

Solar photovoltaic project at Yarrawonga Health

Introduction

Yarrawonga Health (Victoria, Australia) is Moira Shire's largest health service providing acute inpatient services, residential aged care and primary and community health services. The health centre reduced its carbon emission by installing 96 kilowatt photovoltaic solar array and demonstrated as a leader in environmental management within the local community.

Implementation of the practice

In 2013, Yarrawonga Health electricity cost had risen by approximately 60 percent than the previous year. Electricity is predominantly used for air conditioning, ventilation and lighting. In order to alleviate increasing energy costs, Yarrawonga Health with financial support from the Department of Health installed a 96 kilowatt photovoltaic solar array. In addition, the department supported Yarrawonga Health with an LED lighting replacement project that is currently being implemented.



Image: Photovoltaic solar array at Yarrawonga Health

Besides energy cost savings the system was chosen to reduce the organization's carbon emissions. The anticipated benefits from the solar array were annual savings of \$25,000 to \$30,000 and an annual reduction of~ 200 tonnes in carbon emissions. The system consists of:

- 2 x 48 kW inverters
- 384 x 250 Watt solar panels
- cabling and racking, isolators and circuit breakers
- data logging and remote access, and
- safety access walkways and anchor lines.

The project was planned and facilitated by Yarrawonga Health with assistance from a structural and electrical engineer.

Results

Over the period 11 August 2013 to 31 January 2014 the project achieved the following outcomes, which suggest that the project will achieve the anticipated benefits:

- A reduction of 87,543 kWh of purchased electricity from the grid as compared to the same period in the year before
 - Generated solar electricity of 83,311 kWh, averaging 13,885 kWh per month
 - Cost savings of \$14,163, averaging \$2,360 per month, or about 15 percent reduction in
 - electricity expenditure, and
- Carbon emission savings of 99.5 tonnes.

Additional electricity and carbon, and associated financial, savings are expected at Yarrawonga Health from the LED lighting project currently being implemented.

A related benefit from the project has been an ongoing organisational cultural change at Yarrawonga Health in relation to energy use. Staff have embraced the project and have a better understanding of energy efficiency and what they can do to reduce energy use.

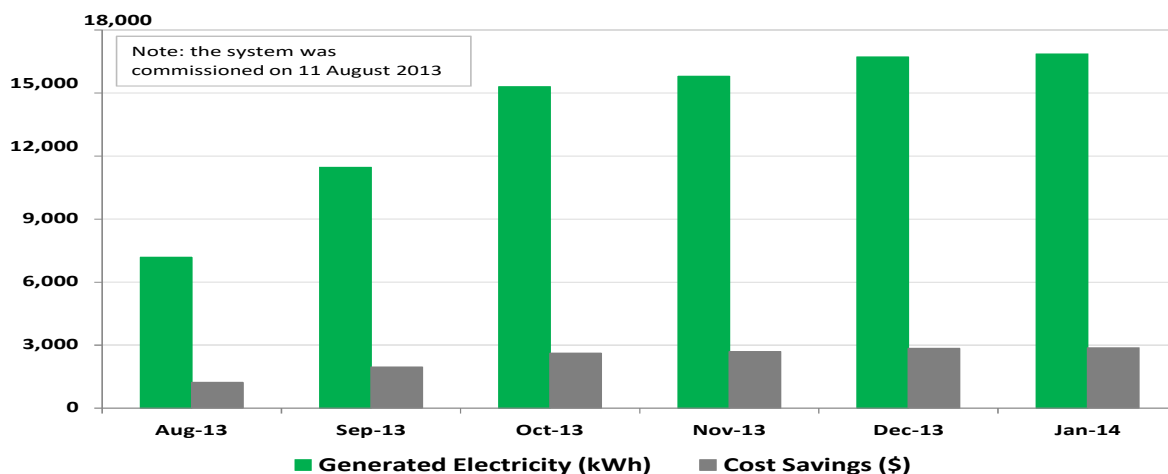


Image: Generated solar electricity and financial savings per month

Conclusion

In addition to the electricity, the solar panels on the roof serve as heat insulation to the building. The medical center also upgraded to energy-efficient LED lights which reduces energy consumption and carbon emissions into the atmosphere.