

A CASE STUDY

10KW

SOLAR PV SYSTEM ON DUNCRAIG MEDICAL CENTRE

Perth, WA



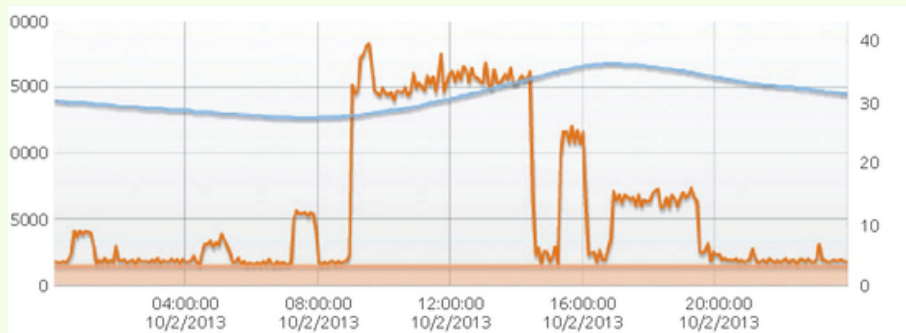


Introduction

Duncraig Medical Centre is situated in a northern suburb in the sunny city of Perth, capital of Western Australia. Regen Power was approached by the medical centre to perform an energy reduction review and to highlight the costs and benefits associated with investing on a rooftop solar power electricity generation system.



The medical centre is open for 7 days a week and thus ideally suited for rooftop solar photovoltaic power generation. Prior to the installation of the solar power system, Regen monitored the energy consumption for a couple of weeks. Power consumption during a typical Sunday and Monday in the summer month of February is shown in Fig 2.



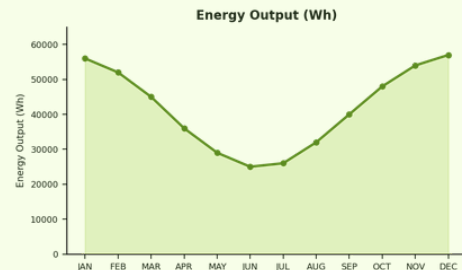
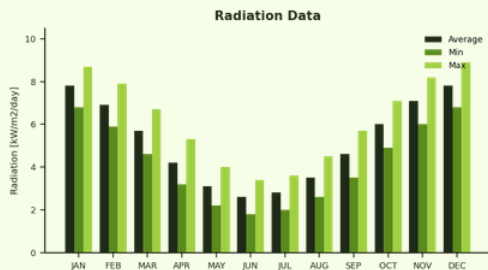
24 hour Load Profile : Sunday, 10 Feb 2013



24 hour Load Profile : Sunday, 11 Feb 2013

System Analysis System

The major load in the premises during summer is air-conditioning which coincides with the sunshine hours. After consultation with the management and assessing the roof space available, it was decided to install a 10kW Solar PV system which has the potential of generating about 45kWh (or units) per day. It was estimated that the solar power generation would offset approximately 30% of Dun Craig Medical centre's annual electricity consumption with a simple payback period of 3.5 years.



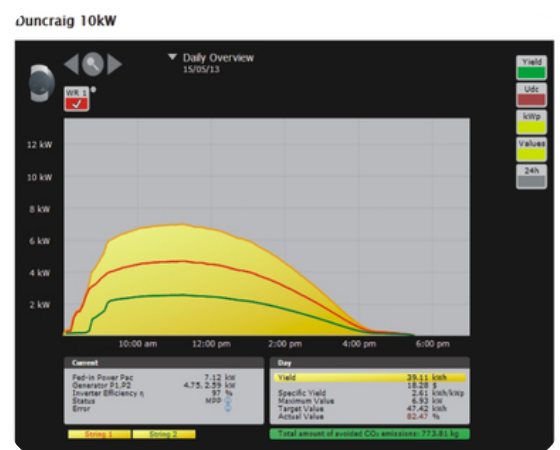
Project Details

System size	10kW
No. of PV Modules	40 x 250W HANWHA SolarOne
No. of Inverters	Modules 10kW SMA Tripower 10000TL
Annual Energy Yield	Inverters 15860 kWh per annum
Estimated CO2 savings	13 Metric Tonnes per annum



