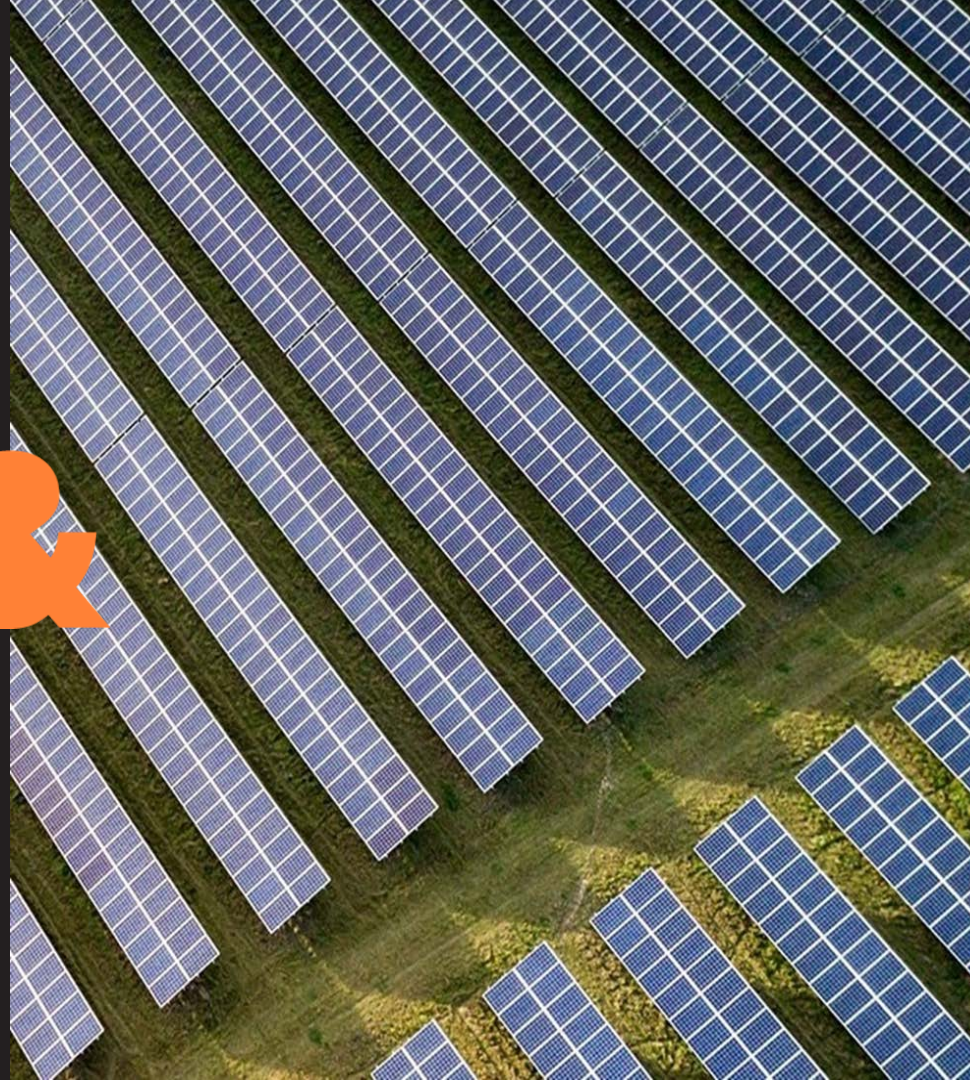


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Specialist Knowledge.
Practical Solutions.

Agriculture Applications of Batteries





Australia's largest solar farm opens in Kerang, in

Su-Kam Farm opens

Ek nayi soch

sherry

When I take over,
Electricity bills take off!

