

**pitt&sherry**

Specialist Knowledge.  
Practical Solutions.

# Agriculture Applications of Batteries



Australia's largest solar farm opens in Kerang, in

**Su-Kam** firm opens  
*Ek nayi soch*

sherry

When I take over,  
 Electricity bills take off!

Faster payback of your investment in solar power

Our Energy Intelligent Unique to Evergen, E make minute-by-minute

These fine calculation because they adjust for your tariffs.



**Deepesh**  
 9495 36 99 43

Office : 0490 2324822



VIDEO: Australia's largest solar



Distributors for: Inverter, Ba

\*Products available with MNGE sp



250VA Solar Pack  
 ₹13,999/-

\*Cab

**Small Energy Efficient Home**

Solar Array	5.2 kWh
Battery Bank	24x 2V, 600Ah Sealed Gel Batteries
Daily Usage	10 kWh
Autonomy	3 Days
Battery Life	12-15 years

18 x 275W Tier I Panels 1x Seletronic  
 1x Fronius Inverter 24 x 2V, 600Ah Sealed Gel Batteries

**\$25,249.**

# Why talk about batteries



**81%**

of farmers say cost is a bigger concern than reliability.



**78%**

of farmers nationwide say they do not have control over energy costs.



**61%**

of farmers say rising energy costs have a moderate or significant impact on their farm operation.



**76%**

of Australian farmers say they'd like to invest in solar with battery storage.



**91%**

Dairy farmers are the most likely to feel they can't control energy costs – 91% say they do not have any control.

