49% ROI from an energy saving project at R.M.Williams manufacturing site

ENERGY SAVING CASE STUDY

R.M.WILLIAMS

KEY OUTCOMES

Return on Investment
49%

Financial Payback Period
2.04 years

Environmental Savings
144 tons per annum

Energy Savings
13%

Yearly Electricity Savings
182,900 kWh per annum

R.M.Williams

R.M.Williams, one of the most iconic footwear, apparel and accessories companies in Australia, was founded by Reginald Murray Williams AO, CMG, in South Australia in 1932. It has grown from a one man operation to a large international retailer with a prestigious brand, exporting to 15 countries . R.M.Williams' products are renowned for their exceptional quality. This is under pinned by the adoption of best practice manufacturing processes throughout the South Australian manufacturing site.

The Energy Saving Project

The R.M.Williams site in Salisbury, S.A. is the primary manufacturing facility for the company's worldwide retail operations. The site has high energy usage, and electricity costs have increased considerably in the past few years. As a result, saving energy has become a priority.

Aims of the Project

a) To reduce electricity consumption and generate considerable financial savings

b) To increase electrical capacity at the site to enable new manufacturing equipment to be added. The alternative option was to spend $300,000 upgrading electrical infrastructure, with no energy savings achieved.

Site Assessment

Energywise were engaged to assess the quality of electricity delivered to the site and the effect this was having on energy consumption and operational performance of equipment. The site has significant manufacturing equipment with dozens of 3-phase and single phase motors, lighting throughout the warehouse and offices, HVAC and a range of general electrical loads.

Initial Findings

The analysis demonstrated that the voltage at the site was higher than the level that the majority of equipment was designed to operate most efficiently at, and thus the site equipment was consuming unnecessary excess power. In addition, the Power Factor was below optimal levels.

Recommendations

Energywise recommended installing an Ark Energy Saving unit, which is a high quality voltage optimisation device. This unit improves the quality of electricity coming into the building, more closely aligning it to the level required for the efficient operation of site equipment. Energywise also recommended a Power Factor Correction (PFC) unit to reduce the reactive power (unused energy that flows back and forth in the electrical system).

Equipment Installed

The Ark and PFC units were connected to the incoming electricity feed supplying power to the entire site. Thorough planning was conducted with all stakeholders involved in the power shut-down.

"As an outcome of a comprehensive energy audit of our manufacturing site, Energywise were recommended and subsequently implemented changes, which exceed our expectations.

Energywise were very responsive and professional throughout the project"

Graham Potter, Manager, Engineering Services, R.M.Williams

What is the Ark Energy Saving Unit?

The Ark Energy Saving Unit is a power conditioning device that improves the quality of electricity delivered throughout a site. Most sites receive voltage at levels higher than their equipment is designed to operate at.

The Ark optimises the voltage to within the most efficient operating range for equipment, and provides improvements in 3-phase voltage balancing, harmonics filtering, power factor and surge protection. This enables electrical equipment to operate more efficiently and to use less power. For more technical details, please visit www.energywise.net.au

13% energy savings delivered by Energywise to an iconic manufacturing business based in Australia

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Final Results

Detailed 3-phase data logging was conducted before the installation and then again after the installation, to measure the impact of the energy saving project on the quality of electricity and energy consumed at the site.

Site operations were monitored to ensure that like-for-like conditions were maintained between the pre-and post measurement periods.

Electricity was previously supplied to the site in the 235V to 245V range. Once the Ark unit was installed, this was brought into the 220V to 230V range, and whole site energy consumption was reduced by 13%.

The Energy Savings investment is projected to provide a 2.04 year payback, and a return on investment of 49%.

Two further methods were used to measure and verify the savings achieved:

(a) the Ark unit was supplied with an optional feature that enables it be switched between a bypass setting and an energy saving setting, enabling the immediate change in energy consumption to be measured (displayed in the chart below)

(b) site electricity bills have been monitored since the installation.

All 3 verification methods have confirmed the ongoing accuracy and reliability of the energy and financial savings.

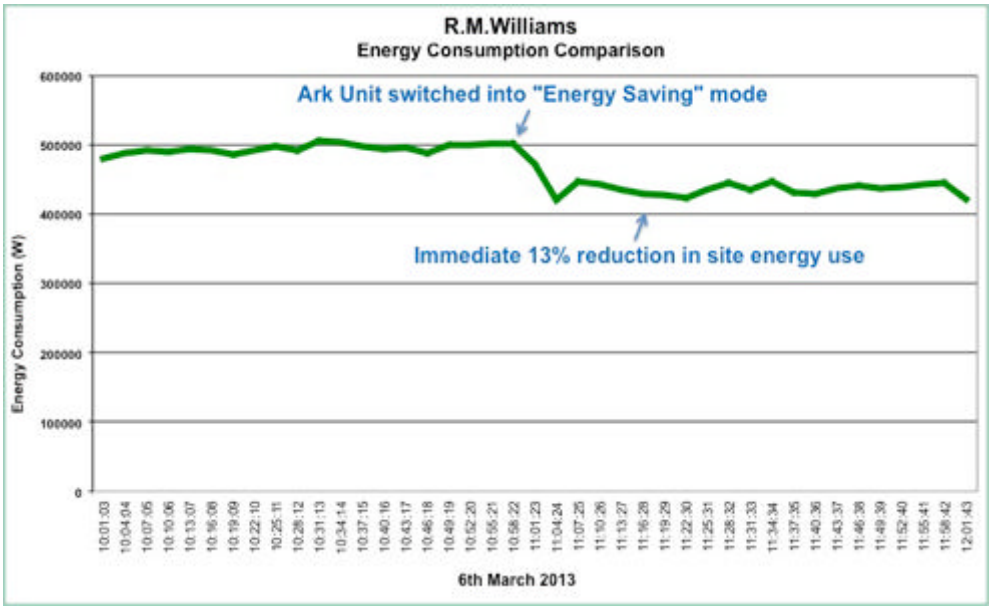
Outcome

With the energy saving project delivering 13% whole site energy consumption savings, and a Return on Investment of 49%, the aim of the project was successfully met and all targets were exceeded.

The equipment has a 10-year warranty period, and so will repay itself at least five times during this period.

Additional Benefits

- Increases the efficiency and life span of motors, lighting and other electrical equipment.
- Reduces maintenance costs for site equipment and appliances.
- Helps protect electrical equipment from short-term power surges
- The Ark has a 10-year core component warranty.



The chart displays the energy consumption during live testing of the performance of the Ark unit. The unit was switched between 'Energy Saving Mode' and 'Bypass' mode.

The Energy Saving unit was installed next to the site main switchboard.
Incoming electricity is routed through the unit, and is refined and improved before it enters the buildings.

Please contact Energywise on 1300 843 275 or info@energywise.net.au for a free energy saving assessment at your site