

Billing Demand Charge Q & A

Approximately 1,000 commercial/industrial customers of Snohomish County PUD are charged a demand charge. The demand charge is based on the maximum amount of electricity that is needed for these large customers.

How does electrical consumption (kWh) relate to demand (kW)?

Demand (kW) is the average kilowatt load over a specified interval of time. Because electricity cannot be stored, the cost of serving a customer who runs a 100-hp motor for 1 hour a day is much greater than the cost to serve a customer who operates a 10-hp motor 10 hours a day, even though both consume the same amount of energy (kWh). The 100-hp motor creates a larger demand (kW) and requires larger generating capacity, heavier cables to carry the electrical energy, larger transformers, switches, fuses, and protective apparatus.

What is a demand charge?

Demand charges are customer fees which the utility charges to large electricity users to recover the PUD costs of providing maximum electrical load. The PUD pays demand charges to its largest electricity supplier, the Bonneville Power Administration (BPA). The PUD also must build and maintain equipment and extra capacity to be able to satisfy the customers' maximum load requirement. The PUD's charge is for all kW over 100 kW per month for Schedule 20 customers. Please contact your Executive Account Manager for other rate schedules. You'll find all of our rates listed under "About Us" on our website at www.snopud.com.

Why not just raise the energy consumption (kWh) cost to cover demand?

It is not equitable to raise the energy charge for all users because small customers with constant loads would be paying for equipment used only by large customers with varying loads.

How does the PUD select which customers get a demand meter?

Although all new three-phase services greater than 400 amps receive demand meters, not all customers will pay demand charges. Customers only have to pay when the highest average 15-minute demand is greater than 100 kW. For existing customers, the PUD has developed a Commercial Accounts Verification (CAV) program to verify metering accuracy and to identify customers who have the capability to exceed 100 kW demand — which will result in some customers receiving demand meters who haven't had them previously.

Do customers with a demand meter see a difference in their bill?

They may. Their bill will include what their highest average 15-minute demand was for the billing cycle, and they will be charged for the kW load over 100 kW. If, however, the highest average 15-minute demand was under 100 kW, they will not be billed a demand charge.

How is a customer's monthly demand use determined?

The PUD demand meter registers in 15-minute blocks of time. The billed demand is based on the highest average (not instantaneous) demand for any 15-minute block of time in the billing cycle. The meter is reset each billing cycle once it has been read and recorded.

What type of meter is used to measure demand?

A demand meter can be thought of as a standard watt-hour meter which has the ability to measure average load over a specific interval of time. The new demand meters are microprocessor-based instead of electromechanical, and just as the cost of computers have dropped, so have the cost of demand meters while accuracy has increased.

What can I do to limit my demand charges?

Reducing demand charges or "demand leveling" can be as simple as rescheduling the time when equipment is started to avoid simultaneous use during any 15-minute cycle. More sophisticated energy management activities include demand controllers which typically shed discretionary loads (heating, air conditioning, ventilation fans, electric hot water tanks, refrigerators/freezers, and air compressors) for short periods of time. These loads have "flywheel" capacity so they can be interrupted for short periods without affecting people or business operations. One common problem that can occur is short-cycling, which can be destructive to loads like air conditioners and large motors. These types of loads should be assigned minimum on/off times or duty cycles to prevent problems.

Does the starting of large motors significantly impact demand charges?

Most electric motors usually start over a period of 3 to 10 seconds, using 5 to 7 times the power draw required for normal full load motor operation. As this large power draw or "spike" is averaged over the 15 minute (or 900 seconds) demand period used to assess demand charges, **the impact to demand charges is minimal**. Note that motors using adjustable speed drives typically use a ramping process so starting current never exceeds the maximum full load running current and cause no additional demand charges due to motor starting. A motor using a reduced current starting device (soft start) will have a reduced starting current compared to a motor without the device. The soft start motor starting current is typically greater than full load running current though the impact to demand charges is minimal.