



QUALITY | INTEGRITY | INNOVATION

# Ark Voltage Optimisation Energy Saving Unit

# How can this help you?



# The benefits in action



## An example of what clients have achieved:

- 🌍 “AMP Capital increased the NABERS rating of commercial office buildings by installing The Ark across its HVAC equipment.”
- 🌍 “Adelaide City Council’s Ark project delivered kWh savings equal to 4 Solar Cities Programs, at less than 1/10<sup>th</sup> of the cost.”
- 🌍 “Westfield Shopping Centres has achieved energy savings from The Ark of 25% across mall general light and power loads.”
- 🌍 “Pepsico have increased the longevity of warehouse lighting, as a secondary benefit to financial savings.”
- 🌍 “Intercontinental Sanctuary Cove Resort have reduced their whole site energy consumption by 9.3% with a 1.99 year payback.”

# The industry leader



## A few things to know about Energywise;

### 1. **Pioneered the Voltage Optimisation industry in Australia.**

The Ark voltage optimisation unit has been installed in Australia for 19 years. Energywise has specialised in this product for 12 years, with expertise and experience from hundreds of installations.

### 2. **We help companies save a lot of money.**

Our simple, maintenance free product has saved Australian businesses millions of dollars in their electricity costs. Numerous installations have received the support of government funding programs, with all performance requirements met.

### 3. **Our equipment is designed to be Robust and Reliable.**

There are minimal moving parts and a projected lifespan of 30-50 years. 'The Ark' has a 10-year warranty.

### 4. **The Ark is Australian Made.**

Highest quality Australian engineering to ISO9002. Customised to site requirements.



## Why are the majority of premises supplied with excess voltage?

- The Australian nominal voltage range is 230V +10%, -6% (216V - 253V) (AS60038)
- Network operators set voltages toward the higher end of this statutory band. The average voltage throughout the electricity grid is over 240V. Why?...
- There is a drop in voltage as electricity is distributed. Because all premises must receive at least 216V, the maximum voltage (253V) is supplied from the points of distribution. Due to the need to ensure that all premises receive the minimum voltage level, the majority of premises receive excess.
- **Resulting situation** – excess voltage to approx. 90% of premises.
- **Solution** – site specific voltage optimisation.

## What is the problem with over-voltage?

- The optimum voltage range for the majority of end-use appliances and equipment is 220 to 230V.
- Excessive voltage creates heat and vibration causing losses in the system. Most 3-phase motors use more electricity with no increase in output.
- Excessive heat and vibration leads to higher maintenance costs and shorter life-spans.
- The UK Institute of Engineers and Technicians has stated that a 1% over-supply of voltage will produce on average a 2% increase in electricity consumption. *Electricians Guide BS7671 (17th edition)*
- Furthermore “A 230V rated conventional lamp used at 240V will achieve only 55% of its rated life”.
- It is therefore very important that equipment and appliances receive their optimum voltage level.

# 'The Ark' Energy Saving Unit

## Important things to know about 'The Ark' Energy Saving Unit;

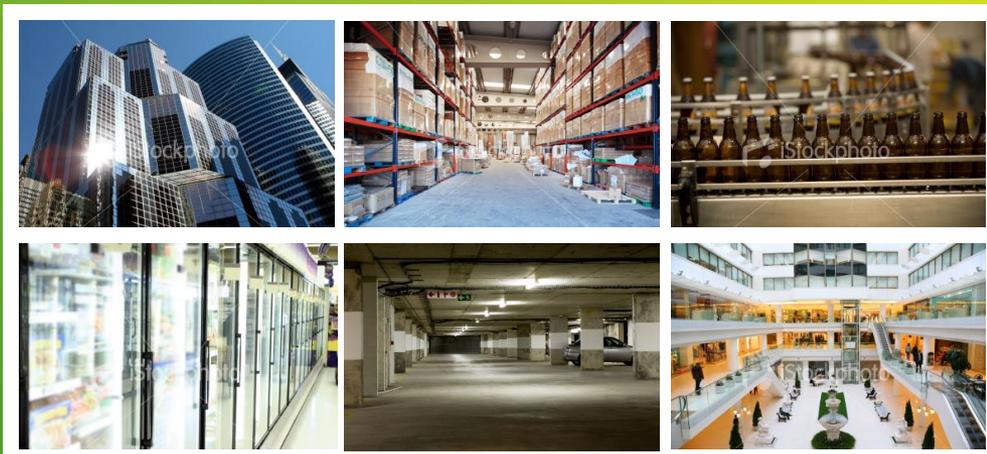
- Primary function; a voltage optimisation device.
- Secondary functions; improves voltage phase balancing, harmonics filtering and power factor.
- Designed specifically to save energy.
- Refines and improves raw power supply quality, on a site-specific basis.
- Extremely high operating efficiency, with negligible internal losses.
- Applied to all or part of a facility (main switchboard or distribution boards).



