

How to cut your energy costs

Electric utility rates for industrial and commercial facilities are usually composed of at least two components.

- One is the “energy rate” or the kilowatt-hour charge, which is related to the fuel that is expended in producing and delivering that energy.
- A second is the “demand rate”, the kilowatt, or kVA demand charge. This usually related to the capital investment that must be made to build the generation, transmission, and distribution facilities necessary to provide the electrical energy to the consumer.

Since the capability of your utility’s power generating and distribution system is limited by the current it might carry, the utility’s ability to supply power is affected by the power factor of the load.

Since the reactive component of current is not registered on the kilowatt-hour meter, some utilities charge for low power factor by applying penalties or surcharges or by applying demand charges on kVA, or apparent power instead of kW, or active power demand. These charges differ from utility to utility and are often expensive.

Save Energy & Money: Improve Your Power Factor by installing a capacitor like The PowerwoRx™ Clean Power System Energy capacitors are now not only available for big business and industry but are now widely available for small businesses and residential homes.

Some are only designed to increase the power factor of your electricity but others are available that multi-task by not only increasing your power factor but they will protect your appliances and expensive electronics from spikes and surges in the lines while eliminating any noise as well. If your utility company charges a premium or a penalty if your power factor falls below a certain level you will save money. If your voltage levels are consistently higher because your power factor has increased, all of the motors that run your appliances and heating and cooling devices will perform better and last longer.

Utility bills must be analyzed carefully to understand the potential savings of improving power factor.

Are You Being Charged a Power Factor Penalty?

This penalty applies more to business than to home owners but is still worth checking past bills just to be sure.

Preferably all bills for the previous year should be collected in order to observe seasonal variations and/or long term trends in consumption.

Specifically look for the energy charge and the demand charge, if any. The energy charge is determined by multiplying the number of kilowatt-hours (kWh) of energy consumed in a month times the energy rate in \$/kWh.

Reduce Distribution Losses: [Add Capacitors](#)

Distribution losses in a facility can be reduced by the addition of capacitors and the resulting increase in power factor. These losses are estimated by summing estimates of the transformer losses and cable losses. This reduction is due to the decrease in current flowing through the distribution system and is sometimes referred to as “I²R” losses. Take twelve months of your energy bills and have them audited. You will be surprised how much you pay for power you do not use and how much the demand and power factor penalties add up. Any time you can save money it affects your bottom line.

[A-I Energy Doctor](#) is a go green company that helps small business and home owners save money while conserving energy. [Contact us](#) to learn how we can reduce your small business and residential energy costs.