

From: Manuela Ris-Schofield [mschofield@oakvillehydro.com]  
Sent: November 30, 2006 11:44 AM  
To: BoardSec  
Cc: Chris Cincar; Alex Bystrin  
Subject: Request for Approval - RPP TOU Pricing Pilot Involving Condominiums

Attachments: Oakville Hydro\_Smart\_Meter\_and\_TOU Pricing Pilot.pdf

Ms. Walli:

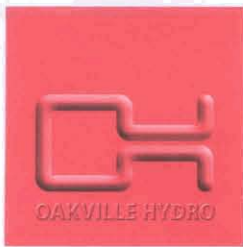
This was originally sent to Chris Cincar as it was uncertain if the condominium element of our pilot project was an existing pilot extension or a new RPP time-of-use pricing pilot project.

We have since been informed that it is a new pilot and that it should go through the Board Secretary.

We are therefore requesting for approval to proceed with a TOU pricing pilot involving condominiums as described in the attached.

We also request an expeditious review as we hope to implement the pilot in early December as explained in the attached.

Thank you  
Manuela Ris-Schofield  
Regulatory Affairs  
Oakville Hydro Electricity Distribution Inc.



October 24, 2006

Ontario Energy Board  
P.O. Box 2319  
2300 Yonge Street, 26<sup>th</sup> Floor  
Toronto, ON, M4P 1E4

To the attention of: Chris Cincar  
Subject: Oakville Hydro Smart Meter Pilot Project

Oakville Hydro Electricity Distribution Inc. (Oakville Hydro) is pleased to present the details of its current Smart Meter Pilot Project in the Town of Oakville.

The Oakville Hydro Smart Meter Pilot Project was undertaken in response to the Government of Ontario's Energy Plan. The plan calls for the installation of 800,000 smart meters across the province by 2007, and for all homes and small businesses in Ontario to be equipped with a smart meter by 2010.

The Smart Meter Pilot Project undertaken by Oakville Hydro provides an opportunity to implement and test smart meter technology prior to a wide scale installation of smart meters in the Oakville Hydro service area. It also provides Oakville Hydro with an early start to the implementation of the Government of Ontario's Energy Plan.

Oakville Hydro initiated the pilot project through the introduction of a policy making the installation of interval meters mandatory for all new residential construction in the Oakville Hydro service area. (see Appendix A for detailed timelines)

The primary focus of the pilot project is to provide technical and functional experience to Oakville Hydro staff. To that end, for the first 18 months, the pilot project was conducted in a manner such that the operation of the smart meters was transparent to the end use customer. The customer would not reap the benefits of this pilot project until the spring/summer of 2006. Instead, this period was spent on testing the technology, communications and remote reading functionalities. Of all smart meter implementation components, the critical technological problem is communication. Each meter must be able to reliably and securely communicate the information collected to a central location. Considering the varying environments and locations meters find themselves, this problem was found to be daunting.

After this initial 18 month period of testing, and an overwhelming interest from Oakville Hydro customers, the scope of the project was expanded to

Oakville Hydro  
Electricity Distribution Inc.  
P. O. Box 1900  
861 Redwood Square  
Oakville ON L6J 5E3  
Telephone: 905-825-9400  
Fax: 905-825-5831  
email: hydro@oakvillehydro.com  
www.oakvillehydro.com



include the billing of Time of Use (TOU) prices. This expansion was originally discussed in December of 2005. Although a separate software module that accommodated TOU billing was available for purchase from software supplier (Harris), Oakville Hydro opted to wait for the following software upgrade which included functionality for TOU billing. The software upgrade was carried out May 20-21-22 and TOU billing capabilities were acquired, though additional effort was required to resolve some of the billing issues that were identified through the pilot project. The initial expansion to billing of TOU prices entailed selecting 100 customers equipped with smart meters to participate, and billing them on Time of Use (TOU) prices. Currently Oakville Hydro is in the process of further expanding the pilot project to include three multi-residence condominiums that have recently been converted from bulk metered multi-residential to individual smart meters for each unit. These customers will also be billed using TOU pricing. Any participant of the pilot project can opt out of the pilot project at anytime by contacting Oakville Hydro. To date, the number of participant in the pilot project is 370. By December 1, 2006, all 370 participants will be billed on the TOU prices. Oakville Hydro currently has approximately 3,000 meters installed and operational in its territory. New meters are being installed by the builders at the rate of approximately 100 units per month. Eighteen months of thorough testing allowed us to identify and resolve all of the known issues associated with the conversion to interval-based meter billing. In an attempt to meet with the Ministry's directives of having 800,000 meters install in Ontario by the end of 2007, we are planning to progressively continue to convert customers, with existing installed smart meters, from standard RPP Rates to TOU rates.

