



Power Factor Correction


What drives payback and why design matters



kVA vs. kW Explained

kVA: 
Total Energy Supplied

kW : 
Useful Work Done

Power Factor: 
How efficiently the supply is used

You get billed and pay for the total kVA supply, whether it produces useful kW work or not.



Why PFC Exists

Power Factor correction reduces **unnecessary kVA** demand and its costs. It **doesn't change production**, but improves how efficiently supplied electricity is being used and billed for.



What Determines Payback


Key Payback Factors:
PFC isn't one-size-fits-all. Payback depends on your:

- starting power factor
- target power
- load behaviour
- utility tariffs and demand charges
- quality of the system design.


Well-designed systems typically pay themselves back in **3 to 18 months**



What PFC Does & Doesn't Do

What it DOES 

- Reduce **kVA demand**
- Reduce **Reactive Power** consumption charges
- Reduce **Network Access** charges
- Reduce the size and cost of **solar** installations

What it DOESN'T 

- Reduce **kWh** usage
- Reduce **Diesel** consumption of gensets
- Dramatically reduce carbon footprint



Why Alpha Power Solutions

Our Approach:
We design PFC around measured load behaviour, not assumed values

Our Goal:
Financially Sound Solutions

We select technology to suit the application, with payback as the primary driver. This ensures our solutions are practical, reliable, and financially sound.