



## The Benefits of Power Factor Correction

Many commercial & industrial electricity tariffs charge for kVA Site Capacity and Reactive Power. Power Factor Correction can reduce and eliminate some of these charges.

### Potential Energy Savings:

kVA Reduction: Improving the site Power Factor reduces the kVA demand. The kVA Supply Capacity can then be reduced with direct financial benefits. Alternatively, spare kVA capacity can be released for connection of additional plant without an increase in kVA Capacity charges.

Excess Reactive Power Charge: Electricity distribution businesses apply various 'Use of Systems Charges' to customers connected to their network. These charges are passed on via the energy supply companies. Within these charges there is generally an 'Excess Reactive Power Charge'. This charge is normally based on an average site Power Factor being less than 0.95 lag.

Improving the site Power Factor can reduce or eliminate these Reactive Power charges.

Transformer, cables losses & CCL (HV customers only): Improving the site Power Factor can provide some reduction in kWh usage based on reduced transformer & cable losses: This will also reflect in a reduction in charges under the Climate Change Levy.

### Technical Benefits:

Reduction of kVA Demand: Improved power factor generally means the transformer and the associated switchgear can operate at lower loads. This reduces electrical stress in the form of unwanted heat, thus prolonging the life of electrical equipment.

Site Load Increases: The local electricity network operators will generally charge for up-grading the supply network. An economical site power factor ensures these costs are minimised. More efficient utilisation of electrical distribution equipment can mean that additional equipment can be connected in the short or medium term and expensive supply upgrade costs can be deferred.

Reduction in Voltage Drop: PFC equipment can prevent excessive voltage drops on the electrical network that may result from motor start-up, welding equipment or operations of lifts and cranes. Excessive cable runs can also be problematic and correctly installed PFC equipment can improve the site Power Quality.

Harmonic Distortion Reduction: Some electrical equipment, such as variable speed drives and switch-mode power supplies, can generate excessive distortion on the electrical network. By using PFC equipment with anti-harmonic reactors, the levels of distortion can be effectively reduced again improving site Power Quality and prolonging equipment life.

Protect your investment with regular maintenance: PFC equipment is **NOT** maintenance free and should be tested and serviced at least once per annum.

Please contact VAR for your Power Factor Correction requirements.