At the present, Oakville Hydro has no set plans to convert any of its conventional meters to smart meters.

Also included in the project scope is the communication of information gathered to the participants. This communication involves ensuring that participants receive information regarding their consumption patterns and the cost that would have been applied if they were charged according to standard 2 tiered RPP. Participants currently receive this information via a web presentment tool that allows the participant to access their energy bill, time of use rates, energy usage breakdown, household energy usage, consumption comparison, billing history and energy saving tips. This secure online service provides valuable tools to help the participants manage their electricity costs and shift their consumption patterns so that the TOU pricing is most advantageous. The tools help participants to make informed decisions and to see the impact of common household appliance usage patterns. The first 100 participants were given fifty dollars for their participation in our pilot project and for their efforts to introduce the benefits of smart meters to Oakville.



For the pilot project, Oakville Hydro opted for a smart metering solution using a system developed by Quadlogic, a New-York based company that designs and manufactures two-way, real time, smart metering communication solutions for distributors. The Quadlogic system was selected over the other technologies that were considered, due to its use of an innovative central data collector for the metering system. The Quadlogic central data collector communicates with the smart meters over fiber optic cable or existing electrical wires that serve the customers on the utility grid. The Quadlogic system also uses a multi-tenant digital electric meter that can meter up to 12 residences and offers Interval Data and Time of Use capabilities. It also offers the capability to collect interval consumption data from water and gas meters. Other benefits of the Quadlogic system include a small footprint, tamper resistance flexible data programming, excellent accuracy and data integrity, and easily accessible data. Also, the central data collector can accommodate up to 200 multi-tenant digital electric meters.

Additionally, to further our analysis of available technologies, Oakville Hydro is also trying the technology developed by Triacta Inc., a Canadian based company. These meters offer similar functionality and also reside at the distribution transformer.

The benefits Oakville Hydro expects to realize from the Smart Meter Pilot Project also include improved service through remote detection of individual customer voltage levels and outages. Oakville Hydro will also be able to gather customer consumption data remotely, thereby helping to ensure the accuracy and timing of meter reads as well as the collection of critical load research information. Critical load research information also enables LDCs to manage assets and size equipment to assure reliable service to end-use customers. The pilot project also allows Oakville Hydro to demonstrate that giving customers better tools and greater control over their electricity consumption can not only help to reduce individual bills, but ultimately can have a dampening effect on electricity prices during peak demand periods if the technology is implemented widely.

The Oakville Hydro Smart Meter Pilot Project will be independently evaluated and the findings will be shared with our regulator for use in future decision-making electric pricing, demand response and other issues. The results may help to determine what the electric utility of the future will look like and the types of pricing and demand response services that utilities provide to customers.

Thus far, the pilot project has received positive feedback. Oakville Hydro feels that that customer input and comments are a critical component of the pilot project and plans to use this feedback to continuously improve the pilot project. Below are examples of the type of comments we have received.