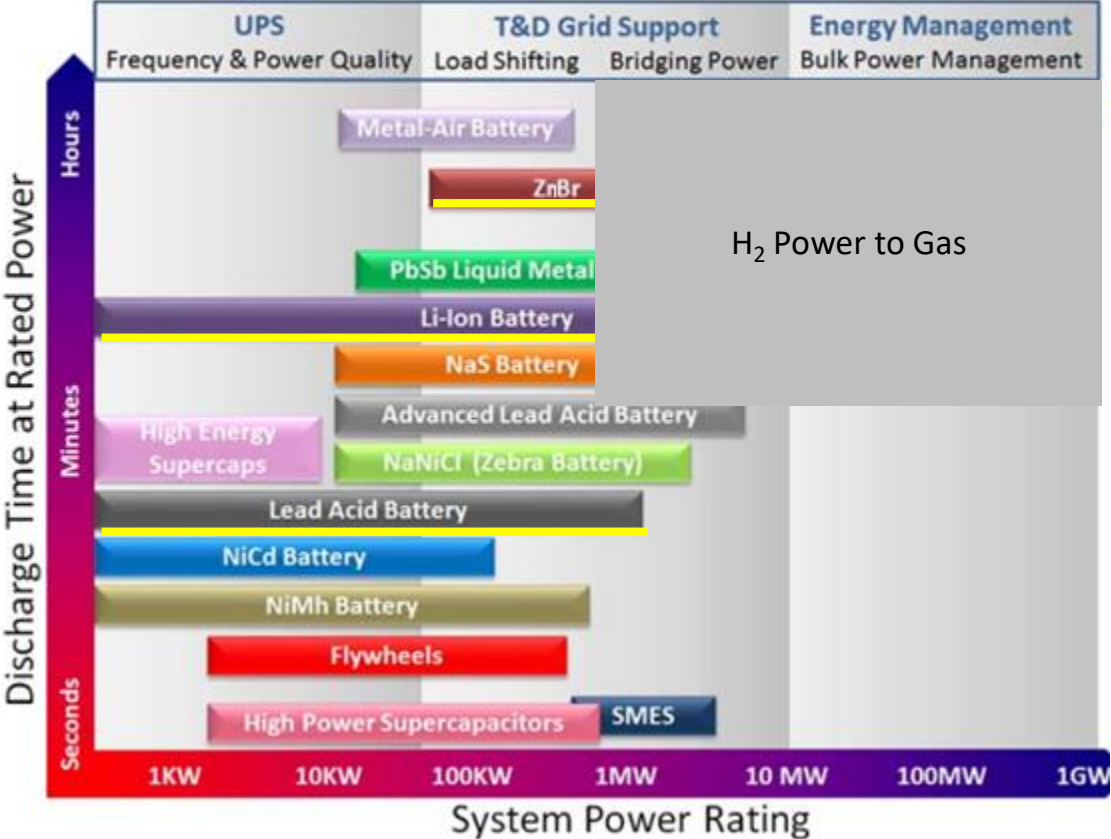


**WA**

farmers are the most keen to invest in energy efficient solutions in the future, with 47% saying they are very or extremely interested.

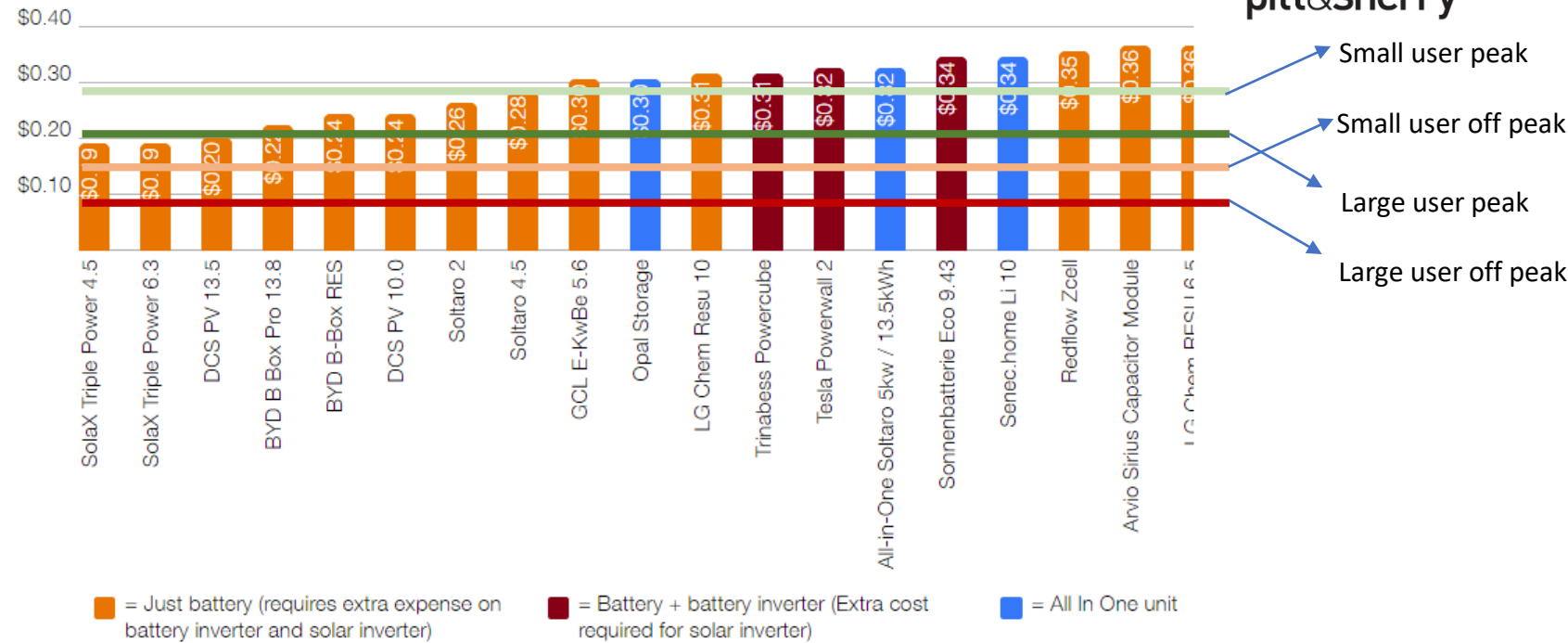
# Grid Energy Storage Technologies and Applications

