Residential Battery Systems

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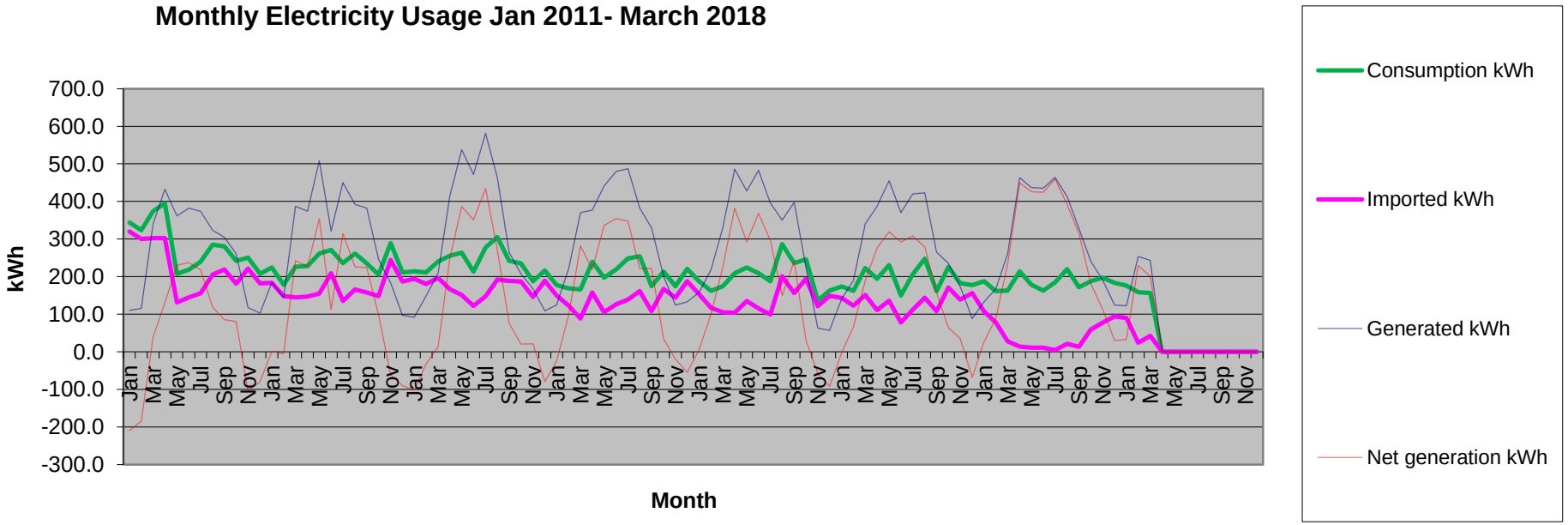
Residential Battery Systems (why?)

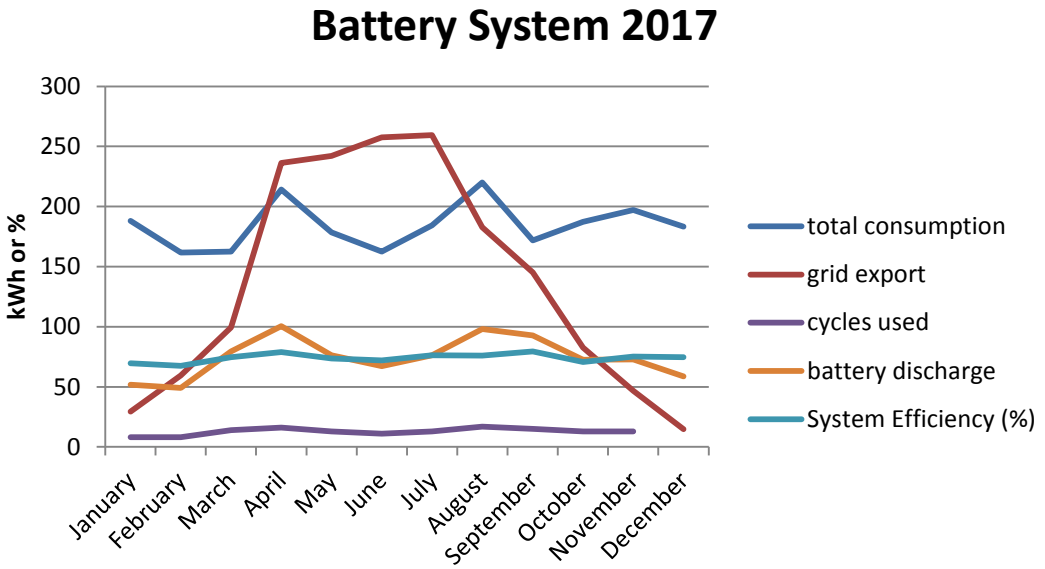
- Carbon Footprint reduction
- Unreliable/limited grid supply
- Interest/hobby

Residential Battery Systems (the journey)

- 100% renewable grid electricity since 2004
- Started measuring in 2008 (~400 kWh/month)
- PV system: 3.78 kWpk in 2011
- Semi automatic battery backup system: 2.5 kWh in 2012
- Installed fully automated battery system: 6 kWh in 2016



Residential Battery Systems (outcomes)



- System met all design objectives (almost bridged the Beast's 10hr power cut)
- Even greater awareness of total electricity consumption (modest 5% reduction)
- 67% decrease in grid import (from ~1.6MWh to 0.5MWh p.a.)
- 44% decrease in grid export (from ~80% to 45% p.a. of PV generation)
- 50% fewer battery cycles than expected (expected 300, actual 150 p.a.)
- System efficiency fluctuations different from expected (75% average)
- Many other lessons learnt, including the need for an efficient constant low power source

Residential Battery Systems (performance)

- Daily (best/worst) & Monthly profiles