*"To whom it may concern,*

*We appreciate the opportunity to be test subjects for the Smart Meter program.*

*When you think of the amount of energy consumed by a typical household in the course of one day, week, month and year the numbers are quite astounding. The Smart Meter is a brilliant piece of technology that allows you to track, down to the second, the total consumption per household. It allows you to rate houses and place them in categories. As consumers we benefit from energy rates during off-hour periods. It also allows you the ability to highlight and penalize households that are energy "pigs." We try to run our appliances at off-hours whenever possible. This provides us with a level of savings we would not have been allotted in the past.*

*The Smart Meter also highlights the household's consumption in a clearer fashion than past bills. In the past we have received bills that charged our household on projected or historical consumptions. These were generally received during periods that people could not go house to house to read the meter. At those times we would call to question the accuracy of these bills. The provider was always assuring us that if we overpaid now that it would balance out later. This sounds logical, but the money is better spent in my own pocket than in pre-paying a constantly used utility. I appreciate your accuracy.*

*Lastly I appreciate the accessibility you have given home owners to view their own usage on line, and see first hand the level they consume. This is a great tool and can be turned into a household challenge that all occupants can participate and view on-line. Who knows, we may have just created the "Energy Game." You may want to market that concept.*

*Once again we appreciate the opportunity to be test subjects for the Smart Meter program.*

*Yours truly,*

-----

*Thank you for providing this useful tool. We have 5 teenagers and 4 pets and seek every opportunity to save natural resources as well as financial ones. We look forward to monitoring our hydro usage through the Smart Meter billing system over the coming year. We have now implemented a more efficient laundry schedule using only*

*cold water. Also the boys now put the dishwasher on before bedtime instead of after dinner. In addition we have installed timers on all lamps as well as nightlights in the washrooms to reduce the need for using the bright overhead lights.*

*Thanks again.*

We trust that the above information meets your expectations

Yours truly  
Oakville Hydro Electricity Distribution Inc.



Manuela Ris-Schofield  
Regulatory Affairs

CC: Alex Bystrin – President and CEO  
Lesley Gallinger – VP of Finance & Administration



## APPENDIX A

### TIMELINES OF SMART METER INITIATIVES

**1999/2000**, Oakville Hydro installs the 1st Quadlogic MC5 residential meters in multi residential condos.

**MAY 1, 2003** Oakville Hydro implements Board reviewed and accepted Conditions of Services. These conditions of service state the following

#### 3.3.7.2 New Residential Subdivisions or Multi-Unit Developments

Oakville Hydro installs interval meters for all new residential subdivisions or multi-unit building/developments. The meters are mounted at the distribution transformer and are read remotely.

**APRIL 15 2003**, Oakville Hydro installs the first Quadlogic for detached home at a test site on Waterstone Crescent. The metering system was proven at this site and "Metering at TX" was adopted as standard metering practice by Oakville Hydro.

**AUGUST 2003**, Oakville Hydro receives its 1st order of meters.

**MARCH 18, 2004**, Oakville Hydro powers its first detached home residential smart meter on Ridgeside lane.

**JULY 16, 2004** The Board receives the Directive from the Minister of Energy under Section 27.1 of the Act.

**JULY 19, 2004** The Board announces its plan for carrying out the Minister's Directive, and invites stakeholders to participate in a consultation process. Stakeholders' responses are due by August 3, 2004.

**SEPTEMBER 2004**, In an effort to get a jump-start the Minister's Directives and the OEB's plan, Oakville Hydro starts putting together a tentative plan for the wide-range implementation of smart meters in it's service area.

**SEPTEMBER 2004 to SPRING 2006**, Oakville Hydro conducts testing of the technology, communication and remote reading functionality.

**NOVEMBER 9, 2004** – The Ontario Energy Board submitted its draft implementation plan on smart meters to the Minister of Energy.

**JANUARY 26, 2005** - The Ontario Energy Board today submitted its proposed implementation plan on smart meters to the Minister of Energy. The plan outlines a basic smart meter system in Ontario to measure how much electricity a consumer uses each hour of the day.

**MARCH 11, 2005** – The Ontario Issues its "Regulated Price Plan Report" containing the price for the Regulated Price Plan that will go into effect on April 1, 2005. The Board also issues its RPP manual, and Ontario Wholesale Electricity Market Price Forecast, a revised SSS code and other material



- The March 11, 2005 version of the RPP Manual p.22 states that "Time of Use pricing will be optional (at the discretion of the distributor) until the Second term commencement date (mandatory TOU rates)"
- The March 11, New Electricity Price Plan Backgrounder. P.3 states that "Utilities will not be obligated to provide time of use pricing to consumers with smart meters until April 1, 2006, but may introduce it sooner if they choose."
- The March 11, RPP FAQ p.5. For consumers who already have a smart meter, it is up to your utility whether it will charge you smart meter prices in the first year of the new price plan. As of the spring of 2006, each utility will be required to charge smart meter prices to everyone that has a smart meter.

