

The Role of Third Party Owned Distributed Energy Resources in Building an Efficient Grid

A solution for New Zealand's
electricity future.

December 2, 2020



Our mission



Accelerate New Zealand's transition to be 100% renewable and lower the cost of energy for Kiwis.



**100% RENEWABLE
ENERGY**



**PROVIDE CHEAPER
CLEANER ENERGY
OPTIONS**



**REMOVE THE COST
BARRIER**



**MAKE THE
TECHNOLOGY SIMPLE**

The solarZero service



4500 + customers



4100+ with battery



400 solar only

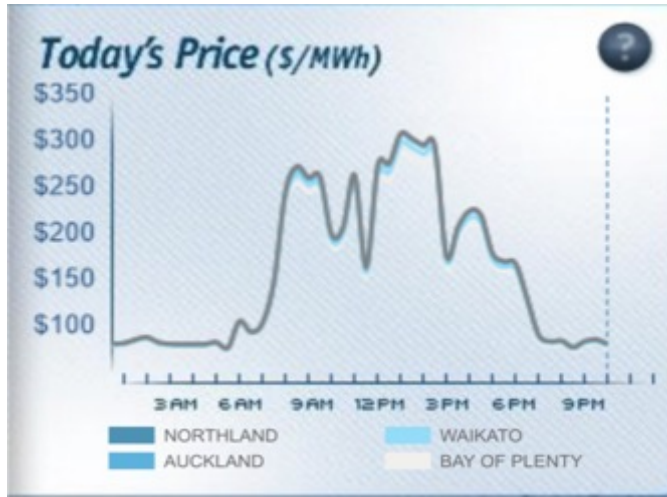
OUR SERVICE

- Solar panels, battery system, advances energy monitoring and control platform (Hot water, EV's..)
- We own, manage and maintain the hardware – including battery swap
- Grid energy and e-store to drive energy efficiency

OUR VALUE

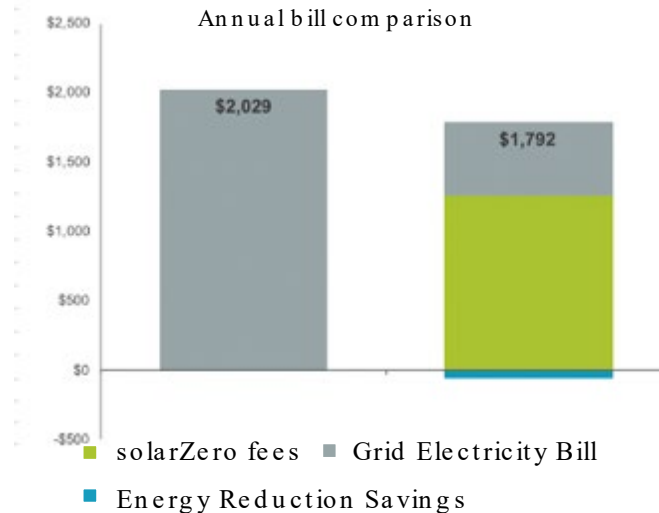
- Typical bill savings of 10-30%
- Back-up during outages
- Fix energy cost for 20 years
- Savings across term guaranteed

How do we save our customers money?

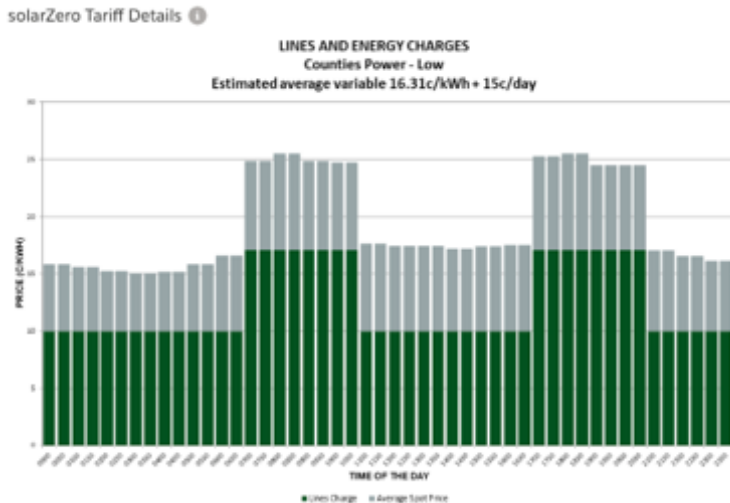


Outputs			
Location and Zoning			
Location	Auckland Central		
Network	Vector (Auckland)		
Recommended solarZero+ Battery Package			
Package	Size (kWp)	Area (m ²)	Output (kWh/yr)
totara	2.655	15	3847
Energy Use Comparison			