Custom
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
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WAT



Distributors for: Inverter, Ba

**Products available with MNDI sp



250VA Solar Pack
₹13,999/-

VIDEO: Australia's largest solar

Small Energy Efficient Home

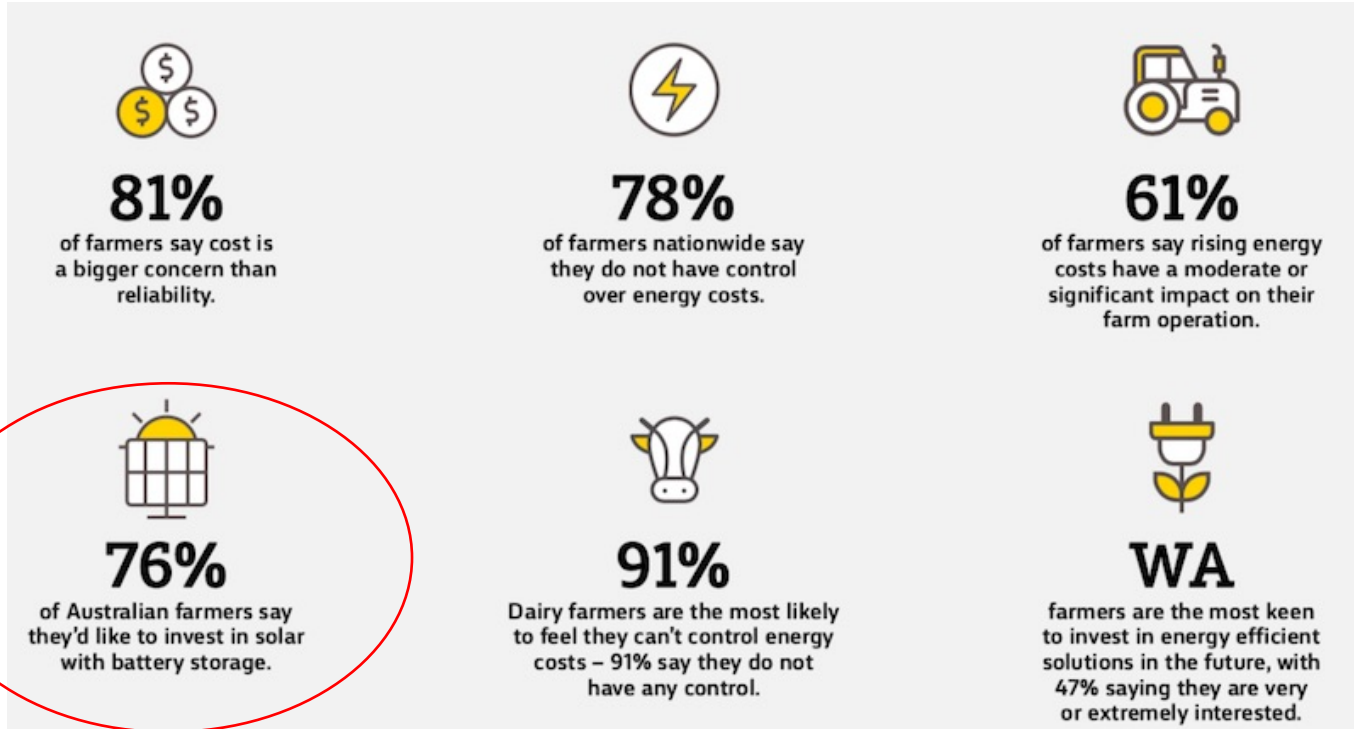
Solar Array	5.2 kWh
Battery Bank	24x 2V, 600Ah Sealed Gel Batteries
Daily Usage	10 kWh
Autonomy	3 Days
Battery Life	12-15 years

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

\$25,249.