System Details

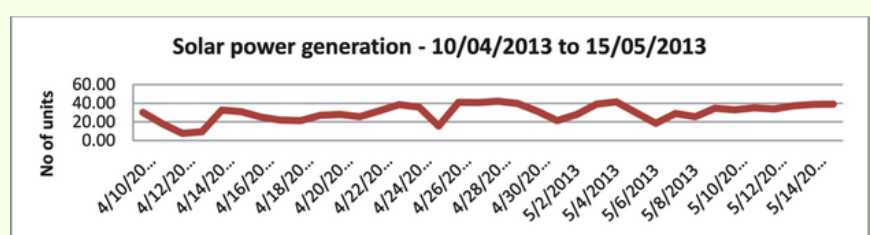
The system consists of 40 HANWHA Solar One Polycrystalline 250W solar modules supported by a 25-year warranty and are certified by TUV, CE, UL and CEC worldwide certifications; along with meeting all Australian and European quality and safety standards. The solar modules are mounted using PV-ezRack universal roof mounting systems supported by 10 year warranty. The SMA Tripower inverter(STP 10000TL) offers exceptionally high yields with an efficiency of 98.5% and are supported by 5 years warranty. Regen Power provides 5 year warranty for the installation. Like all Regen commercial installations, the system also includes a remote monitoring system:

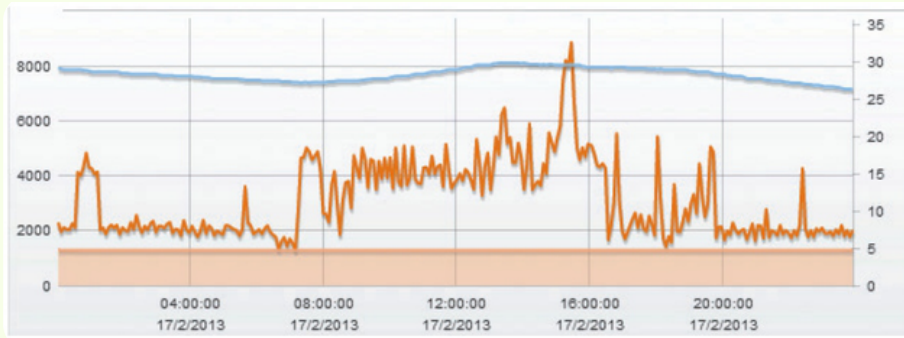


Screen capture of SolarLog Solar Monitoring System

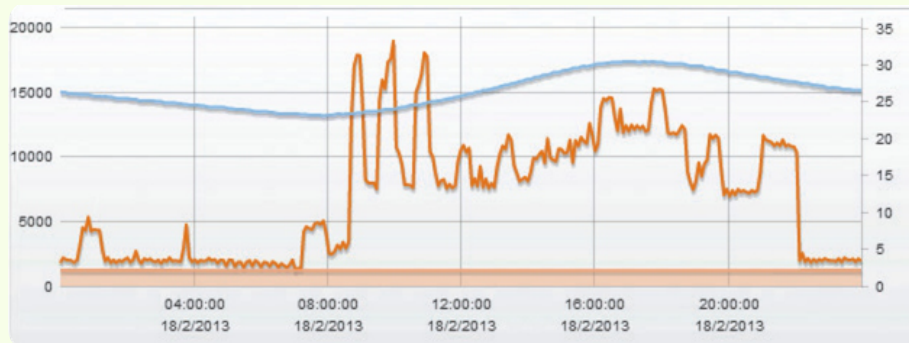
Results

The project demonstrated substantial savings in electricity bill in the first 60 days of the operation.





24 hour Load Profile : Sunday, 17 Feb 2013

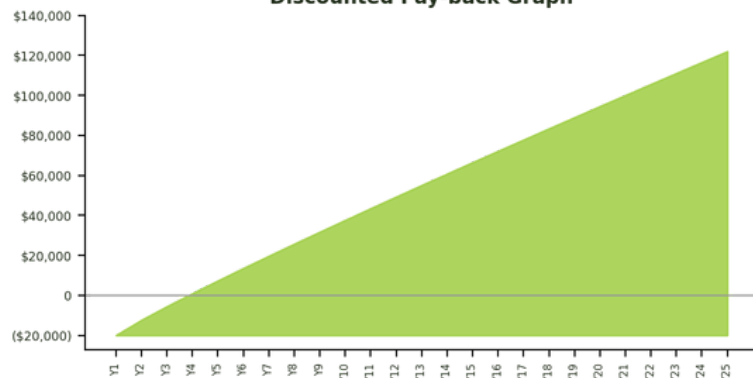


24 hour Load Profile : Monday, 18 Feb 2013

Payback Analysis

Based on an average of 45 units of power generated per day for a 10kW system, and factoring in various other parameters the system has a rapid return on investment of **3.6 years**.

Discounted Pay-back Graph



Need help? Call our expert team on **08 9456 3491**

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