricity contracts are like mortgages with fixed terms; they offer the predictability of a given price for the electricity portion of your bill and the assurance of knowing that the price will not change for the duration of the contract.

INTERVAL METER

Interval meters are devices that measure electricity use and record that usage on an hourly basis, allowing customers to see how much it costs to use electricity



each hour. To find out what the Hourly Ontario Energy Price (HOEP) is, go to www.ieso.ca/business.

Some grocery stores in Ontario may already have an interval meter. Beginning in 2007, commercial customers in major urban centres will be required to have an interval meter. Customers who are not sure what kind of meter they have in their store, or how the electricity charge on their bill is calculated, should call the customer service number on their electricity bill.

LOAD SHIFTING

Load shifting refers to a practice of rescheduling operations to periods of the day when the cost of electricity is cheaper. For example, if your store has a round-the-clock bakery operation, you might decide to shift your baking to the late evening or early morning when prices tend to be lower.

In order to take advantage of load shifting, your store needs an interval meter. The data from the meter will tell you and your local utility when you are using the most electricity and what the opportunities are to reschedule your store's heavy electricity consumption times.

MARKET RATE CUSTOMERS

In Ontario, you pay the market price for electricity if you consume over 250,000 kilowatt-hours of electricity each year – equivalent to a monthly bill of approximately \$2,000 or more. Market rate

customers without a fixed-price contract pay the Hourly Ontario Energy Price for electricity. This price changes every hour depending on the time of day, time of year, demand and supply available.

PAY-BACK

Pay-back refers to the amount of time it will take you to recover the money you invest in changes designed to help your store become more energy efficient. For example, if you invest \$4,800 in warehouse occupancy sensors that allow you to save \$1,590 a year on electricity, you will recover your investment after three years. Compare that to what you might earn if you invested the same amount of money in the stock market or in a bank. Investing in energy efficiency is low-risk, and you will benefit from the same rate of savings every year.

PROVINCIAL BENEFIT

If your store uses more than 250,000 kilowatt-hours of electricity each year (equivalent to a monthly bill of at least \$2,000), you are entitled to the provincial benefit. The benefit fluctuates in value and is set to reflect the difference between the market price for electricity and the fixed rate paid for baseload generation and 'new' generation contracts. To date, the benefit has been a credit. The Ontario Power Generation (OPG) rebate – expected in the summer of 2006 – will be an additional one-time rebate.





Act Smart

The IESO and the Canadian Federation of Independent Grocers hope that this *Get Energy Smart* guide has helped to answer some of your questions about Ontario's electricity market.

As a smart grocer, we know you're already thinking about your next step. Here is a list of organizations that can help you plan your next move and start improving your bottom line.

INDEPENDENT ELECTRICITY
SYSTEM OPERATOR
www.ieso.ca/business

NATURAL RESOURCES CANADA'S
OFFICE OF ENERGY EFFICIENCY
www.oee.nrcan.gc.ca/buildings

ONTARIO ENERGY BOARD
www.oeb.gov.on.ca

PROVINCE OF ONTARIO,
MINISTRY OF ENERGY
www.energy.gov.on.ca

YOUR LOCAL DISTRIBUTION COMPANY
www.ieso.ca/imoweb/siteshared/local_dist.asp



The Independent Electricity System Operator (IESO) is a not-for-profit entity established by the Government of Ontario to manage the province's power system so that Ontarians receive power when and where they need it. The IESO balances demand for electricity against available supply through the wholesale market.



CANADIAN FEDERATION OF INDEPENDENT GROCERS
FÉDÉRATION CANADIENNE DES ÉPICIERIS INDÉPENDANTS

The Canadian Federation of Independent Grocers (CFIG) is a not-for-profit association founded in 1962. The association's mission is to further the unique interests of Canada's independent and franchised grocers across Canada through progressive partnerships with retailers, suppliers and the consumer.



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On Demand.

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