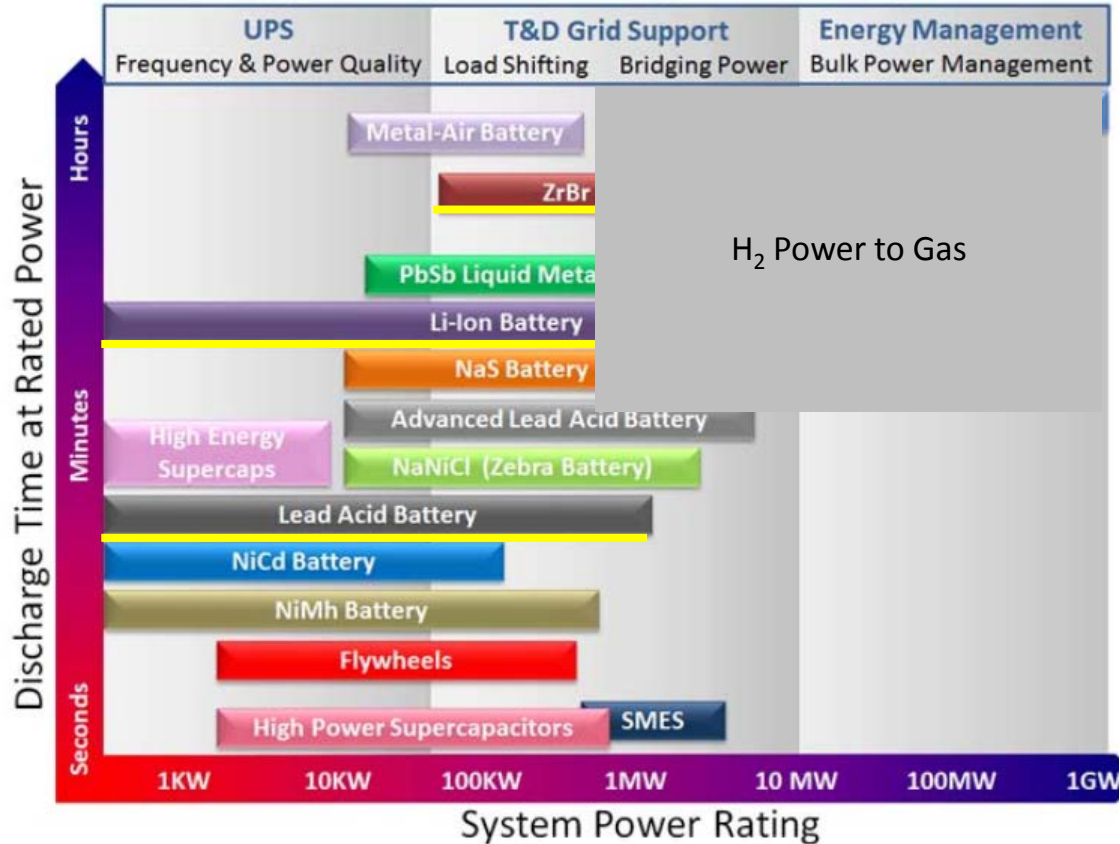
Why talk about batteries





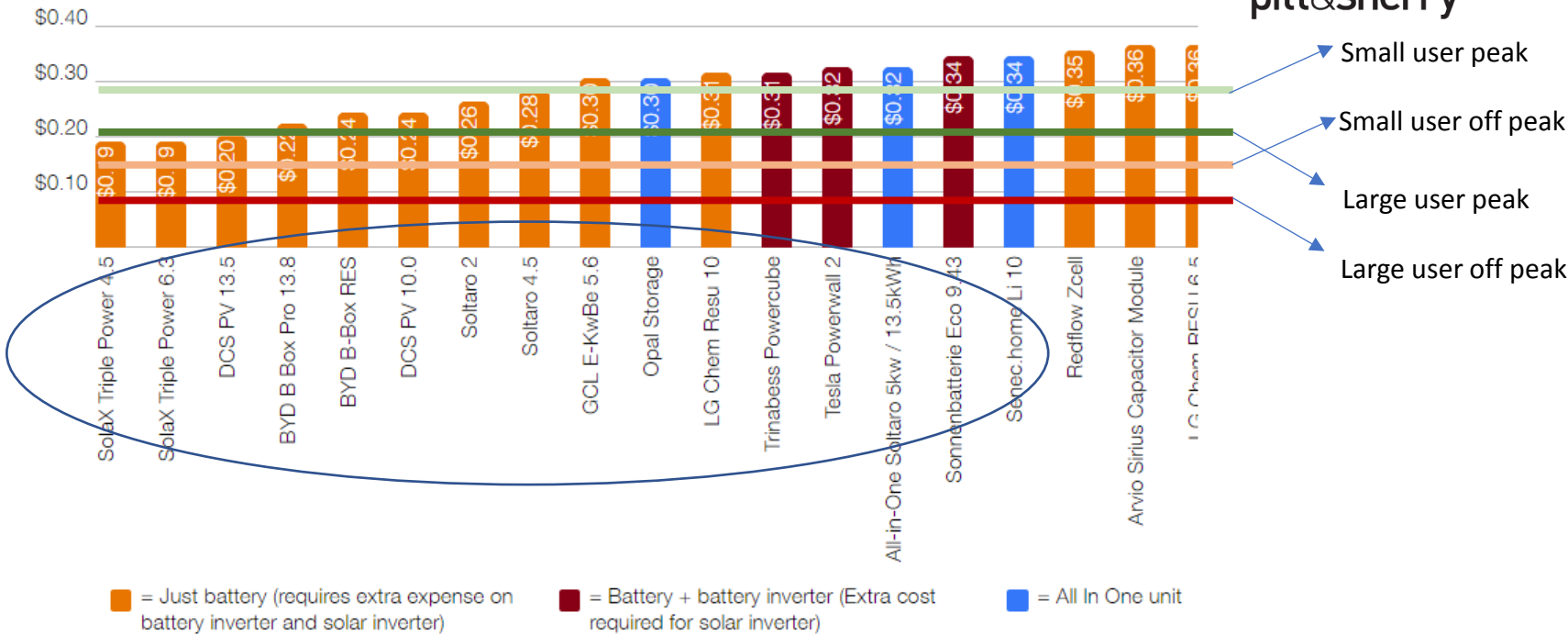
Grid Energy Storage Technologies and Applications

