



Energy Efficient Solar Hot Water

3S were instrumental in developing an innovative Kingborough Community bulk purchase of evacuated tube solar hot water systems through Sustainable Living in Kingborough (SLiK). It started with an analysis of available systems to identify the best system that met the reliability, long life and high efficiency criteria. To maximise the all-important free solar heating through the spring and autumn months in Tasmania, it was calculated that elevation at 55 degrees on a frame was necessary. Whilst inevitably adding to the cost, this quickly paid for itself in the extra energy captured during eight months of the year when the sun was lower in the sky. A system was devised to allow householder ordering with payment directly to the nominated supplier/installer. Community engagement to identify who wanted to purchase systems was arranged through Survey Monkey with several public information sessions to find out how the system worked. Deposits needed to be paid to ensure a place in the queue for site visit and installs, with 73 systems installed during the short acceptance period through to installation. Analysis of energy bills showed many households saved around 30% of their energy bills from solar hot water, and approx. 95% were satisfied with the quality, efficiency and reliability of the systems provided.

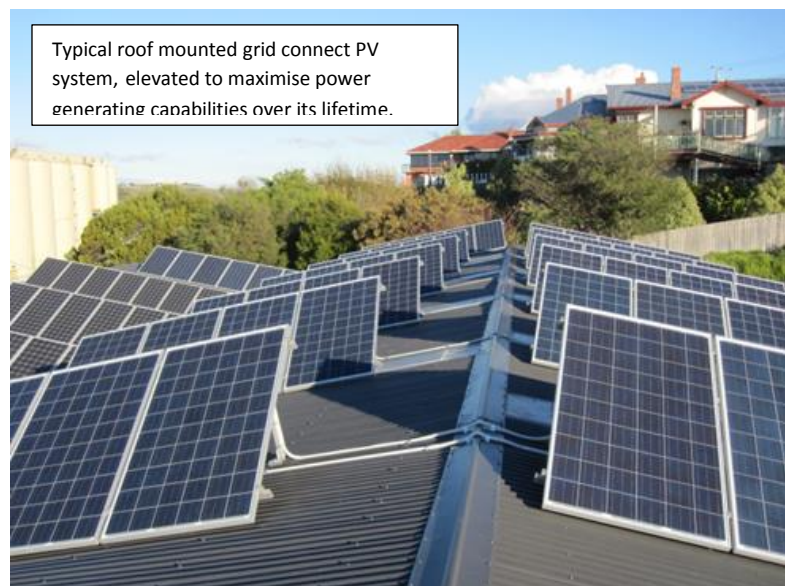
3S can provide advice and project management services to help businesses weigh up energy efficient options for meeting their hot water needs leading to lower energy bills into the future with payback periods that make investment worthwhile.

Cost effective Solar Photovoltaic (PV) Electricity Generation

3S involvement started with a review of PV systems for the community to benefit from guidance on a range of do's and don'ts, and things to watch out for when purchasing residential solar PV systems.

This "Solar Power Explained" guidance is available from the <http://www.slikinfo.org/Energy-Efficiency.html> and many residents found it valuable research for their own investigations into selecting their PV systems.

Sizing PV systems, estimating cost savings, identifying best location, payback periods and cost-effective recommendations, were made for the Hobart Women's Health Centre, who are now making significant savings on their power bills.





These solar experiences led to 3S being asked to project manage the selection and installation of a 50kW PV system for Kingborough Council. It is a state of the art PV system with which Kingborough Council is taking a leadership role. This solar PV renewable energy generating system will meet Council's objectives of climate change adaptation and reducing carbon emissions while also reducing monthly energy costs by around 20%.

Other Businesses Can Benefit

As the largest solar PV array (50kW) of any Tasmanian Council this is an important project because Council have based their business case on using most of the energy generated during working hours thereby offsetting the purchase of electricity from Aurora at 0.22 cents/kWh rather than focussing on the feed-in tariff, currently an unattractive rate of 5.5 cents per kWh of electricity generated. This working hours usage model has an attractive 6-7 year payback period for the 50kW system.

Additional system monitoring will allow staff and the community to see how much energy is being generated in real time and compare this against last month and last year. It will also indicate the total amount of energy generated since the system went live, and the energy \$\$\$ the system has saved Council from spending.

More businesses that use most of their energy during the working day, could be making similar cost effective investments to offset their rising energy bills (surprisingly few businesses have to date).

3S can use its expertise to assist businesses make the right choices in a transparent way to achieve a cost effective selection through the minefield of solar PV systems available in the marketplace. We can assist with analysis of quotations to ensure key specific selection criteria for the business are met and the whole project is managed from inception to installation in a professional and cost-effective manner, delivering a satisfactory high performing reliable PV system, that will maximise electricity generation over the next 25 year anticipated working life of the system, yet with acceptable paybacks on the investment.