Going off grid - is Tesla’s Powerwall revolutionary, or just hype?

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‘Take home’ message

- **Hype**
  - Almost certainly… but Tesla has delivered previously
  - And hype can ‘change’ the market

- **Revolutionary**
  - Perhaps but too soon to tell
  - And even if not revolutionary can start driving fundamental change

- **Off the grid**
  - One possibility of course
  - *But likely to be the most appropriate role in only a few cases, while its value proposition extends to many and varied on-grid roles as well*
Nothing so new about distributed storage

But Tesla has experience, scale and ‘smarts’
Distributed storage has a range of possible value propositions

- Improved customer reliability
- Reduced network peak demand, hence expenditure
- Reduced generation capacity requirements
- Facilitating integration of generation technologies with energy storage challenges – PV, but also ‘baseload’ plant
- Ancillary service provision
- ‘leaving the grid’ options

*But note there are other means of providing all of these services - electricity industry functioning ok without it*
Commercial context supports only some of these value propositions at present

- Improved customer reliability – UPS market well established
- Customer arbitrage around their TOU tariffs and peak demand charges… if they face these
- Increased self-consumption of PV generation paid a low ‘export’ rate, the current context for new household PV

However

- Network value?
- Ancillary services?
- Contingency management?
Numerous and growing assessments of commercial viability in Australia

- Appears to be a highly prospective market

However

- All market forecasts are wrong
- Those that are least wrong sometimes just chance
- But they can still be useful

- Require making assumptions about future commercial context… but this context is changing eg. Network tariffs
Nothing new about the ‘death spiral’?

Argued that rising prices encourage end-users to reduce consumption or even leave, meaning fixed costs have to be recovered from less and less consumption and/or customers. Savings from demand reduction depend critically on energy/network tariffs. End-user departure depends critically on DG technology progress, particularly storage. More of an issue for electricity or gas?
Leaving the grid

- The grid is a very valuable asset – not because we’ve spent a lot of money on it, but because of the service it provides
- Do not under-estimate the costs and challenges of off-grid supply
- *However, distributed storage and generation providing an increasingly attractive option – will discipline network pricing*
Thank you… and questions

Many of our publications are available at:
www.ceem.unsw.edu.au