**SEPTEMBER 16, 2005** the OEB releases fact sheets reiterating the discretion of the distributor when it comes to charging TOU prices.

**DECEMBER, 2005** Oakville Hydro discusses the expansion of the pilot project to include the TOU billing.

**JANUARY 27, 2006** Oakville Hydro sends an e-mail to the market operations hotline requesting details on TOU billing (deadline of Apr or May and rules regarding web presentment)

**FEBRUARY 8, 2006** Oakville Hydro attends a discussion with "Harris" at Oshawa Hydro to discuss TOU billing and printing issues.

**FEBRUARY 15, 2006** Oakville Hydro approaches Harris and expresses interest in TOU billing (purchasing a separate module VS upgrade). Harris writes:

"The smart meter billing changes have been completed in v5.2.19 and they are currently being tested by two of our Ontario sites. We should be in a position to release a patch for these changes shortly. Oakville has an independent TEST environment, meaning we can upgrade your TEST database without impacting your day to day operations, can we look at getting your TEST upgrade into the schedule? We have an opening the week of Feb 27th, let me know if we can proceed."

**FEBRUARY 17, 2006** the OEB issues proposed amendments to the SSS code regarding TOU Rates. The purpose of the proposed amendments is to:

- Extend the period under which the application of time-of-use ("TOU") pricing is voluntary for electricity distributors under the RPP;
- Require distributors to include the terms "off-peak", "mid-peak" and "on-peak" on the electricity bills of RPP consumers paying TOU prices;
- Amend the definition of "eligible time-of-use meter" to clarify that it includes an interval meter; and broaden the scope of situations in which distributors must apply the "final RPP
- Variance settlement amount".

The proposed amendment states the following; "Therefore, the Board believes that it would be prudent to extend the period of voluntary TOU pricing beyond May 1, 2006 to avoid distributors incurring potentially unnecessary costs. The Board proposes to establish a new date for mandatory implementation of TOU pricing after Bill 21 has been



enacted and there is greater certainty regarding the respective roles of the SME and electricity distributors in relation to the billing of RPP consumers with smart meters.”

Mandatory Date for Time-of-Use Pricing Deferring the date for mandatory TOU pricing until there is greater certainty regarding the respective roles of distributors and the SME in relation to billing of RPP consumers with smart meters will avoid distributors incurring unnecessary billing system costs that could ultimately become stranded. The Board does not anticipate that distributors will incur any costs as a result of this proposed amendment. Because distributors may still provide TOU pricing on a voluntary basis, consumers that currently receive TOU pricing may continue to do so. In addition, because the installation of smart meters is not yet widespread, the Board expects that the number of consumers with recently-installed smart meters that may be affected by the deferral of mandatory TOU pricing will be relatively small.

**MAY 20-22, 2006**, Oakville Hydro implements the billing system upgrade and acquires TOU billing capabilities.

**APRIL 12, 2006** the OEB issues the New Regulated Price Plan Report (May 06- April 07) p.16 “The average RPP price for consumers with eligible time-of-use meters is the same as that for conventional meters, the RPA.13 For those consumers whose distributors have chosen to make time-of-use (TOU) prices available, three separate prices will apply...”

**JUNE 2006**, Oakville Hydro selects 100 customers and sends letter and informational pamphlet (see APPENDIX B)

**JUNE – OCTOBER 13 2006**, Oakville Hydro works on unanticipated issues with the bill print setups as well as the web presentation tool.

