



Smart solutions reduces school power bill by 30%

Case Study



At a time when power costs in Australia are soaring, a Queensland high school has bucked the trend, reducing its electricity bill by almost 30 per cent and training a new generation of Energy Warriors in the process.

Beenleigh State High School in the City of Logan, south of Brisbane, was one of 35 Queensland state schools selected to participate in a trial conducted by the Queensland Department of Education and Training, in conjunction with ERM Power, who are experts in electricity generation, retailing and energy management solutions for businesses in Australia, as well as in select markets in the US.

The Queensland Department of Education, concerned by the rate at which electricity consumption was climbing in schools and the pressure this was putting on operating budgets, engaged ERM to see what could be done to address the problem.

Data-driven, evidence based decisions

The trial at Beenleigh State High began with comprehensive, state-of-the-art data analysis. ERM’s Energy Solutions team analysed data sets from over 400 schools, establishing benchmarks and models specifically for schools^.

An energy audit of the school was conducted involving desktop assessment, bill analysis, client information and onsite inspections. It established that Beenleigh State High had an above-average energy consumption per student.

This methodology can be applied to any organisation to provide product-agnostic solutions tailored to industry, size, geography and energy load profile.

School principal Matt O’Hanlon says the school knew they were consuming too much energy, having seen their electricity bills climbing, but they weren’t sure what to do to arrest the problem.

“What was really interesting was the ERM guys were able to show us just how we were charged for our electricity, and that was a real eye opener,” says O’Hanlon.

“That then triggered a whole range of ideas on how we could save on energy costs.”

The audit pinpointed air-conditioning (66 per cent), lighting (23 per cent) and hot water systems (6 per cent) as the major contributors to the school’s rising energy bills.

Key outcomes



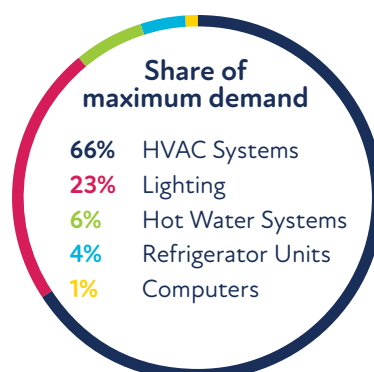
30%
Annual savings on school electricity bill



Kids engaged
Education on energy efficiency & sustainability



Re-invest
\$43,000 savings can be put to core education service delivery



Based on these findings, ERM designed a holistic energy efficiency program tailored specifically for the school. This comprised an end-to-end solution covering supply, installation and support, an implementation schedule, estimates of potential savings, an expenditure budget and a projected payback period.

Savings based on pilot results at Beenleigh SHS, representing almost 30% of their energy costs.

^BSHS’s energy use was compared against this to establish a benchmark.

Energy Warriors – Student Activation

The pre-emptive warnings from Demand Alerter have enabled the Beenleigh State High community to take control of their own energy costs.

When principal O’Hanlon receives an alert, he activates the school’s Energy Warriors. These are a nominated group of Year 12 students who are responsible for reducing the school’s energy usage, for example by shutting down air-conditioners and lights.

“We’ve found the best group to work with are the student leaders, because they are in classes, they have

good relationships with teachers and they can sell it to other kids a lot better than I can,” says O’Hanlon.

“They actually go around when they know the alert’s on and they’ll turn power off and encourage their teachers to do so. We’ve seen the data from ERM, and when we action after an alert we can see what the drop in power is.”

The students are motivated to do this with an incentive that is linked to a reduction in price of their school formal tickets.

“When you can start to give students ideas around ‘if we save this much money, we can do this’, it has much more meaning to them,” says O’Hanlon.

Immediate benefits

In the initial phase of the program the school was quickly able to slash its chargeable kVA demand, saving about \$10,600 across the summer months. The extent of the savings came as a very pleasant surprise, says Christine McCarthy, Beenleigh State High’s business services manager.

“We were amazed by the level of savings achieved in such a short time,” says McCarthy. “I just never understood before that there was a way for us to control our electricity costs. Everyone was blown away.”

The implementation of phase two saw the school’s electricity cost per student drop by 13 per cent at a time when this cost was growing on average by 18 per cent in other schools.

For the year May 2016 to April 2017, the school realised average monthly savings of \$3600, and reduced its carbon emissions footprint by 145 tonnes.

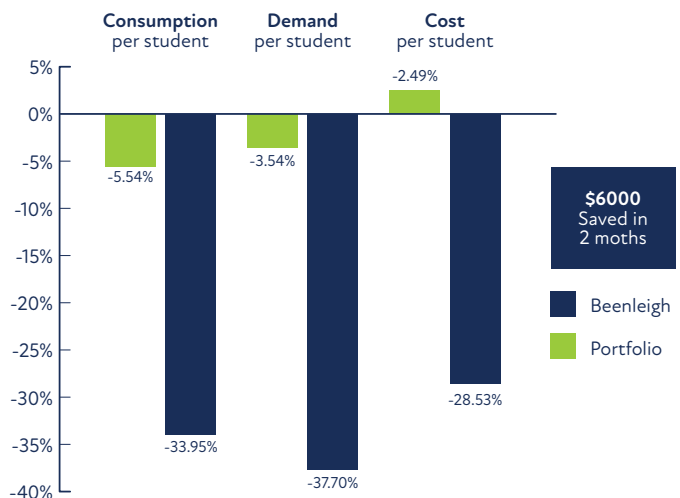
McCarthy says the school is reaping the benefits of its increased efficiency, and intends to keep building on them.

“We are confident we can continue the good work started by ERM to keep our energy costs down,” she says.

“The savings will inevitably be passed on to our students and teachers in the form of improvements to facilities and additional teaching resources.”

Energy savings for the school continue with upgrades to lighting on sports fields.

Summary of Variation Beenleigh SHS v Portfolio



This graph shows the change in consumption, demand and electricity cost per student for May and June 2016 to May and June 2017 over the previous 3 years for Beenleigh SHS and other South East Queensland high schools supplied by ERM Power.

About ERM Power

ERM Power is a fast-growing Australian company specialising in electricity retailing and leading energy management solutions for business. ERM only serves businesses, and works with over 45,000 of them in Australia – both in the commercial & industrial sector and the small to medium business market. The company’s award-winning customer focus has seen them grow to become the second largest electricity retailer to commercial and industrials in Australia. Harnessing the power of people, process and technology, ERM develop and deliver innovative customer solutions that help organisations manage their energy consumption more efficiently. Using bespoke solutions and expert advice they deliver customers smart software, data analytics and an expanding suite of energy-efficiency solutions.