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

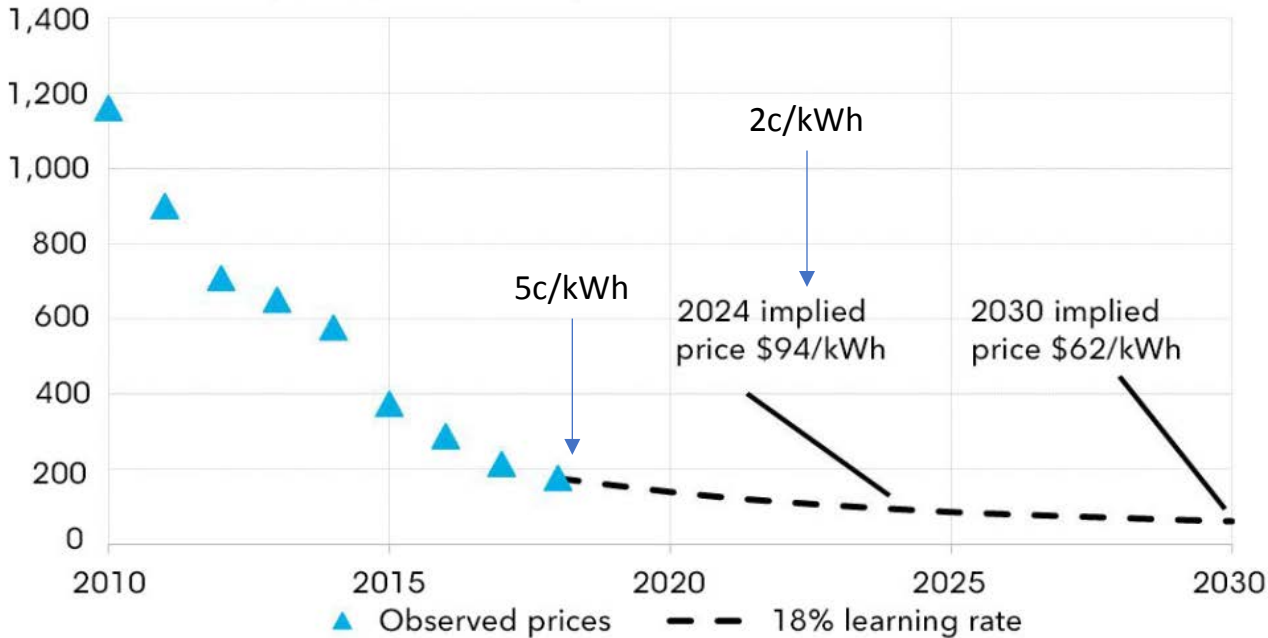
Typical solar PV only is between \$0.06 - \$0.10 per kWh over the warranted period