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[https://www.mpoweruk.com/grid\\_storage.htm](https://www.mpoweruk.com/grid_storage.htm)

From 2005

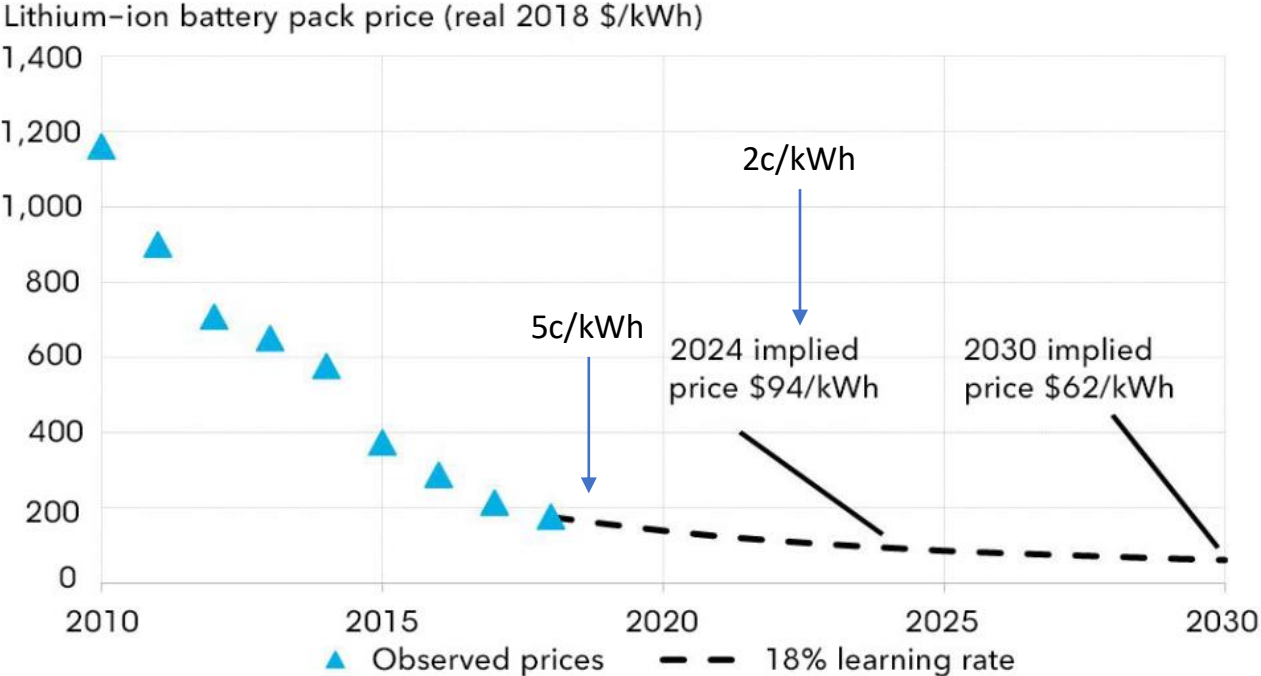


<https://www.solarquotes.com.au/battery-storage/comparison-table/>

Typical solar PV only is between \$0.06 - \$0.10 per kWh over the warranted period

Updated August 19<sup>th</sup> 2019

### Lithium-ion battery price outlook



Source: BloombergNEF

# Recent Effective Battery Applications pitt&sherry

- Standalone systems, particularly in WA due to the size of the grid
- SA – due to the potential \$6000 subsidy from the state government
- Moree, NSW – for irrigation and off grid uses mainly
- Better utilisation of renewable energy\*

A photograph of a battery storage room. The room contains several rows of battery racks filled with batteries, connected by orange and black cables. On the wall, there are several yellow inverters or converters. The room is well-lit and appears to be a professional installation.