**JULY 31, 2006** the OEB releases a Notice of Code Amendment to the SSS Code. “The proposed amendment would allow electricity distributors to implement new pilot projects relating to eligible TOU meters and to charge RPP TOU prices or any other TOU commodity price approved by the Board for the purpose of the pilot project. These new pilot projects will require prior Board approval before they can be implemented. The Board will review the distributor’s proposal for a pilot project and determine whether such a pilot project would be in the public interest. “

Section 3.9.1 states;

“Where a distributor has either implemented a pilot project relating to eligible time-of-use meters prior to the First Term commencement date (April 1, 2005) or implements a Board-approved pilot project relating to eligible time-of-use meters, the distributor may:

(a) continue to implement or implement the pilot project without making or giving notice of the election referred to in section 3.5.1;

(b) in relation to a pilot project relating to eligible time-of-use meters implemented prior to the First Term commencement date (April 1, 2005), charge an RPP consumer that has an eligible time-of-use meter and that is participating in the pilot project the commodity price for electricity referred to in either section 3.3 or 3.4; and



(c) in relation to a Board-approved pilot project relating to eligible time-of-use meters implemented after the First Term commencement date (April 1, 2005), charge an RPP consumer that has an eligible time-of-use meter and that is participating in the pilot project the commodity price for electricity referred to in either section 3.3 or 3.4 or any other TOU commodity price that the Board approves as part of the pilot project.

If the distributor is implementing a pilot project relating to eligible time-of-use meters after the First Term commencement date (April 1, 2005), Board approval for the pilot project must be obtained prior to the implementation of the pilot project.

**OCTOBER 11, 2006** p.16 "The OEB issues the New Regulated Price Plan Report (May 06-April 07) p.16 "The average RPP price for consumers with eligible time-of-use meters is the same as that for conventional meters, the RPA.13 For those consumers whose distributors have chosen to make time-of-use (TOU) prices available, three separate prices will apply...."

**OCTOBER 13, 2006** Oakville Hydro prints its first batch of TOU bills for the Pilot group.

**TODATE:** Under "Factsheet: Time of Use Pricing for Smart Meters" it states the following;

***"While any electric utility can currently choose to implement Time-of-Use (TOU) prices, Milton Hydro is the only utility in Ontario that now charges TOU prices for all its residential and small business consumers with smart meters. Other utilities such as Newmarket Hydro and Chatham-Kent Hydro are in the process of implementing these prices. Most utilities are waiting for details (expected in 2007) related to the responsibilities of the new Smart Meter Entity which will collect and manage the TOU pricing information and data across the province relating to electricity consumption."***



## APPENDIX B

### SAMPLE LETTER SENT TO FIRST 100 PILOT CUSTOMERS

#### **The conversion to Smart Meter billing has begun... and we're giving you \$50 to let us know what you think**

Dear John Sample,

From gasoline that powers our cars to electricity that keeps our house lights on, it's clear that we are in a new era of higher energy prices. But one thing we can do to save money, our resources and the environment is to manage our energy consumption.

That's why the Government of Ontario has mandated the installation of "smart meters" in all homes by 2010. As you are one of our first customers to have a smart meter installed in your home, you are one of the first to be introduced to our new billing and customer care system.

#### **To show you our appreciation for helping us introduce smart meters in Oakville, you'll be receiving a \$50 credit on your next bill!**

Unlike a traditional meter that can only tell you how much electricity you've used over a one or two-month period, a smart meter records "time of use" which is how much energy is used and when it was used on a daily and hourly basis. This will give you more control over your electricity spending by switching the time you do certain activities away from peak to off-peak hours so you can take advantage of lower rates for electricity during different times of the day.

For example, one way you can save energy and money is by setting the timer on your dishwasher to run overnight rather than during the day. Another is to do the laundry on the weekend and wash in cold water.

#### **Once you've had the opportunity to experience the smart meter system, there are three ways you can give us your feedback:**

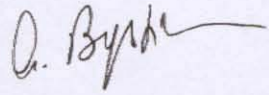
**email [smartmeter@oakvillehydro.com](mailto:smartmeter@oakvillehydro.com), call (905) 825- 4465 or write to  
us at P.O. Box 1900, 861 Redwood Square, Oakville, ON L6J 5E3**

With the smart meter billing system you'll also have online access to a wealth of new and valuable information. You'll be able to view how much energy you are using each day and the different rates you are being charged by the time of day. In addition, you can look up your past bills, compare your energy usage with other homes in your area and get handy energy savings tips. For more details, please see the enclosed insert.

