



GETTING SMART ABOUT

# SMART METERS

ANSWER BOOK



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## SMART METERS: A NEW WAY TO THINK ABOUT ELECTRICITY

Your **SMART METER** is a key part of Ontario's new smart metering system – and of building a culture of conservation across this province.

By 2010, every home and small business in Ontario will have a SMART METER.

**This guide explains** what SMART METERS are, why Ontario is introducing them, and how they can help you manage and reduce your electricity costs.

**This guide will give you all the information you need to take advantage of SMART METERS when they become fully operational.**

As you'll see, with smart metering, you'll have new options for managing and reducing your electricity costs. And as you'll learn, if we all make some small changes to how we use electricity, we can also have a positive impact, both on the environment and on Ontario's energy system.

## GETTING SMART ABOUT

# SMART METERS

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## WHY IS ONTARIO INTRODUCING SMART METERS?

**SMART METERS** will help Ontario meet its energy needs.

**Between now and 2025, Ontario must build almost a whole new electricity system.**

This includes replacing about 80 per cent of our current generating facilities as they retire over time, and expanding the system to meet our future growth.

**Building new supply is vital.  
So is conservation.**

**That's why Ontario is introducing new tools – like SMART METERS – that can help.**

SMART METERS will encourage us all to think more about how and when we use electricity.

**SMART METERS** will help smooth peak demand.

**When we're all using a lot of electricity at the same time we create a "peak demand" period.**

And supplying electricity at those peak times has a range of impacts:

- 1. It adds to our electricity costs** because higher demand often means higher market prices.
- 2. It's hard on the environment** because more of the less attractive forms of generation must be run to meet them.
- 3. It adds to the amount Ontario needs to invest in the system** because meeting the peaks requires building even more new generation, and more transmission and distribution infrastructure.

So, working together to reduce our use at peak times makes good sense.

## SMART METERS? TELL ME MORE ABOUT THEM.

How is a **SMART METER** different?

**A SMART METER is a huge advance over Ontario's current devices.**

Our old-style meters can only measure the **total** amount of electricity used over an **entire billing period** because they have to be read manually.

**A SMART METER can automatically record when electricity is used.**

So, in the future, your SMART METER will record your total electricity consumption hour by hour. And it will send that information to your utility through either a wireless or another form of technology.

**SMART METERS make time-of-use (TOU) prices possible.**

With the ability to measure **when** electricity is used, **different prices** can apply at **different times** of the day. With time-of-use pricing, you will have a new way to manage your electricity use and your bills.

What are the benefits of smart metering for me?

Here are just some of the benefits you'll see when your SMART METER is fully operational and time-of-use – or TOU – pricing is in place:

- 1. You'll be able to take action to manage your electricity bill.**
- 2. You'll get real feedback about your electricity use.**
- 3. You'll get electricity bills with actual, time specific readings because they'll be based on the hourly readings taken and sent by your SMART METER.**

# TIME-OF-USE (TOU) PRICES. HOW WILL RATES CHANGE?

## How will time-of-use prices work?

### With TOU pricing, electricity prices will vary, based on when it is used.

That includes by time of day, by day of week (weekdays versus weekend), and by season (winter or summer).

### This is a significant change from the way prices currently work.

Right now, our rates\* are based on averaging out the more expensive (daytime) and cheaper (night time) prices of electricity, simply because our older meters can't report when it was used.

### TOU pricing will encourage Ontarians to shift some electricity use to off-peak hours.

TOU pricing better reflects the way the electricity prices actually change over the day, based on available supply and our overall levels of demand.

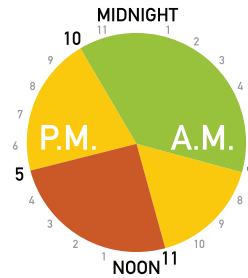


\*The Ontario Energy Board (OEB) sets electricity prices under the Regulated Price Plan (RPP). They are based on the electricity supply costs forecast for the year ahead, and any adjustments required due to differences between what was paid and what supplies actually cost over the previous period.

## What would TOU pricing look like today?

To prepare for smart metering, the OEB has developed the daily and seasonal time-of-use periods shown in the charts below. (For more information on current TOU pricing, visit [www.oeb.gov.on.ca](http://www.oeb.gov.on.ca).)

