

Solar Hot water System, Photovoltaic installation and rainwater tank installation for Grampians Eco YHA – Australia

SUMMARY

Project Description: Install new photovoltaic cells replacing existing obsolete units, upgrade of the solar hot water system, design and installation of rainwater storage system for re-use and fire fighting enhancements, and deployment of energy efficient guest appliances in the hostel

Project Type: Energy Efficiency, Sun and Water

National Association: HI Australia

Project Location: Grampians Eco YHA

Estimation of number of reduced tonnes

of CO₂: Our consultant estimates that the new photovoltaic cells will save at least at least 15% savings on power annually which equates to nearly £ 2,100. This would also convert into a saving of approximately **15.6 tonnes CO₂-e** per year

Total Funds Requested: £ 16,000

Total Project Cost: £ 32,000

Annual £ saves and ROI (return of investment): Around £2,100 per year with eight years ROI

Why should this project be funded ahead of others?

This project will directly contribute to a high quality yet budget accommodation option for visitors plus it demonstrates a “return to the environment through sustainable carbon reduction initiatives; environmentally sustainable design” and “linking nature-based tourism with other tourism sectors.” Victoria’s nature based tourism strategy (2008-2012). By upgrading the sustainability features to state of the art technology and incorporating interpretive and educational elements, we will be able to transform a simple hostel in a small regional town into the hub of an environmentally-friendly, nature based holiday.



DETAILED PROJECT INFORMATION

Grampians Eco YHA is located in Halls Gap, close to Grampians National Park in regional Victoria. It is T-QUAL and ECO Certification 4 accredited. It currently records about 10,000 guest overnights each year. The hostel recently won the top rated YHA in Australia with 51-100 beds and came second nationwide with its customer rating of 97% on yha.com.au. The proposed project is to:

- Install new photovoltaic cells replacing existing obsolete units.
- Upgrade of the solar hot water system
- Design and installation of rainwater storage system for re-use and fire fighting enhancements, and
- Deployment of energy efficient guest appliances in the hostel



As stated in the Tourism 2020 report “Australia has a wealth of assets that differentiate it from other destinations around the world, including unique landscapes and nature-based tourism offerings; indigenous culture and heritage...” Nowhere epitomises this more than the small town of Halls Gap where this hostel is located.

However due to bushfires and flooding, it has suffered as a tourism destination recently and is only slowly attracting visitors back to enjoy its many charms. Investing in this project will contribute to the resilience of Halls Gap and help to restore visitation to pre-disaster levels with a unique and very high quality addition to nature-based tourism at a budget price-point.

The Regional Awareness and Perceptions Study (2007) found that there was no single clear attribute identified for the region but that it is strongest in natural attractions and adventure. Grampians Eco YHA can help to reinvigorate the destination by working with the National Park, Indigenous and Nature-Based Tourism operators to build a complete portfolio of environmentally friendly tourism experiences that fit together to form a holistic experience for the visitor. This will likely increase the diversity of guests interested in visiting the destination as well as their length of stay as they become aware that there is more to Halls Gap than can be fitted into a day tour.

By upgrading the sustainability features to state of the art technology and incorporating interpretive and educational elements, we will be able to transform a simple hostel in a small regional town into the hub of an environmentally-friendly, nature based holiday. **This is a major point of difference to attract visitors inland towards a unique rural destination and to encourage them to extend their stay and is highly consistent with the Regional Tourism Action Plan (2009-2012)** as it will improve the Nature-based tourism offering.

We have measured energy consumption since 2010 to establish a benchmark, and will compare with the results afterwards to track the savings that have been realised in electricity and water usage. This will be reported at the hostel and in the sustainability section of our website. We will also monitor customer feedback on the sustainability features, growth in occupancy and yield and the trends in guest demographics.

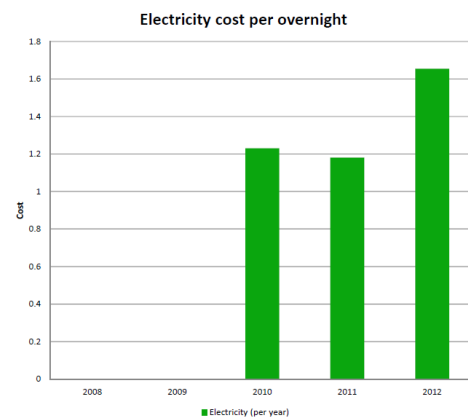
When the hostel was built, experimental photovoltaic power generation technology was installed and as the old units approach end of life we will replace them with the current best available technology.

Current maximum capacity is 7kW but due to degradation output is only around 1.2kW as can be seen on the power usage graph below. We plan to install a new **10kW** system which has an average daily production of 36kW.

Our consultant estimates at least 15% savings on power annually which equates to nearly £2,105 pa. This would also convert into a saving of approximately **15.6 tonnes CO2-e per year**.

The solar hot water system is also approaching end of life and requires upgrades which will result in greater utilisation of solar energy as the demand for hot water in the hostel has significant high and low periods. The solar aspect of the project is already being scoped in detail by Re-Energy Solar Systems. As per our usual practice we will seek competitive quotes prior to commencing works. Estimated time for completion of works once authorised, is only 3-4 weeks.

Our annual benchmarking statistics show that the hostel water usage per overnight guest has increased by over 50% since 2011 levels and we can attribute this directly to the use of mains supply water as the rainwater systems have deteriorated. We anticipate an annual savings of £6,000 pa in water usage plus having better fire fighting capacity and putting fewer loads on the town sewerage systems.



The direct economic benefit of the eco-upgrades will take approximately eight years to achieve Return on Investment (ROI), i.e. \$106,000 of investment / \$13,500 of annual savings = 7.85 years payback.

However, the indirect benefits will be more guest overnights to the hostel and the community, an **enhanced educational offering** for groups and capacity building within YHA for further eco projects makes this an important undertaking for YHA.

This project will directly contribute to a high quality yet budget accommodation option for visitors plus it demonstrates a “return to the environment through sustainable carbon reduction initiatives; environmentally sustainable design” and “linking nature-based tourism with other tourism sectors.” Victoria’s nature based tourism strategy (2008-2012).

This will be a disruptive project involving earthworks so we have scheduled it to take place in the slower season. Guest disruption will be further minimised by the “zoning” aspect of the design of the building which enables parts of the hostel to be isolated during cooler or less busy parts of the year to save energy costs. It will also enable us to concentrate guests in areas that are less impacted by the works.

Another integral part of the project will be documenting and communicating what we are doing at each stage, so guests and the local community can learn about the sustainable features, both as they are being installed as well as after the fact.

We believe that this interaction will go a long way to making any minor disruption be viewed by guests as an interesting and authentic experience in itself.