

Waikato hospital saves double with efficient air conditioning

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OVERVIEW

A money and energy-saving project at Waikato District Health Board's main hospital would never have got off the ground without Energy Efficiency and Conservation Authority (EECA) support.

The project to upgrade to efficient air conditioning chillers at Waikato hospital's Waiora Building has delivered double the projected savings.

The initiative was commercially attractive on paper but because of the requirement for hospitals to prioritise available funds towards such things as hip replacements rather than energy saving, it needed support from EECA to get approval.

Savings of the base project came in above target at \$79,000 a year, giving the project a payback of under four years. Some 566,000 kWh of electricity is saved annually, equivalent to the electricity used by 78 homes.

Even better, streamlining the building controls to better suit the changed functions of the building resulted in additional savings of \$88,000 a year over and above those achieved by the new chiller.

Support for the project came through EECA's Crown Loans, where public sector agencies can access interest-free loans to invest in energy efficiency improvements and renewable energy technology.

Hospitals, universities, local government and other public agencies can apply for funding for a range of projects from swapping an inefficient boiler for modern heat pumps, to assisting an investment in electric vehicles.

"Invariably, entities such as hospitals and universities have higher priorities than saving energy," says EECA General Manager Greg Visser. "But these targeted, interest-free loans mean funding is not diverted from core priorities. Indeed, ongoing energy savings allow more money to go into those priority clinical needs."

EECA research shows that public sector organisations, just like any large energy using business, can save up to 20% of the energy they use through smarter energy use. Usually, there are considerable spin-off benefits, such as improved patient comfort through better building lighting and heating and cooling.

After the chillers were installed in the Waiora Building in late 2015, and working to specification, the facilities and engineering teams were brought together to nut out improvements to the heating, air conditioning, and ventilation controls that fed off chillers.

"A key to the success of this project is that all the hospital's engineers got around a table to brainstorm," said EECA account manager Dane Fredriksson. "They were assisted by an external energy consultant, Martin Lynch, who has had a long involvement with the DHB. He helped the group find the best use of downstream demand for the cold water that the chillers were producing."

"That enabled a whole bunch of extra savings. It got the staff really engaged. It proved a very low cost option to get additional savings."

Saving energy in partnership with EECA is not new to Waikato DHB. Three years ago, it employed Martin part-time as an external EECA programme partner, to help develop the organisation's overall energy management plan. That plan, based on an international standard for energy management has far surpassed an initial target of 2.5 GWh of energy savings. Projects since July 2015 had delivered energy savings of 1.5 GWh in electricity and 3 GWh in gas. The plan is to bump that up to over 5 GWh by July this year – the equivalent of energy used by 539 homes.

Total energy costs have been slashed by \$300,000 a year.

In the past five years, 38 public sector projects have received Crown loans, resulting in cumulative savings of \$9 million and carbon reductions of over 5,000 tonnes each year.

WHAT THEY SAVED

- New chillers installed resulted in 0.6 GWh of electricity saved
- Base project annual savings of \$79,000
- Streamlining building controls saved another \$88,000
- Savings in Waikato DHB's energy management plan since July 2015 amount to over \$300,000 a year

HOW THEY SAVED IT

- Renewed the air conditioning chillers in the Waiora building
- Optimised downstream uses for the cold water the chiller produced
- Streamlined the building controls to better suit the changed services of the building

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