
FROM:

<http://www.newfoundlandpower.com/service/commercial/youraccount/meter/ubdemand.htm>

Understanding Electrical Demand

Understanding electrical demand and how it affects your bill is a critical part of understanding your energy bill. This article explains the concept of electrical demand and how it is measured. It also provides some tips that may help you to effectively control your demand costs.

Why Newfoundland Power measures demand?

Instantaneously, any time of the day or night, electricity is there to power everything from your family's microwave to the high-speed presses that print your daily newspaper. Unfortunately, large amounts of electrical energy cannot be stored. It must be supplied to customers whenever their equipment calls for it and in whatever quantity they need.

As a Newfoundland Power customer, we need to plan for the maximum electrical demand that could be expected from your business during the year. In essence, we must reserve capacity for you on the Newfoundland Power system (generating plants and transmission and distribution lines) and we must ensure that we properly size our equipment so the required amount of electricity is there to serve your business.

By measuring demand, Newfoundland Power is better able to ensure that its equipment is adequately sized and customers are fairly charged for their capacity needs.

What is electrical demand?

Electrical demand is the amount of electricity you require at a given point in time. When you turn on an electric appliance, a "demand" for power is created. This instantaneous amount of electricity demand is measured in watts. A 100-watt light bulb, for example, demands 100 watts of electricity when it is turned on. Ten 100-watt light bulbs would demand 1,000 watts ($10 \times 100 = 1,000$) or 1 kilowatt (kW). Therefore, 1 kilowatt of demand is equal to 1,000 watts of electrical demand. Kilowatts (kW) measure the rate at which electricity is used.

If this same 1-kilowatt load is operated for one hour, 1 kilowatt-hour (kWh) of electricity is used ($1 \text{ kilowatt} \times 1 \text{ hour} = 1 \text{ kilowatt-hour}$). Kilowatt-hours (kWh) measures the quantity of electricity used over a period of time.

One way to remember the relationship between energy and demand is to use the analogy of the odometer and speedometer in a car. The measure of energy (kilowatt-hours) is analogous to the odometer, which indicates miles driven. The measure of demand (kilowatts) or the rate at which energy is used is analogous to the speedometer, which indicates miles per hour.

How is demand measured?

If your business has a meter that measures electrical demand, your bill will show both demand (kW) and energy (kWh) charges. If the meter on your business only measures energy (kWh), your bill will only indicate readings for energy (kWh).

Newfoundland Power's business customers that require a demand capacity of 10 kW or greater are metered with a combination kilowatt-hour and kilowatt demand meter.

Kilowatt demand is a measure of the average rate at which kilowatt-hours are used during a certain time interval. The time interval used by Newfoundland Power is 15 minutes. The demand meter indicates the maximum, 15-minute, kilowatt demand during the applicable billing period.

At the end of the billing period, Newfoundland Power records both the kilowatt-hour and the maximum kilowatt demand readings from the meter. The demand register is then reset so it can start to measure the maximum demand for the following month.

To understand how demand is measured, let's look at a simple example:

If a 10-kilowatt electrical load (like a commercial oven) is operated for 15 minutes, the demand register on the meter will record 10 kW. During this same 15 minutes, the kWh register on the meter will record the use of 2.5 kilowatt-hours ($10 \text{ kW} \times \frac{1}{4} \text{ hour} = 2.5 \text{ kWh}$). The demand register will retain this 10 kW demand until a higher demand occurs during any subsequent 15-minute interval during the billing month.

Tips for controlling electrical demand

If you have thermostatically controlled appliances such as heaters, ovens and grills, turn on one appliance every 15 to 20 minutes instead of all at once. Thermostatically controlled appliances require more electricity when heating up than during ongoing operation. Staggering start-up times will reduce demand and save you money!

If you have flexibility in your work schedule, run high-demand equipment after regular business hours when your overall electrical usage is lower.

Indoor lighting can account for a significant amount of energy. If you have incandescent lighting, consider replacing them with high-efficient fluorescent lights to lower energy usage and reduce demand.

For more information about electrical demand and how to control your demand costs, click [here](#) to request a booklet.