

What is Demand?

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Demand (measured in kilowatts – kW) is the rate at which electricity is used at any given time, as opposed to energy (measured in kilowatt-hours – kWh), which reflects the amount of electricity that is consumed over time. For example, ten 100-watt light bulbs consume electricity at the rate of 1000 watts, or one kilowatt. If these bulbs were left on for two hours, they will have used two kilowatt-hours of electricity. Each additional hour the bulbs are left on, the energy usage will increase by one kilowatt-hour, while the demand will always be one kilowatt. If the ten light bulbs were left on for two hours each, but only one at a time, after twenty hours, the energy consumed would be two kilowatt hours, as in the previous case. However, since only one light bulb was on at any given time, the demand would have been a tenth of a kilowatt.

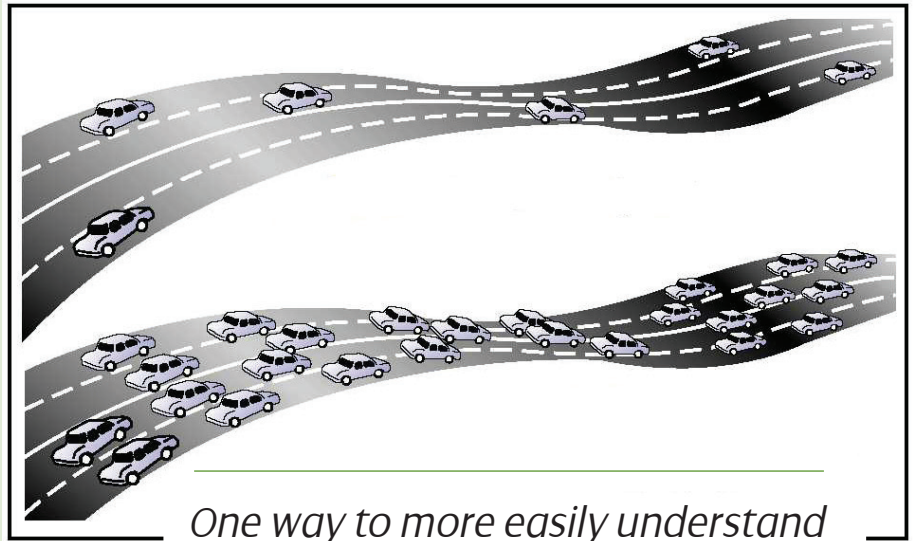
Why is there a demand charge?

While customer load levels vary over time, your utility must have the transmission and distribution capacity to meet the maximum demand of all customers at any given time. The purpose of the demand charge is to recover the cost of having the facilities available to provide the maximum

amount of electricity customers may require.

Demand charges are designed to recover each customer's share of the utility's costs of owning these facilities. Those customer with high demand, even if the demand is not constant, must contribute towards the costs of having the capacity that is needed when they need it.

Example: Consider a highway.



One way to more easily understand the reason for a demand charge is to compare it to a highway. The highway must be able to handle rush hour traffic, even though, at most times, a single lane would do.



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Both the rate and the quantity at which you consume electrical energy affects how much it costs the utility, and ultimately you, to deliver electricity.

It is clear that there is more to managing the use of electricity consumption than just using less of it. While most conservation programs will reduce your energy costs and may affect demand, a deliberate effort to control your demand-load management can have a significant impact on reducing your bill.

How is demand determined?

Meters can measure both demand (rate of use) and energy (amount of use). Demand meters monitor demand on a continuous basis and record the highest average demand that occurs in any predetermined time interval.

This demand level is used for calculating the monthly demand charge as it represents the highest rate of use for the month. The demand register is reset when the meter is read because the highest demand is re-established each month.

A common misconception concerning demand is that

there is an in-rush of current when electrical equipment or appliances are started. In fact, this is only the case with electrical motors.

Another frequent misunderstanding is that an in-rush is recorded as the peak demand. For example, if your meter only records the average demand for 15 minutes, and the in-rush for motors lasts only a few seconds, the in-rush caused by starting motors will have very little impact on peak demand. The in-rush load will be averaged into the 15-minute demand, but the demand level of the spike itself will not be recorded as the peak.

Energy Manager for Business

Our FREE Energy Manager for Business uses the hourly usage information collected by your smart meter to identify opportunities to manage your electricity use and save money on electricity costs. You can review your usage and demand data any time, compare your usage between time periods and understand how weather impacts your usage and demand with temperature and heating or cooling day information.

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