## Effective battery applications

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- Off grid applications with solar
  - Power to remote sites
  - Higher energy infrastructure costs offset by lower land and compliance costs





## Effective battery applications

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- Diesel replacement in remote areas
  - Reduction in diesel transport costs
  - Reduction in maintenance costs
  - Mitigate large grid connection costs

# Effective battery applications

- Supply stabilisation and UPS (more than a standard battery system)
  - Growing importance for robot dairies
  - Provides power to equipment before generators can start

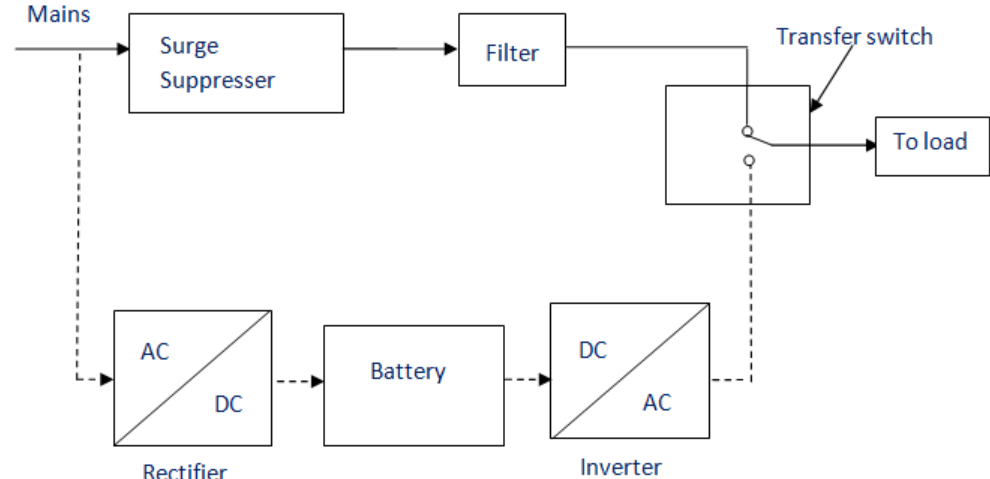
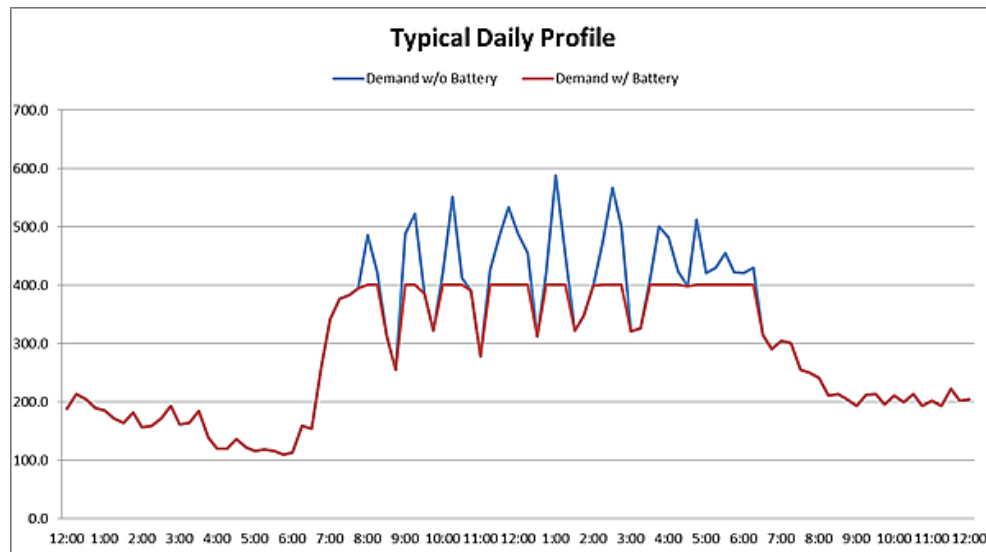