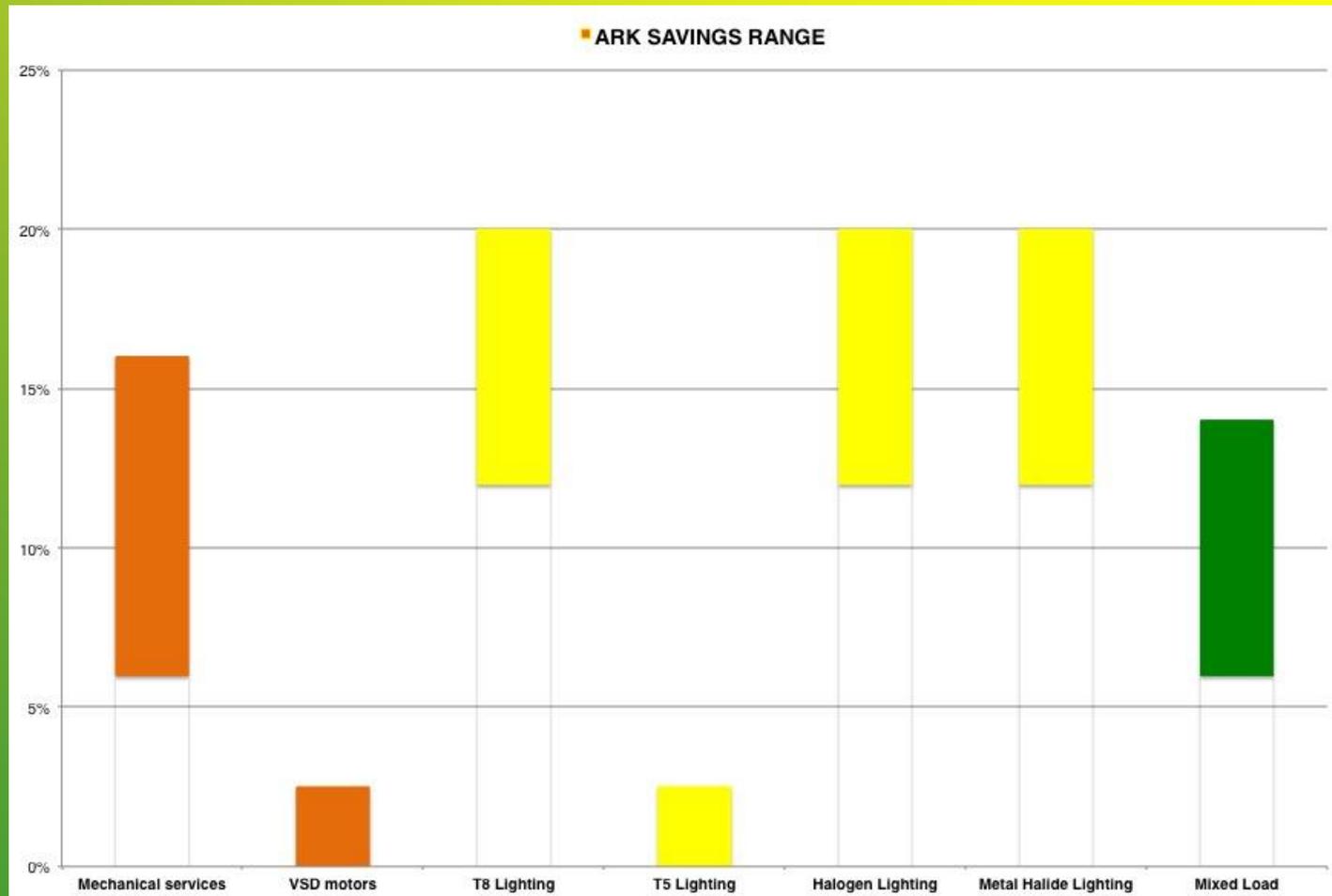
# Applications

## Where can The Ark be used?

- Creates savings across most types of electricity uses; including lighting, air-conditioning (HVAC), refrigeration, computers, general plant and machinery.
- Ability to create savings across mixed loads enables savings in nearly all building types and industries.
- Is most effective on inductive motor loads and conventional lighting.
- Negligible savings on motors with VSD's/ inverters and lighting with electronic controls.
- Is a primary 'top-end' energy efficiency device.



What level of savings does the Ark provide?