⚡ Avoided grid energy



💰 Price cap on net energy cost



🕒 Time of Use line charges

Estimated savings in the first year of **\$230 or 12%**
Estimated savings over 20 years of **\$17,500 or 31%**

solarZero energy platform



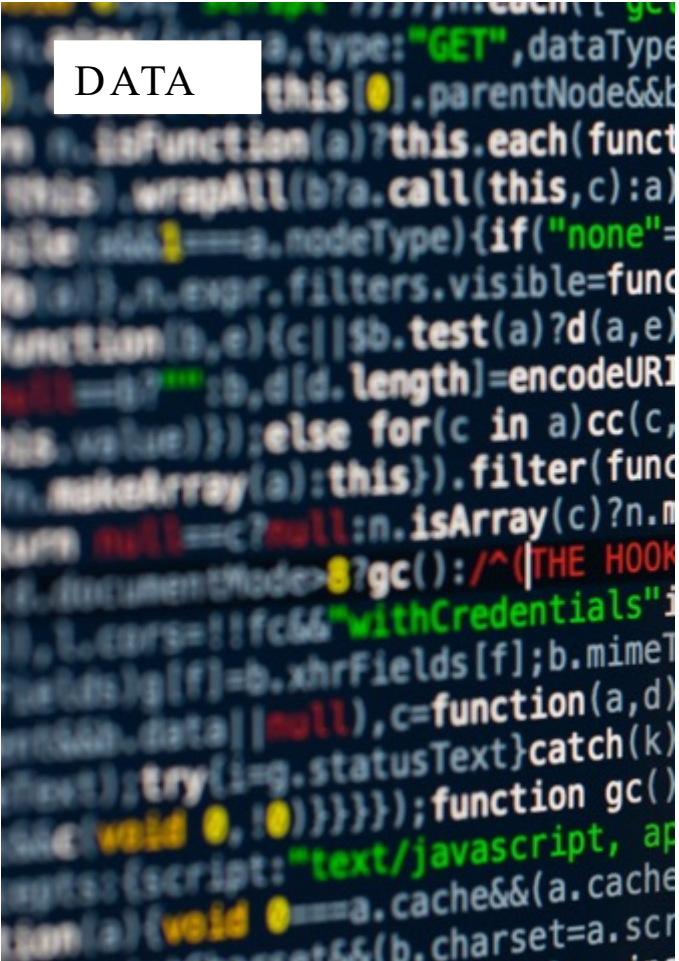
SOLAR PANELS



MONITORING



SMART BATTERY