Figure 1

## Effective battery applications

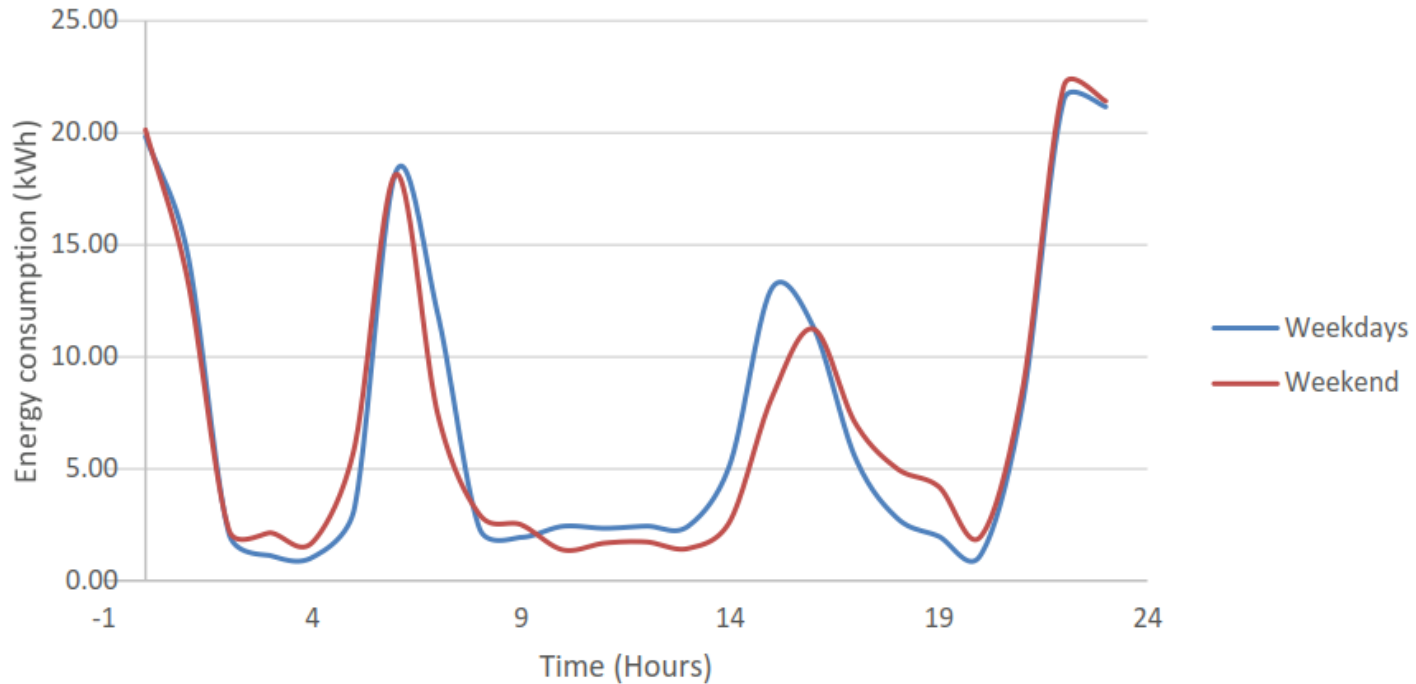
- Peak demand management
  - In presence of high demand charges and/or infrequent but high peaks
  - offset main supply upgrades

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# Uneconomical battery applications

Energy consumption profile - January



# Uneconomical battery applications

- Grid connected renewable storage in the presence of a feed in tariff
  - Better to export excess solar production instead of spending capex on batteries to store it
  - Packaged solar + battery deals
- Off peak storage for peak use
- Grid independence
- Mitigation of frequent demand peaks
  - A single demand event can be charged across a full year, regardless of frequency
  - Typical cycle life of lead acid is 300, lithium is 4000, flow batteries 30,000+

# Key criteria for making a decision

- Fully quantify other cost savings/deferred expenses in addition to usage rates
  - Diesel transport costs
  - Grid extension costs
  - Transformer upgrade costs
  - On farm benefits
- Availability of solar and current price tariff
  - In most cases, accepting a feed in tariff (even if it is low) is better than using batteries
- The system needs to be designed specifically for your farm!

## Why pitt&sherry?

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Practical solutions.

Through unmatched people,  
skills, insights & industry  
experience

Your customer experience  
with us will be great.

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