# Ark Features

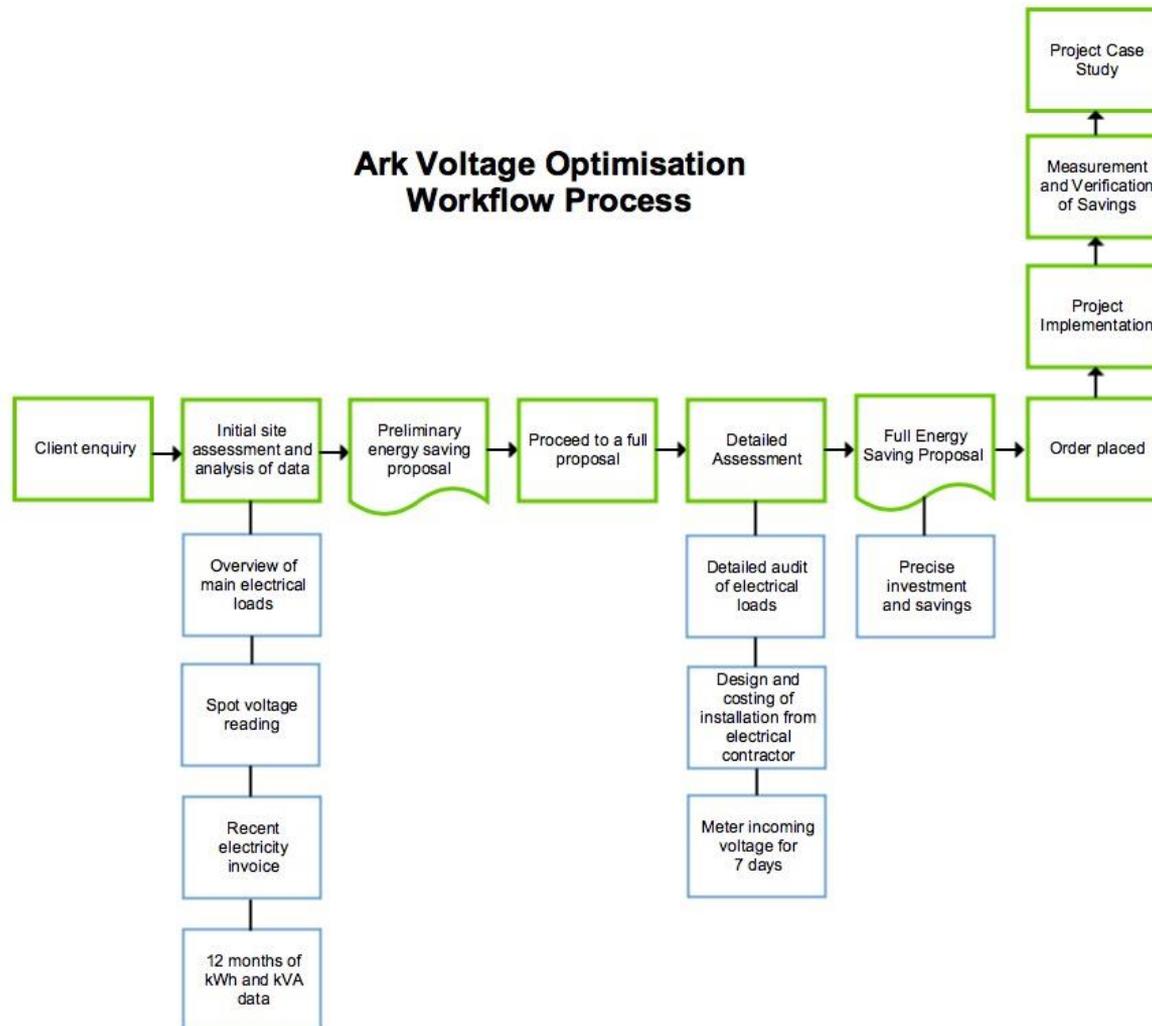
## Primary features of The Ark include;

- 🌐 Eliminates electricity wastage
- 🌐 A 'Set and Forget' installation
- 🌐 No maintenance or other ongoing expenses
- 🌐 10-year warranty on the core component
- 🌐 Effective working life of 30-50 years
- 🌐 Available in 20 sizes for differing needs, ranging from 22.5kVA to 2000kVA
- 🌐 Extensively proven in the Australian market, under Australian conditions.

The Ark's main operational and financial benefits are;

- 🌍 Improves business profitability and productivity
- 🌍 Reduces electricity costs by up to 20%
- 🌍 Reduces carbon emissions by up to 20% and helps achieve environmental objectives
- 🌍 Extends the lifespans and reduces repairs and maintenance costs on motors, lighting and equipment
- 🌍 Helps protect electrical equipment from short-term power surges
- 🌍 Typical payback between 2-4 years, from the electricity savings

# A simple, managed process





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