Updated June 5th 2019



Lithium-ion battery price outlook

Lithium-ion battery pack price (real 2018 \$/kWh)




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
- Victorian dairy moving to solar – misconception that it applies to all dairies
- Moree, NSW – for irrigation and off grid uses mainly
- Better utilisation of renewable energy*



Effective battery applications

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



Effective battery applications

- 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

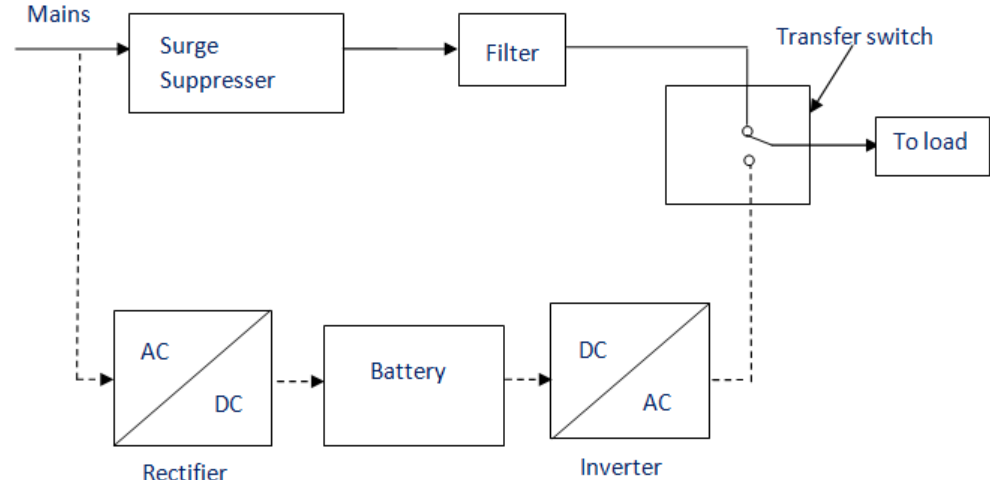
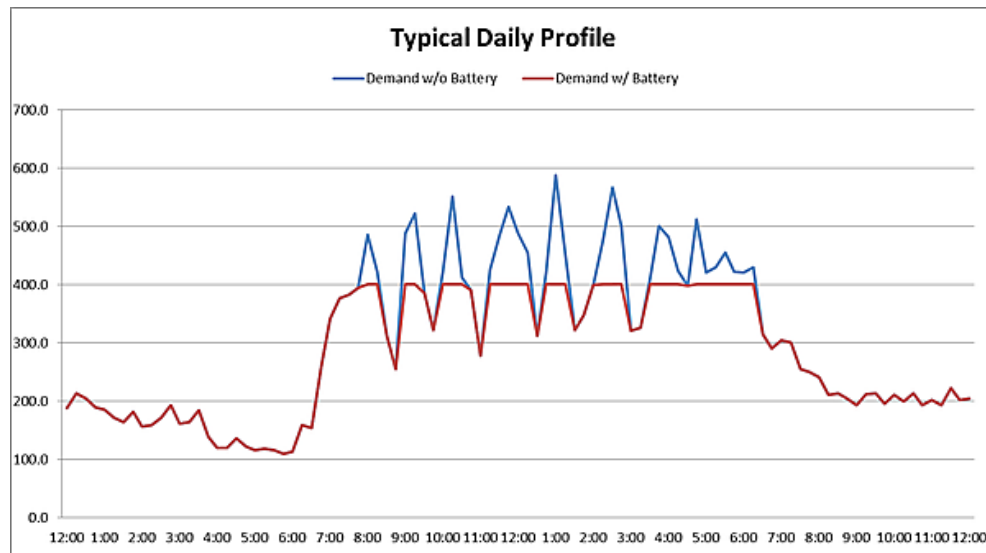


