

Reactive Demand

A phase-in of charges for reactive demand for certain Central Hudson customers will occur between May 1, 2010 and October 1, 2011.

What is the reactive demand provision?

This provision requires that a customer be billed for the highest 15-minute integrated kVA of lagging reactive demand established during the month less 1/3 of the highest 15-minute kW demand during that month. In simpler terms, a customer is billed for having a *power factor* that is less than 95% at the rate of \$0.83/RkVA.

What is power factor?

Power factor is the relationship of the energy being supplied to a piece of equipment (real power) compared to the energy being effectively used by the piece of equipment (apparent power).

An analogy with an inclined plane is useful to demonstrate the difference between total energy supplied (kVA) and real or useful energy (kW). In the analogy, a group of individuals (kVA) have to push a large ball from one side of an inclined plane to another. The active power (kW) needed to accomplish this is the same as if the plane were flat, but one or more individuals is required to keep the ball up on the path, preventing it from rolling down the plane. The result is a loss of capacity, since these individuals cannot be used for rolling, and additional friction losses, since these individuals need to touch the ball.

Power factor is calculated as kW / kVA. For example, if a small plant has a measured demand of 900 kW for a given month and the kVA delivered by the Company was 1,000 kVA, the customer's power factor would be $900/1000 = .9$ or 90%.

Why is Central Hudson billing for reactive demand?

Provisions to charge for reactive demand are being implemented in order to reduce lost energy on our transmission and distribution system. Customers with poor power factors take up capacity (room) on our lines. To compensate for this

loss of capacity, Central Hudson must install capacitors and/or increase the size of our facilities.

Who is subject to reactive demand charges?

Beginning May 1, 2010, Service Classification Nos. 3 & 13 customers will see an increased power factor requirement from 90% to 95% in order to avoid reactive demand charges.

Beginning August 1, 2010, Service Classification No. 2 (and Service Classification No. 14 customers whose parent service classification is 2) with demand greater than 1,000 kW in two of the preceding 12 months become subject to RkVA provisions.

Beginning October 1, 2010, Service Classification No. 10 customers with induction generators having a total nameplate rating greater than 1,000 kW become subject to RkVA provisions.

Beginning October 1, 2011, Service Classification No. 10 customers with induction generators having a total nameplate rating greater than 500 kW and Service Classification Nos. 2 and 14 customers with demand greater than 500 kW in two of the preceding 12 months become subject to RkVA provisions.

Can I view my reactive demand?

Yes. If you are subject to the reactive demand provisions, you are provided with access to Central Hudson's Energy Manager software. Your hourly kW and kVAR can be viewed through this software. If your phone line and meter are installed and you have not yet received your login information, please contact your Central Hudson representative or email: EnergyManager@cenhud.com.

How can I perform calculations related to reactive power?

1. Find your highest hourly kW for the month _____ (A)
2. Find your highest hourly kVAR for the month _____ (B)
3. Billed (excess) RkVA* = $B - (A/3)$
**multiply this by \$0.83/RkVA to estimate billed charges*
4. Total RkVA = $(A^2 + B^2)^{1/2} =$ _____ (C)
5. Power Factor = A / C

Can I avoid these charges?

You may be able to avoid or reduce the reactive power charges applicable to your account by installing on-site equipment, such as capacitors, to improve your power factor.