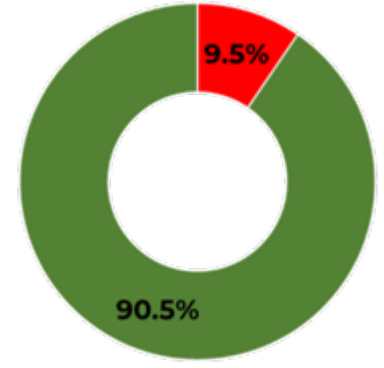
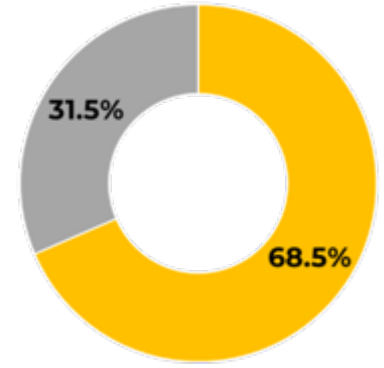
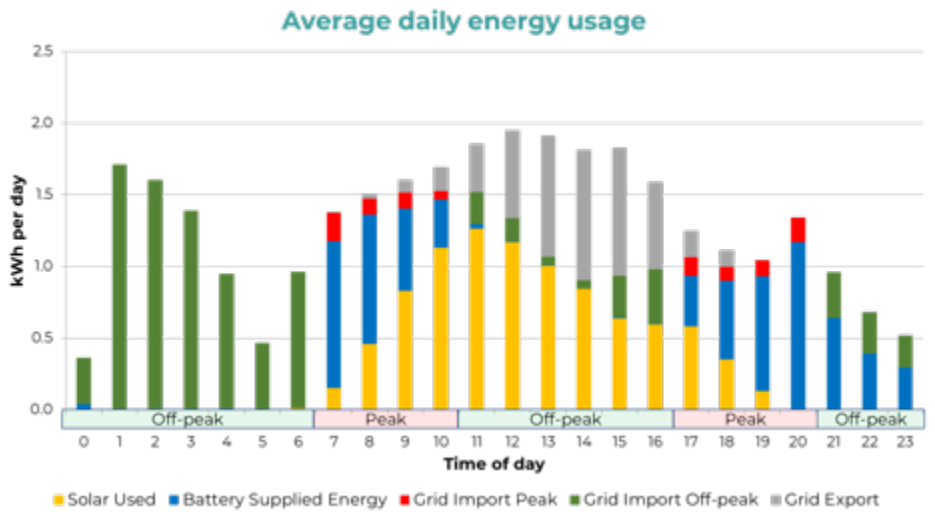


DATA

Results – A day in the life of a solarZero customer



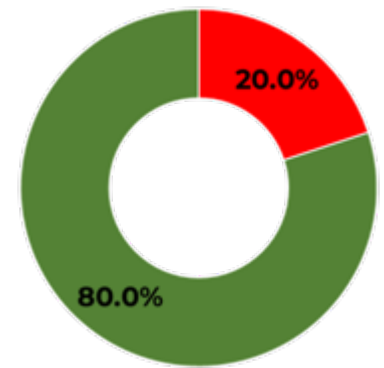
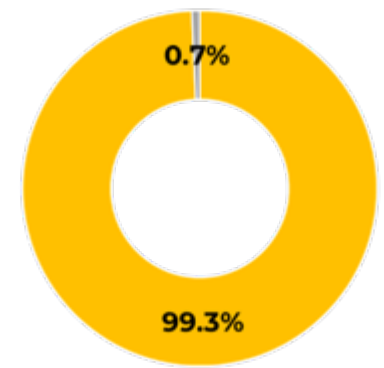
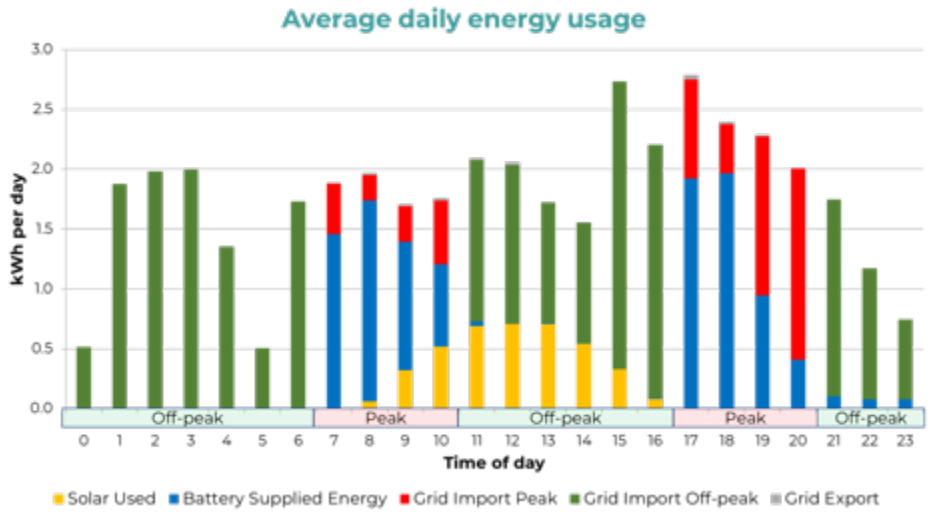
Summer



