

# Commercial clients achieve a rapid return on investment and long-term savings with power factor correction.

Working with power factor correction specialists KVArcorrect, Total Utilities provides complete, custom, and ready-to-go power factor solutions, plus ongoing monitoring and maintenance. kVArcorrect offer modular systems which are custom designed to meet each customer's need, ensuring the best return and no wasted capacity.

These systems will correct our clients' power factor issues, which extends the lifespans of their equipment, and significantly reduces network charges.



LONG-TERM  
SAVINGS



PROLONGS  
EQUIPMENT



FUNDING  
ENERGY  
EFFICIENCY



FAST  
INVESTMENT  
RETURNS

# POWER FACTOR - How It Works

It's helpful to look at a water pipe as an analogy:

- 1 Energy charges (measured in kilowatt-hours - kWh)**  
is like paying for the volume of water that comes through the pipe.
- 2 Demand charges (measured in kilovolt amps - kVA)**  
is like paying for the width of the pipe the water travels down.
- 3 Power Factor (or reactive kVA)**  
measures how efficiently a piece of equipment draws power as it contributes to demand. Power factor correction can reduce the width of the water pipe - so reducing your demand charges (kVA) but doesn't reduce the amount of water (energy) you need to get the work done (kWh).

## How large clients get pinged on demand charges

Many network companies in New Zealand charge large users for peak kVA load and the connected reactive kVA, as this relates to the peak capacity needed to support supply to your business. If your business generates a lot of reactive power, you could get stung with higher demand charges than you need to and power factor penalties.

With power factor correction, you get the energy you need but in a more efficient way. If well-maintained, power factor correction units can last for ten years or even longer, therefore delivering potentially hundreds of thousands in cost savings over the unit's lifetime.

By installing fit-for-purpose power factor correction units, you can reduce the demand charge component of your electricity bill and eliminate power factor penalty charges.

## WHO WE HELP

From meat processing to concrete casting, timber companies to high schools, power factor correction is an excellent way to deliver sustainability and long-term cost savings within NZ industries.

## RESULTS

Fast investment returns, extending the lifespan of existing equipment, substantial cost savings and reduced peak demand and network charges - these are the reasons why investing in power factor correction units is a financially and environmentally sound decision.

# REAL WORLD EXAMPLES



## TEGEL FOODS

### HOW WE HELPED:

We repaired several ageing units to extend their lifespans and installed new capacitor-based systems with hybrid capacitor/electronic systems to address fast switching load conditions.

### CHALLENGES TO OVERCOME:

The site conditions and needed to ensure fit-for-purpose correction for a total of 1270kVAr.

### OVERALL PAYBACK PERIOD:

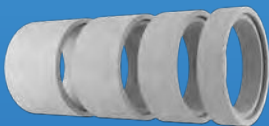
11 months

### NET LIFETIME SAVINGS:

\$571,629\*

### REDUCED PEAK DEMAND AND NETWORK CHARGES BY:

12% per year



## NORTH WAIKATO CONCRETE PIPE CASTING FACTORY

### HOW WE HELPED:

We designed and installed a modular 424kVAr power factor system.

### CHALLENGES TO OVERCOME:

The system had to provide flexibility for future plant expansion and fast switching loads.

### OVERALL PAYBACK PERIOD:

14 months

### NET LIFETIME SAVINGS:

\$617,814\*

### REDUCED PEAK DEMAND AND NETWORK CHARGES BY:

35% per year.



## NORTH WAIKATO TIMBER DRYING AND MACHINING CO

### HOW WE HELPED:

We analysed a utility meter to determine that they needed a 200kVAr correction unit. After a site inspection, we discovered they had two existing units. One had stopped working (presumably due to overheating) and, the other unit was disconnected.

### CHALLENGES TO OVERCOME:

The location of the existing units was not ideal because of the limited space and airflow.

### OVERALL PAYBACK PERIOD:

20 Months

### NET LIFETIME SAVINGS:

\$110,806\*

### REDUCED PEAK DEMAND AND NETWORK CHARGES BY:

17% per year



## AUCKLAND HIGH SCHOOL - HISTORIC BUILDING

### HOW WE HELPED:

The heating and ventilation units were causing a small reactive load during the summer months. kVAr Correct designed and built a unique cabinet to fit within the confines of the switchboard room which was in a historic building with limited space.

### CHALLENGES TO OVERCOME:

The physical challenges of the confined space.

### OVERALL PAYBACK PERIOD:

Just over two years.

### NET LIFETIME SAVINGS:

\$21,900\*

### REDUCED PEAK DEMAND AND NETWORK CHARGES BY:

18% per year

## Industry's greener future



Power factor correction and sustainability measures go hand in hand. The savings our clients make can be redirected into energy efficient equipment upgrades such as LED lighting, compressors and energy monitoring systems - good for their bottom line and our planet.

TOTAL UTILITIES is a Toitū carbonzero certified organisation in line with ISO 14064!

Follow our journey here [www.totalutilities.co.nz](http://www.totalutilities.co.nz)



EXPLORATION IS WIRED INTO OUR BRAINS. IF WE CAN SEE THE HORIZON, WE WANT TO KNOW WHAT'S BEYOND.

\*total annual savings x 10 years minus total project costs