

Power Consumption & Cost

S1-3-21 Develop a formula for domestic power consumption costs, and solve related problems. Include:
Cost = Power(Kw) x time (hr) x Price (\$)

Cost of Power...

In order to sell electrical POWER, we must have a way of calculating the COST of ELECTRICITY. We do this by charging a certain PRICE per UNIT of ELECTRICAL ENERGY.

We get our ELECTRICAL POWER from MANITOBA HYDRO. The power is primarily GENERATED in northern Manitoba using large HYDRO-ELECTRIC DAMS.

Manitoba Hydro charges us for only the power that we use...so using less means saving money.



Find ways to save energy.

 Manitoba
Hydro
POWER SMART

Cost of Power...

To charge us for power, MB Hydro must know how **MUCH** power we use. They measure this in **KILOWATTS (KW)**.

1 kW = 1000 Watts
(divide Watts by 1000)

They must know how much power we use during a certain amount of **TIME**. To do this, they measure how many **KILOWATT HOURS (kWh)** we use. This is measured by the **METER** that is on the **SIDE** of your house.



We can also calculate the amount of kilowatt hours we use with the following equation:

$$\text{kWh} = \text{kilowatts} \times \text{time (hours)}$$

Cost of Power...

To calculate cost, we use the following formula:

$$\text{Cost} = \text{kWh} \times \text{price per kWh}$$

or

$$\text{Cost} = \text{Power} \times \text{time} \times \text{Price}$$

In Manitoba, we have some of the cheapest power in North America. This is because we have **SO MUCH** power to sell.

Hydro sells us the power at a **LOW RATE**, then sells the rest to other **PROVINCES** and the **U.S.A.** at a **HIGHER RATE**.

Hydro bills usually come every one to two months, and vary in amount depending on how much power is consumed.



**Customer service / 24 hour Trouble calls
Demandes de renseignements /
24 h sur 24 Dépannage**

Winnipeg 480-5900

Outside Winnipeg /
Extérieur de Winnipeg 1-888-MBHYDRO
(1-888-624-9376)

Deaf access line 925-0767
Ligne pour malentendants

E-Mail address customerservice@hydro.mb.ca
Adresse électronique

Visit our website at
www.hydro.mb.ca

Visitez notre site Web
www.hydro.mb.ca/francais

Customer name BRIAN HAYWARD
Nom de l'abonné

Account number
N° de compte

Service location
Adresse de service WINNIPEG MB

Date issued Jan 28 JAN 2010
Date d'émission

Amount due \$ 155.00
Montant à payer

Due date Feb 16 FÉV 2010
Date d'échéance

Cycle number 16
N° de cycle

Account summary / Sommaire du compte

Previous charges and credits / Frais et crédits antérieurs

Previous balance / Solde antérieur	\$ 155.00
Payment / Paiement Jan 04 JAN	155.00 CR
Balance forward / Solde reporté	\$ 0.00

New charges / Nouveaux frais

Electricity / Électricité (GST/TPS \$ 2.57) EPP/R.P.É	\$ 51.00
Natural gas / Gaz naturel (GST/TPS 7.47) EPP/R.P.É	104.00

Amount due / Montant à payer \$ 155.00

Due date / Date d'échéance Feb 16 FÉV 2010



Customer name / Nom de l'abonné: BRIAN HAYWARD
 Account number / N° de compte: _____
 Service location / Adresse de service: WINNIPEG MB
 Date issued / Date d'émission: Jan 28 JAN 2010

Special messages / Messages particuliers

- ▶ Your meter reading will be estimated next month. If you prefer to provide a meter reading, see Instructions for reading your meter and phone in your reading during the 3 day period ending **Feb 23, 2010**.

Le relevé de votre compteur sera estimé le mois prochain. Si vous préférez soumettre un relevé, consultez les instructions dans la partie intitulée La lecture de votre compteur et transmettez votre relevé par téléphone dans la période de 3 jours qui se termine le **23 FÉV 2010**.

Electricity - Residential / Électricité - Résidentiel

Meter number / N° de compteur	Service / Pour la période		Days / Jours	Meter readings / Relevés du compteur		Multiplier / Multiplicateur	kW.h / kWh	Reading type / Type de relevé
	From / Du	To / Au		Previous / Précédent	Present / Nouveau			
0130	Dec 22 DÉC/09	Jan 26 JAN/10	35	6324	7036	1	712	Actual Réal

Basic Charge / Redevance de base		\$ 6.85
Energy Charge / Frais d'énergie	712.000 kW.h x \$0.06250	44.50
Subtotal / Total partiel		51.35
	2.50% City Tax / Taxe mun.	1.30
	7.00% Prov Tax / Taxe prov.	3.60
	5.00% GST / TPS	2.57
Electricity charges / Frais d'électricité		58.82

Examples...

$$\text{Cost} = \text{Power(kW)} \times \text{time(hr)} \times \text{Price(\$)}$$

Assume the price of electricity is 6¢ per kWh

1. Calculate the cost of leaving a 100W light on for 2 hours.

Examples...

$$\text{Cost} = \text{Power(kW)} \times \text{time(hr)} \times \text{Price(\$)}$$

Assume the price of electricity is 6¢ per kWh

2. A T.V. is rated at 200W. You watch T.V. for 4 hours a day for a month. How much did it cost?

Examples...

$$\text{Cost} = \text{Power(kW)} \times \text{time(hr)} \times \text{Price(\$)}$$

Assume the price of electricity is 6¢ per kWh

3. You use an appliance that draws 6A of current on an 110V system for 10 hours a day in February. How much does it cost?