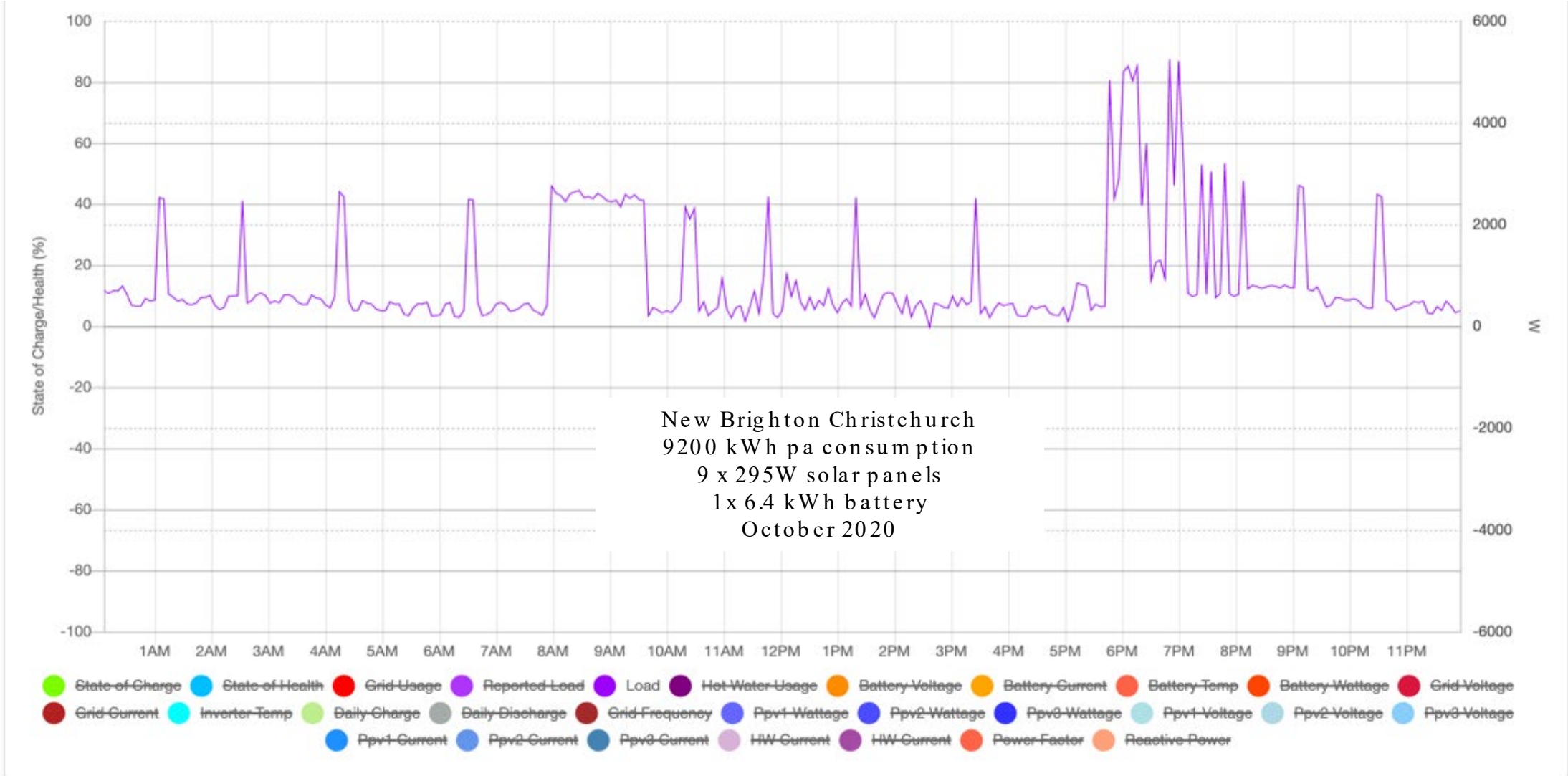
Total Solar Used
Total Solar Exported

Grid Import Peak
Grid Import Off-peak

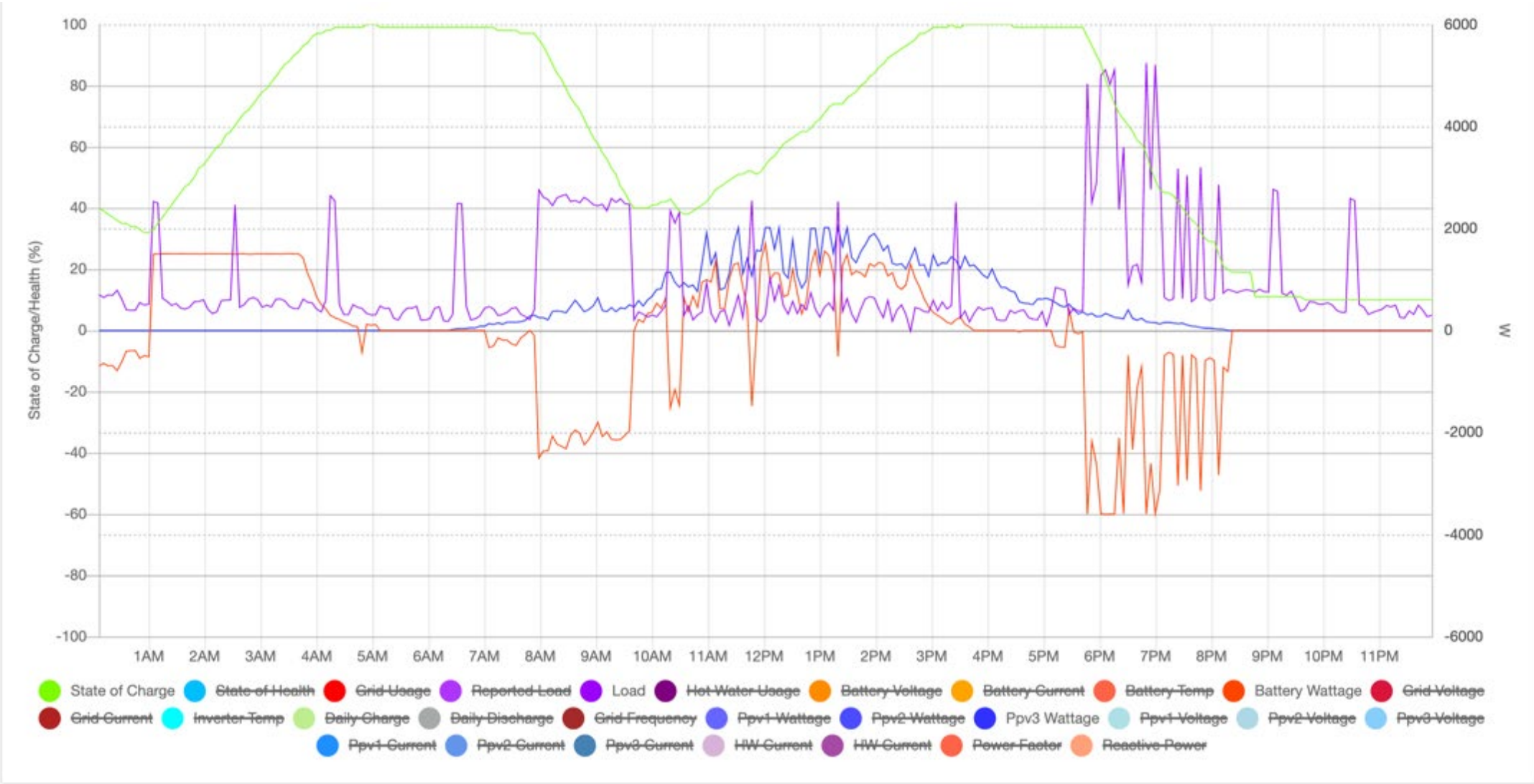
