

# Power Factor Correction

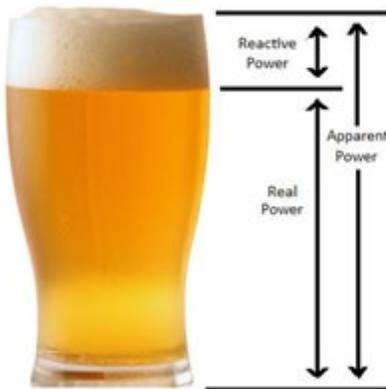


## Your Electricity Network Tariff has or is about to CHANGE.

Energex has issued advice that from 1st July, your Network tariff changed the Demand component from being charged on the basis of kW, to being charged on the basis of kVA. This means that if you have poor Power Factor, your electricity costs will increase. Poor Power Factor can be improved by using **Power Factor Correction** equipment to avoid these increases.

### What is power factor?

Power factor is the ratio of real power (kW) to apparent power (kVA). Put more simply, low power factor can be compared to buying a frothy beer. You pay for the whole glass, that is, the beer (real power) and the froth (apparent power), but you only drink the beer (real power).



But what you really want to pay for is just the beer (real power). The more froth you have, the less beer.

So as with low power factor, you are paying for more froth than you need to for your beer supplied. Energex must supply you Apparent Power, but you only use Real Power.

Power Factor ranges from a value of 0 to 1, and customers with low Power Factor draw more current from the power supply than customers with a high Power Factor. A Power Factor of 0.8 means you are 80% efficient at using the power, this means that Energex must have larger distribution capacity in their network to deliver a higher level of Apparent Power to meet your demand for Real Power. A change to kVa Demand Tariff is how Energex passes on the overheads to customers for the wasted capacity that they need to provide due to Poor Power Factor.

### What does Power Factor Correction do?

Causes of poor Power Factor are inductive loads such as transformers, AC motors and fluorescent lighting, and Power Factor Correction reduces the reactive power, or the beer froth. Reactive power is not wasted, it is essential for magnetizing the cores of electric motors, light ballasts, transformers etc, so power Factor Correction is applied using a capacitor bank, similar to a large battery, which stores reactive power. With Power Factor Correction, your glass is full of beer, and the froth comes off the top.

### Energex Incentives

In areas where Energex's network is constrained and requiring upgrades, they are trying to postpone or avoid these upgrades by offering incentives to customers to reduce demand on the network. One of the ways to reduce demand is to encourage customers to implement Power Factor Correction. Where implemented, Power Factor Correction will give paybacks predominantly well under 10 months.

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