Thank you for being an Oakville Hydro customer. Once again, **to thank you for your participation and your feedback on our new smart meter system, we're giving you a \$50 credit** on your next bill. I encourage you to let us know what you think about the new system so

that we can make any necessary improvements to make it even better. If you have any questions, please call Stew Lawson at (905) 825-4465.

Sincerely,

A handwritten signature in black ink, appearing to read "A. Bystrin", with a long horizontal flourish extending to the right.

Alex Bystrin  
President and C.E.O.

**P.S. Sign up to access your account online at [www.oakvillehydro.com](http://www.oakvillehydro.com). You'll need a recent Oakville Hydro bill for reference.**



## The conversion to smart meter billing has begun

In an effort to help manage electricity usage and encourage energy conservation across the province, the Ontario government has committed to smart meter billing.

### What is a smart meter?

A smart meter records "time of use" which is how much energy is used and when it was used on a daily and hourly basis.

### Why do we need smart meters?

Oakville Hydro can't stock up on energy the way you can with laundry detergent on special at your local store. So we have to pay our suppliers more for electricity during high-demand or peak times, like weekday business hours. Smart meters encourage more usage during off-peak hours, when electricity costs much less, such as evenings, weekends and holidays.

### Advantages of smart meters

The detailed consumption information that smart meters gather gives you the ability to:

- Monitor your electricity usage
- Manage your costs on a daily basis
- Compare your usage with other homes
- Access a wealth of valuable information

If you have any questions about smart meters, please call Stew Lawson at (905) 825-4465.



## APPENDIX C

### Making the switch to smart meter billing

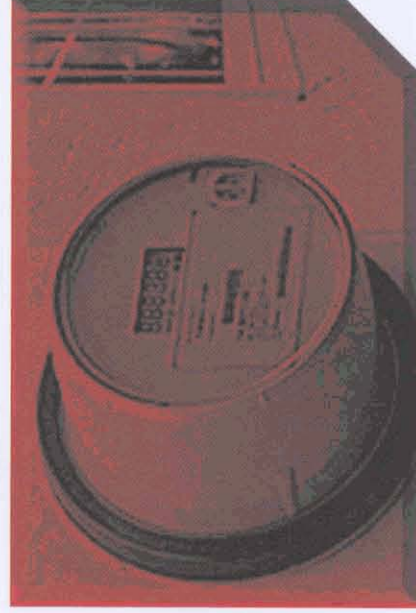
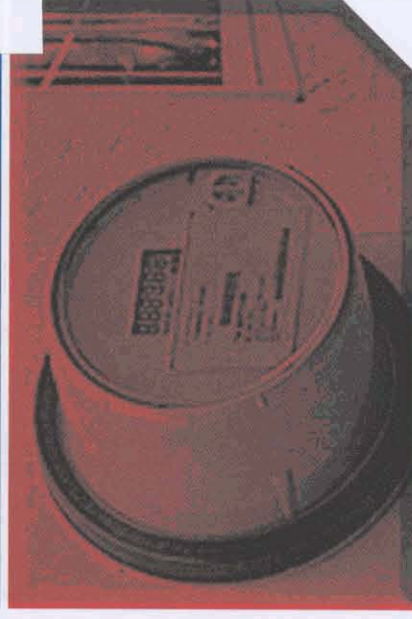
The introduction of smart meter billing will give you more control over how much you spend on electricity by switching the time you do certain activities – like laundry and dish washing – away from peak to off-peak hours. This way, you can take advantage of lower rates and conserve energy.

### Help us make the smart meter system even better

We'd like your feedback on the smart meter system to make it even better for the residents of Oakville. Once you've had the opportunity to experience it, there are three ways you can contact us:

Email [smartmeter@oakvillehydro.com](mailto:smartmeter@oakvillehydro.com)  
Call (905) 825-4465 or write to us at  
P.O. Box 1900, 861 Redwood Square,  
Oakville, ON L6J 5E3

Thank you in advance for your patience, understanding and participation.



