



FACT SHEET



**INNOVATION
THROUGH
DEMONSTRATION**



SOLAR PV AND BATTERY TRIAL

SOLAR PV AND BATTERY STORAGE IN A STRATA SETTING.



Artist impression for illustrative purposes only.

We are collaborating with Curtin University, the CRC for Low Carbon Living, Solar Balance, Balance Group and the CSIRO to undertake this ground-breaking research, to look at how to increase the uptake of renewable energy within strata residential developments across Australia.

Presently more than 1.4 million households in Australia have rooftop solar PV systems, however very few of these are on strata housing or apartments.

Electricity prices in Australia have risen dramatically in the past decade, especially when compared against the Consumer Price Index (CPI), and so potential solutions to decrease these costs are more important than ever.

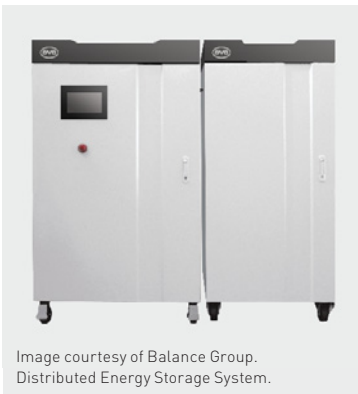


Image courtesy of Balance Group. Distributed Energy Storage System.

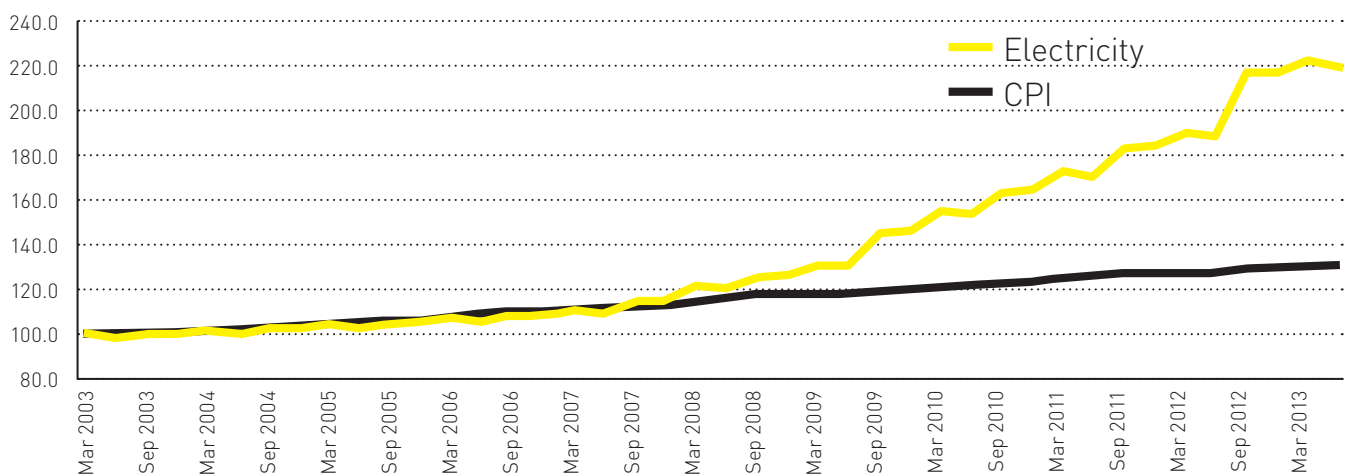
PRESENTLY MORE THAN 1.4 MILLION HOUSEHOLDS IN AUSTRALIA HAVE ROOFTOP SOLAR PV SYSTEMS.



THIS RESEARCH HAS DEVELOPED A GOVERNANCE FRAMEWORK AND MICRO-GRID SYSTEM DESIGN FOR SOLAR PV AND BATTERIES TO BE INSTALLED ON STRATA.

CONSUMER PRICE INDEX AND RETAIL ELECTRICITY PRICES

(MARCH 2003 = 100)



The research is being trialled within the Gen Y Demonstration Housing Project on Lot 7 at the WGV residential development.

Just a few developers are currently offering solar PV systems for apartments, but they are usually individually wiring each PV array to each dwelling or just using PVs to light common areas.

This limits the potential for sharing of electricity from dwelling to dwelling or apartment to apartment, which results in less opportunity to reduce electricity bills due to the difference in prices between selling PV generated (7c/ unit) and buying electricity from the energy retailer (25.7c/ unit in Perth on the A1 tariff or more).

Apartments up to four to five storeys have the potential to provide all their electricity needs using solar PV panels on their rooftops, but developers for the most part have not included these in their buildings.

THIS RESEARCH INTENDS TO OVERCOME SOME OF THE CHALLENGES TO THE UPTAKE OF RENEWABLE ENERGY INFRASTRUCTURE ON STRATA DEVELOPMENT OR UNITS.

The reasons for this are several-fold:

- Lack of well developed and demonstrated governance solutions to effectively share the benefits, risks and costs between developers, owners, tenants, strata bodies and utilities.
- Uncertainty of in-home customer energy behaviour; the actual behaviour will have a significant impact on whether the benefits of the renewable energy are realised.
- Without viable (safe, affordable and efficient) energy storage solutions that allow sharing of solar energy between strata units, it hasn't been possible to get optimum value for shared strata type solar infrastructure. To date, developers are individually wiring solar panels to individual dwellings, significantly limiting the potential economic benefit of the solar. The economic efficiency of solutions which allow all of the solar energy to be used within the development is considerably

higher than exporting excess solar energy to the grid at low buy-back tariffs.

