

TEEP Energy Audit

Case Study

Lime Tree Lodge

The TEEP energy audit revealed that switching from electricity to LPG to heat water, something Lime Tree Lodge was considering as an energy efficiency initiative, would actually cost the luxury lodge more. "This has meant we have avoided a significant capital outlay on an option which is inferior in economic terms," says Manager, Sally Carwardine.

Located at the foothills of the Southern Alps and Mt Aspiring National Park, Lime Tree Lodge is a five-star, Qualmark-approved luxury retreat, just six minutes drive from the resort town of Lake Wanaka. The Lodge, a TIA member, is one of several tourism businesses to be audited as part of TEEP 2009.



Set on 4 hectares, this boutique lodge comprises two luxury suites and four guestrooms, each with their own ensuite. Up to 12 guests can be accommodated overnight. Facilities include a swimming pool, spa pool, five hole pitch-and-putt golf course, petanque, croquet lawn and on-site helipad for heli-sightseeing tours. Breakfast and evening aperitifs are included in the tariff and a three-course gourmet dinner is available.

The Lodge also offers a full event-management service, for weddings and other special events.

Energy Use

Energy to the site is supplied by electricity over four separate meters, including one anytime meter, two controlled meters and one night meter. Total electricity consumption for the year ending July 2009 was 60,272kWh, which came at a cost of \$10,024.36 after discounts were applied.

Heating and the management residence account for 60% of total energy use. At the time of the audit the lodge was considering using LPG for water heating. This provides instantaneous heating of cold water rather than storing heated water in a tank and is generally cheaper than electric heating if low-cost fuels such as natural gas are used. However, as natural gas is not available in the South Island, the audit found LPG would be an inferior option for the lodge economically.



The audit identified a total of \$672 annual savings, approximately 7% of the site's current annual energy expenditure. The limited extent of savings was the result of the conservation measures already in place, including turning off all devices in unoccupied rooms, placing hallway lights on passive infrared sensors (designed to turn on when a person approaches, but will not react to a person standing still), insulating hot water cylinders and downgrading room heaters from 2kW to 1kW.

The savings identified related to replacing inefficient halogen and incandescent lamps with the appropriate compact fluorescent lamps (CFLs), reducing shower flow rates to industry-standard levels and improved management of the office PC.

Cost, Savings and Payback Time

Immediate payback

- Ensure office PC is turned off when not required

Total Cost: \$0 Total Annual Cost Saving: \$32.40

Payback in less than eight months

- Install 91/min flow restrictors; replace 100W incandescent lamps

Total Cost: \$412.00 Total Annual Cost Savings: \$548.16

Payback in less than 2.5 years

- Replace 50W halogen light fittings

Total cost: \$200 Total Annual Cost Saving: \$91.92

“Our primary rationale for completing the energy audit was to save money on our energy bill. However, having completed a sustainable tourism project last year, we were very mindful of the lodge’s current energy consumption and carbon footprint and motivated to minimise our environmental impact,” explains Sally Carwardine, Manager, Lime Tree Lodge.

“We promote ourselves as an eco-friendly lodge – it is therefore important to ‘put our money where our mouth is’. Our clients are well educated and extremely sensitised to environmental issues. In this context, it is vital to ensure that any claims are backed up by constant assessment and monitoring of our overall operational efficiency.”



Ms Carwardine says she would recommend an energy audit to other tourism operators. “Because our site was found to be very energy conscious, the extent of the energy savings it highlighted were limited. However, it did shed new light on a proposed initiative we had been considering – whether or not to convert from electricity to LPG for water heating. Following the audit, we decided not to pursue this initiative. This meant we avoided significant capital outlay on an option which is inferior in economic terms.”

The Tourism Energy Efficiency Programme (TEEP) was originally developed as a regional pilot in 2008. After a successful first year it was extended into a national programme for 2009.

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