Figure 1

Effective battery applications

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

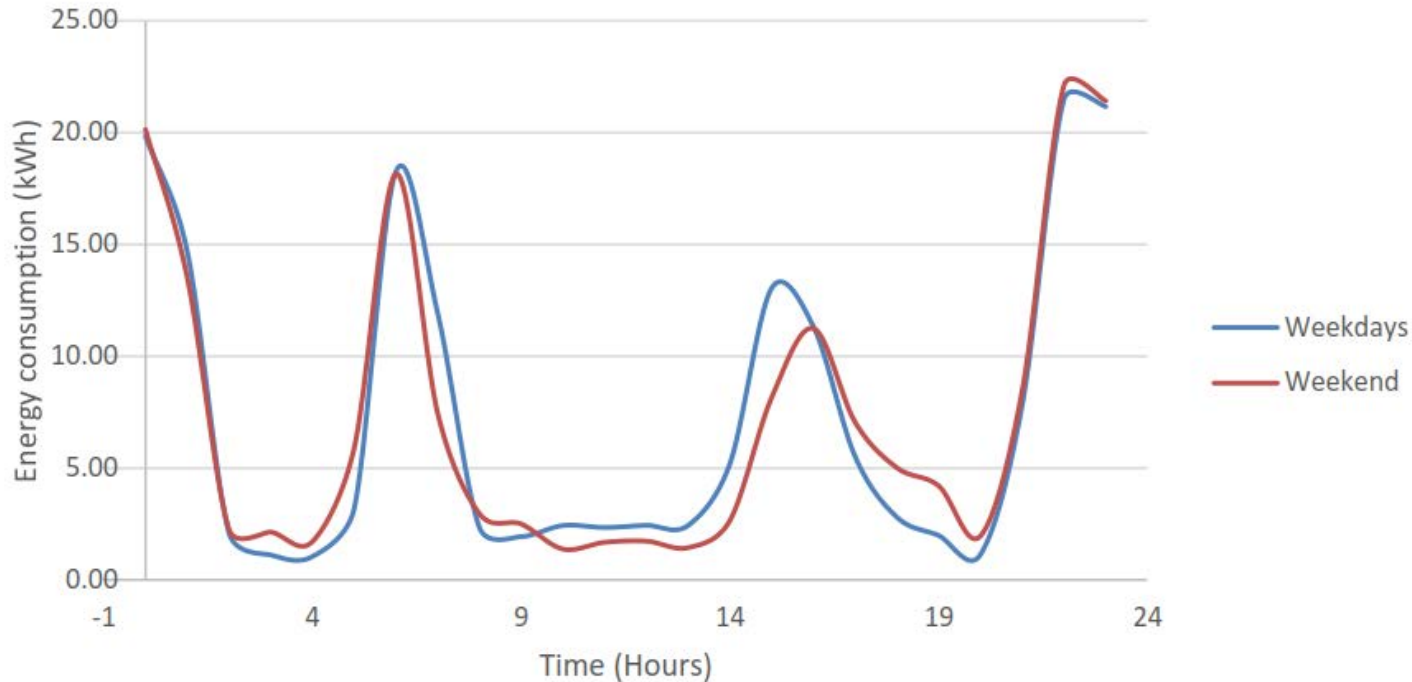
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Uneconomical battery applications

Energy consumption profile - January



Uneconomical battery applications

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- 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?

Specialist knowledge.
Practical solutions.

Through unmatched people,
skills, insights & industry
experience

Your customer experience
with us will be great.

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