### The Summer weekdays



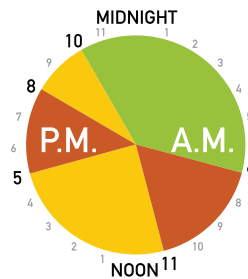
The highest energy prices occur over the afternoon, largely due to greater air-conditioning use. That's why the on-peak rate is from 11 a.m. to 5 p.m.

### Weekends and Holidays






Demand, and electricity prices are lower on weekends and holidays – as well as overnight – so these periods are all off-peak.

### The Winter weekdays



Energy prices peak twice – once in the early morning and again in the evening – mainly due to space heating, plus increased lighting and appliance use.

There are three time-of use periods:

-  **On-peak (ccc)** – demand is highest
-  **Mid-peak (cc)** – demand is moderate
-  **Off-peak (c)** – demand is lowest

## WHAT ARE THE BEST STRATEGIES FOR SMART METERING?

There are lots of simple things that we can do to save electricity and reduce electricity costs. Over the next few pages, you'll find some useful advice.

### First, give me the fundamentals.

There are a number of effective ways to approach conservation. Your **best** strategy might combine some or all of the following:

- 1. Shift some electricity use to off-peak periods.**  
Under TOU rates, shifting activities that are energy-intensive to the less expensive mid-peak and off-peak hours will make a lot of sense. See "*What are the big electricity users in my home?*" on page 7.
- 2. Reduce electricity use across all periods of the day.**  
Conservation always makes good sense – and there are many simple things you can do. See "*How about some energy-saving tips I can use right now!*" on page 8.
- 3. Ensure you're not paying for nothing!**  
Many electronic items – including, for example, computers, TVs and cell phone chargers – aren't fully off unless you pull the plug, so try to plug them into a power bar that you can turn off.
- 4. Opt for energy-efficient products, wherever you can.**  
ENERGY STAR® appliances and compact fluorescent light bulbs (CFLs) use less power, reducing both your electricity consumption and your costs.
- 5. Take advantage of conservation promotions.**  
Many utilities, and the Ontario Power Authority (OPA), are initiating programs that can help you conserve. Call us – or visit [powerWISE.ca](http://powerWISE.ca) to find out more.

## What are the big electricity users in my home?

Some of the most costly appliances to run are those that create heat or cold – such as the following:

- **Air conditioning**
- **Clothes dryers and washers**
- **Electric heating**
- **Electric stoves**
- **Electric water heaters**

Be aware, too, of old appliances and equipment that are not as efficient as today's models. A refrigerator that is ten or more years old might be using twice as much electricity, and an older electric hot water heater that is not insulated well will also consume more.



## How do I determine how much electricity my appliances use?

It's always a good practice to know just how much electricity your equipment and appliances might be using. That way you can make informed choices about how and when you use them.

- watts (W) = amps x volts
- 1 kilowatt (kW) = 1,000 watts
- 1 kilowatt-hour (kWh) = 1,000 watts x 1 hour

Here's the formula:

$$\begin{array}{r} \text{Total hours of use} \\ \times \\ \text{appliance wattage} \\ \hline \\ 1,000 \text{ (converts watts to kW)} \\ = \\ \text{Total kWh of electricity consumed} \end{array}$$

For example, if you want to know how many kWh of electricity it might use to run a clothes dryer for two hours:

$$\begin{array}{r} 2 \text{ hours (total usage)} \\ \times \\ 5,000 \text{ watts (wattage for clothes dryer)} \\ \hline \\ 1,000 \text{ (watts to kilowatts conversion)} \\ = \\ 10 \text{ kWh} \end{array}$$

## How about some energy saving tips that I can use right now!

Here are some low and no-cost ways to start saving electricity right now.

### Heating and Cooling

- **Keep your heating and cooling equipment in good repair.** Change or clean filters regularly. Anything that blocks airflow is making your equipment work harder and costing you more.
- **Check for drafts and leaks** that will let your winter heat out and invite muggy summer air in. Caulking and weather-stripping are simple and inexpensive.

- **Install a programmable thermostat** and set it to reduce the heat when you're not home and when you're sleeping.