- Investing in new enabling technologies and offering alternative energy products results in new risks for developers and landlords, without knowing how the market will respond.
- A lack of exemplar projects to demonstrate how shared strata solar PV and storage can be done has meant that the engineering and electrical system design is seen as being quite different and more complex than business-as-usual.

Meanwhile, battery prices are declining and electricity prices continue to rise, making the economics of using solar PV and batteries, instead of grid based energy, increasingly attractive.

This research has developed a governance framework and micro-grid system design for solar PV and batteries to be installed in strata developments.

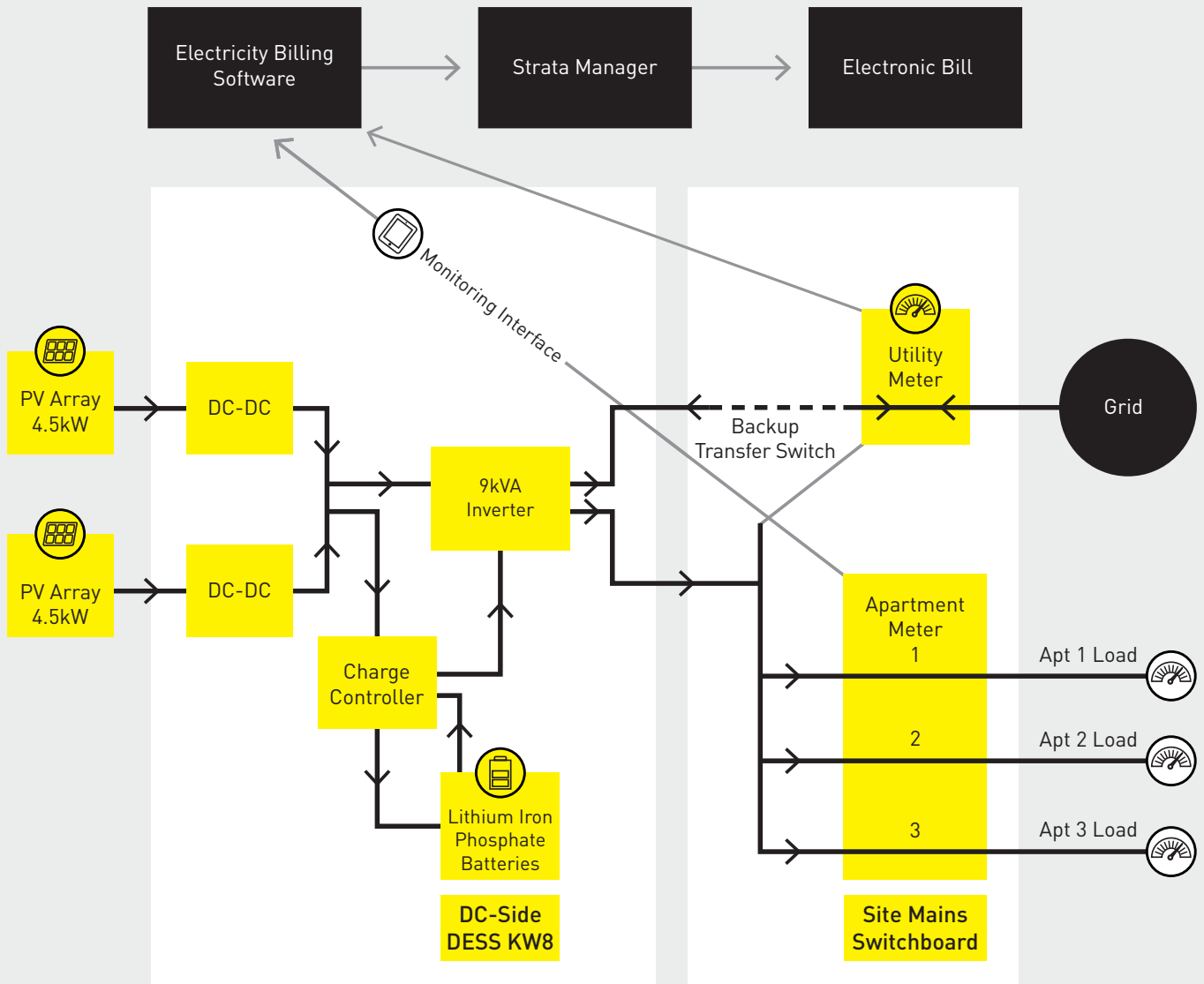
The system provides the majority of electricity needs to residents, with the billing system to be handled by the strata company.

Tenants then pay their electricity bill to the strata company, instead of the energy retailer, which provides an additional revenue stream for property owners to justify the capital investment. This can offset the owner's strata costs. Tenants pay no more for their electricity than if they were to buy it from the energy retailer, but they get carbon-free electricity.

Owner-occupiers also get carbon-free electricity and receive electricity at a discounted rate to buying it from the energy retailer.

This research intends to overcome some of the challenges to the uptake of renewable energy infrastructure on strata development or units. This means as the price of solar PV and batteries continue to decline and the price of grid-based energy continues to rise, this approach to shared energy infrastructure will become more mainstream.

DESIGN AND METERING



Disclaimer: The information contained in this document is in good faith; however neither LandCorp nor any of its directors, agents or employees give any warranty of accuracy nor accepts any liability as result of a reliance upon the information, advice, statement or opinion contained in this document. This disclaimer is subject to any contrary legislative provisions. © LandCorp 2016. LAND6249G
EcoStar is an environmentally responsible 100% recycled paper made from 100% postconsumer waste that is FSC CoC certified and bleached chlorine free (PCF).

FOR MORE INFORMATION VISIT LANDCORP.COM.AU/INNOVATION/WGV