See how you can take control of your electricity spending... inside





# Smart Meters, Smart Benefits

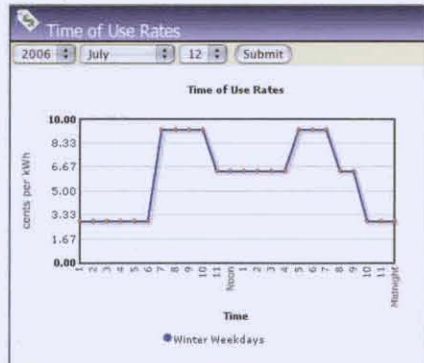
With the new smart meter billing system you'll now have online access to a wealth of valuable tools and information that can help you control your electricity usage.

## Your energy bill

| Bill Summary  |               |
|---|---------------|
| <b>Billing Period:</b> FEB 15, 2006 to APR 15, 2006           |               |
| Previous Balance  | \$0.00        |
| Total Payments and Adjustments                                | \$0.00        |
| <b>Beginning Balance</b>                                      | <b>\$0.00</b> |
| Total Electric Charges  | \$165.41      |
| <b>Total Amount Due</b> <input type="text" value="\$165.41"/> |               |
| <b>Due Date</b> <input type="text" value="MAY 21, 2006"/>     |               |

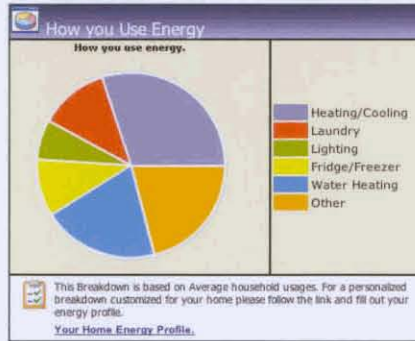
At a glance you can see your account balance, the amount of your current bill and when your next bill is due.

## Time of use rates



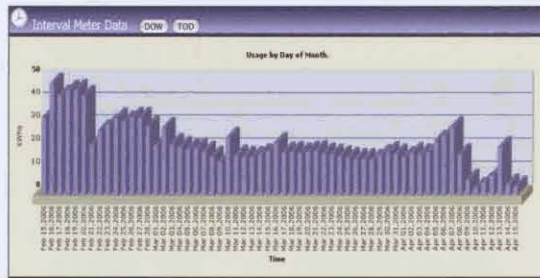
See exactly how much your electricity costs on an hourly and daily basis.

## Energy usage breakdown



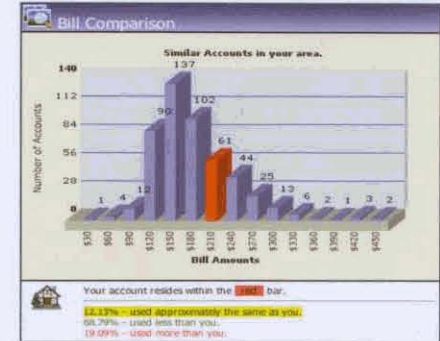
You can customize your own usage pattern by completing your household energy profile.

## Household energy usage



You can view your household energy usage by the day of week and time of day.

## Compare your consumption



See how your household energy consumption compares with other homes in your area.

## Your bill history



You can look up your past bills and compare your usage from month to month.

## Energy savings tips

**Ways to save**

**Heating & Cooling**

- Install a programmable thermostat with a built-in timer. You can set it to lower the heat by a few degrees at night and when you're away!

**Lighting**

- Use compact fluorescent light bulbs. They cost more than regular light bulbs (starting at \$5), but can use 75% less electricity and last years longer. One compact fluorescent bulb can save you three times its cost in electricity.
- For outside lighting, install a motion sensor that turns the lights on automatically when somebody walks by, then turns the lights off automatically after 1 to 5 minutes.

[Click here for more tips...](#)

Here you'll find many helpful tips and suggestions on how you can conserve energy and save money.

Experience the advantages of the smart meter system today  
 Sign up to access your account online at  
<https://customer.oakvillehydro.com/dsm>