### Appliances

- **Economize on your dishwasher.** Always run full loads, set your dishwasher to the economy cycle and use the air-dry setting.
- **Make sure your refrigerator and freezer doors are sealing tightly** by testing how firmly they close on and hold on to a piece of paper, such as a five-dollar bill. If it slips out easily, the rubber seals should be replaced.
- **Don't keep an old, extra refrigerator running** just for occasional use. It could cost you \$150 or more per year in electricity.
- **Plan energy-efficient meals.** Smaller appliances, such as toaster ovens or microwaves, use less energy than stoves. When using an oven, try to plan a meal that will allow you to use it for more than one dish.

### Electronics

- **Shut your computer down when it's not in use.** Powering up and down does not use extra energy and actually reduces wear. And turn the monitor off instead of using a screen saver. Screen savers actually increase energy use by preventing your monitor from sleeping.
- **Put the swimming pool pump on a timer** and run it just few hours a day. And use a solar blanket to keep the water warm overnight and to reduce your heater use.

### Hot Water

- **Fix leaking hot faucets to save on hot water heating.** A one drip per second leak will waste about 9,000 litres per year! That's enough water for about 95 five-minute showers (and that's using a less than efficient showerhead).
- **Wash in cold water.** With today's detergents, clothes come just as clean.
- **Wrap your electric hot water tank and pipes in a special tank blanket** to help it keep its heat. (But don't wrap a gas heater, as an inappropriate or incorrectly installed blanket is dangerous.)

### Lighting

- **Replace your most frequently used incandescent bulbs with compact fluorescent light bulbs (CFLs)** which will use 75 percent less power and last up to 10 times as long. There are many kinds of CFLs for indoor and outdoor use. Make sure you choose the right ones for you.
- **Consider automatic timers, motion sensors and dimmers,** where you can't use CFLs, to help maximize your control over lighting costs. Only timers with a mechanical switch can be used with CFLs.

## A FEW MORE Q & A's

### **Will I see a SMART METER charge on my bill?**

The cost of the SMART METER initiative will be recovered through the electricity rates paid by all customers in the same way that costs for existing meters and services are recovered today.

### **When will I begin paying time-of-use prices?**

A date has not yet been established for the implementation of time-of-use (TOU) rates for customers with Smart Meters installed. You will be notified in advance of when you can start to take advantage of time-of-use rates.

### **Will I see lower electricity bills?**

With time-of-use rates, you'll see the results of your conservation efforts – and you'll save money if you can shift your heaviest electricity use to off-peak hours. Equipment like air conditioners, electrical heating, space and water heating, as well as ovens, dryers and lighting, for example, can use a great deal of energy.

### **Will I receive a SMART METER if I am currently with, or moving to, a retailer? Will I pay time-of-use rates?**

Yes, you will receive a SMART METER, but your rates will be determined by the terms and conditions of the contract you choose to sign.



### **Is my usage information secure and will it remain confidential?**

Yes. Ontario's electricity distribution companies are required, by law, to ensure that the SMART METERS and communication networks that are put into place are equipped with security features to prevent unauthorized access. We must also comply with federal laws regarding the privacy, protection and disclosure of personal information. Any data that is sent to the central data repository will be provided in such a way as to prevent identification of an individual customer.

### **Do I need to activate my new SMART METER?**

No. Your new SMART METER simply replaces your existing meter. There is nothing more that you need to do.

### **How do I read this new SMART METER?**

The SMART METER displays the following pieces of information in sequence:

- 1) a segment test to ensure the system is functioning,
- 2) your accumulated kilowatt-hour (kWh) consumption in a five-digit format and
- 3) a network address number for Hydro Ottawa's use.

### **Will someone still come to read my meter?**

Yes, for now. When the SMART METER systems are fully operational we will be able to discontinue manual meter reading.

### **Can I see my Smart Meter data now?**

The Smart Meter is just one component of the whole system. The meter relies on a radio communication network and sophisticated data management systems to collect, process and present all of this information. When these systems are fully functional, you will be able to access your hourly consumption and time-of-use data via the Internet and telephone.



### **For More Information**

If you have questions about SMART METERS,  
please contact:

**Call:** 613-738-6400 and select the  
SMART METER option.

**Email:** [smartmeters@hydroottawa.com](mailto:smartmeters@hydroottawa.com)

**Or visit:** [www.hydroottawa.com](http://www.hydroottawa.com) or  
[www.smartmetersontario.ca](http://www.smartmetersontario.ca)

For tips and advice on how to use energy wisely,  
visit: [www.powerWISE.ca](http://www.powerWISE.ca).

