



Stakeholder engagement and behaviour

key to managing energy



Client: Students and staff at Rotorua Girls' High School

EMANZ Member: Mark Carter, Torque IP

Challenge: To support New Zealand schools to reduce their energy costs through energy usage monitoring and reporting, and through educating the schools' key stakeholders in energy efficiency strategies that could directly impact on the schools' energy use.

Solution: Torque IP worked closely with students and staff at Rotorua Girls' High School to monitor and analyse their energy usage data. They also discussed and carried out a number of energy efficiency and management strategies that significantly reduced the school's energy use.

In brief: Mark Carter from Torque IP worked with Rotorua Girls' High School to identify energy savings opportunities following an energy audit and subsequent energy savings strategies and behaviour changes. These included:

- the 'Switch it Off' campaign
- term break shutdown strategies
- thermal wraps and low energy heaters.

As well as energy savings of over 18% in its first year, there was a huge amount of learning by staff and students about energy efficiency strategies that they could implement at school as well as at home. Implementing operational and behaviour changes, having the in-depth monthly meetings to analyse the data, and using a number of related support resources developed with the school, enabled a strong school-wide understanding of energy efficiency and managing its use throughout the day, week and year.

The project

Torque IP, an EECA Programme Partner providing energy efficiency and management advice to the commercial sector, has worked with a number of schools since early 2012 to look at how they can become more energy efficient while reducing their overall energy costs. They were already actively working with schools on the Ministry of Education's sponsored schools network upgrades, and leveraged these relationships to begin providing energy management services to a number of schools around New Zealand.

Rotorua Girls' High School (RGHS) was one of the many schools in the group that saw a great opportunity to save costs, manage their energy use better, and provide 'lifelong learning' for their students. And they achieved a whole lot more than they had planned!

The solution

Torque IP saw a huge opportunity for schools to better manage their day-to-day energy use. They used the EECA Energy Management Advisory Service (EMAS) model and then refined this to focus on both students' and teachers' needs in a school environment.

Key objectives of the EMAS are to:

- increase and promote understanding of how energy is consumed within the school environment
- increase understanding of how energy is measured and invoiced by supply authorities
- highlight areas in which energy consumption may be reduced through simple behavioural changes, initiatives, and energy efficient habits using the existing school infrastructure and technology
- assist the school in developing a well structured, robust energy management plan
- introduce new energy efficient technologies, such as LED lighting.

Using this multi-faceted EMAS approach with RGHS, Mark Carter from Torque IP worked through each of these objectives with the school and made them specific and relevant to their needs.

Torque IP audited the school's electricity use over the 2012 calendar year, and compared this with data from 2013 from electricity invoices each month.

Mark established a management committee with the school, and held monthly meetings over the year beginning in October 2012 with the key stakeholders - students, teaching and management staff, and the caretaker/facility manager - to discuss current energy use and savings and information for sharing wider.

"Using the new monthly data compared with the 2012 'baseline' data, and working through the EMAS model, the school discussed in detail the changes in electricity use and energy efficient strategies carried out. The school tracked any introduced energy-using devices such as laptops and mobile devices and then discussed how to better manage their energy use", Mark said.

A student/staff committee was also established to consider student feedback, ideas for using dollars 'saved' and future directions for the school and student/staff actions.

During the 2013 year a series of low or no cost campaigns and operational changes were planned and implemented with the school, such as the 'Switch it Off' campaign and the monitoring and analysis of monthly energy consumption.

Annette Joyce, RGHS Principal for 2013, was right behind the project. "Our 'term break shutdown' campaign was another very successful programme where we made big savings, by utilising timers, thermal wraps and low energy use heaters.

We all learned, in a very practical way, that each of us can make a huge difference in energy savings. And the bonus was that the energy savings, even with a rise in electricity rates during the year, resulted in a reduced cost overall for energy in our annual accounts."

In September 2012 a target of 8% savings (34,181kWh per year) was set. At the end of the 12 months actual savings amounted to over 18% (77,613 kWh), which is a great result in a school setting.

The company

Torque IP is a leading independent consultancy and project management firm, employing over 20 staff nationwide working with New Zealand schools to support their ICT, electrical and energy strategy.

They are passionate about enabling New Zealand children to take advantage of the benefits of technology and their role in assisting schools to deliver an ICT and energy management platform for the future.

"Our aim was to make the school more knowledgeable about energy efficiency, and understand how we could better utilise our energy resources.

From our first month we were able to make savings. Student response was very positive and the property manager Charlie Hurihanganui ensured all suggestions were acted on in one way or another.

We all enjoyed the fact that we were working together to create a more energy efficient atmosphere at RGHS. Monthly outcomes were also proving to be financially positive for the school, which became another beneficial factor. I personally was amazed at the effect of our 'Switch it Off' campaign, and not just at school - as many students and staff practiced the same techniques at home, with very positive outcomes.

It was a truly win-win programme, that would never have been achieved without the help and support of Torque IP and EECA."

Annette Joyce, 2013 Principal - Rotorua Girls' High School.



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