Winter



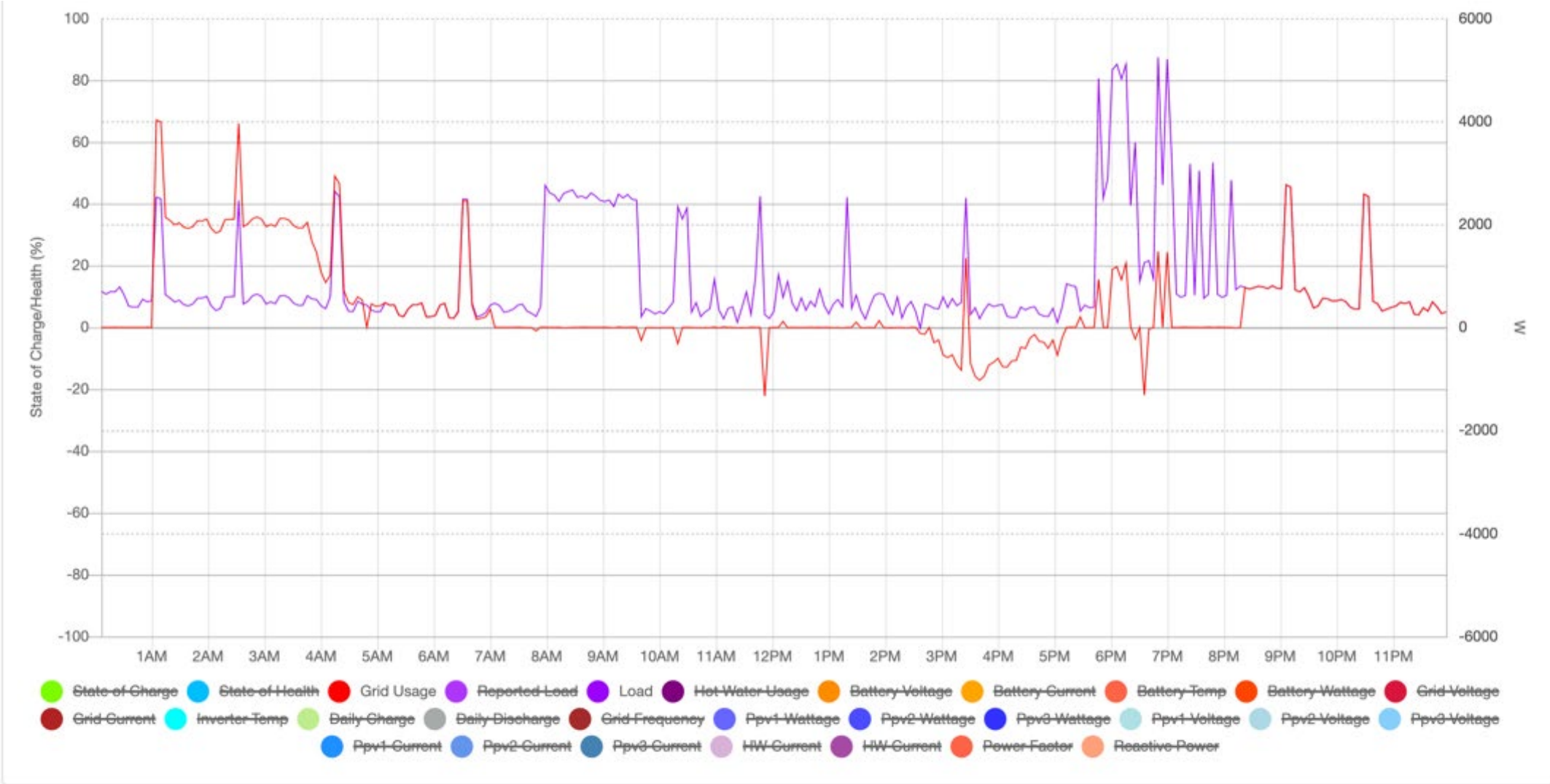
solarZero's effect on our customer's energy profile



solarZero's effect on our customer's energy profile





solarZero's effect on our customer's energy profile




When the lights *(don't)* go out



 Alert 

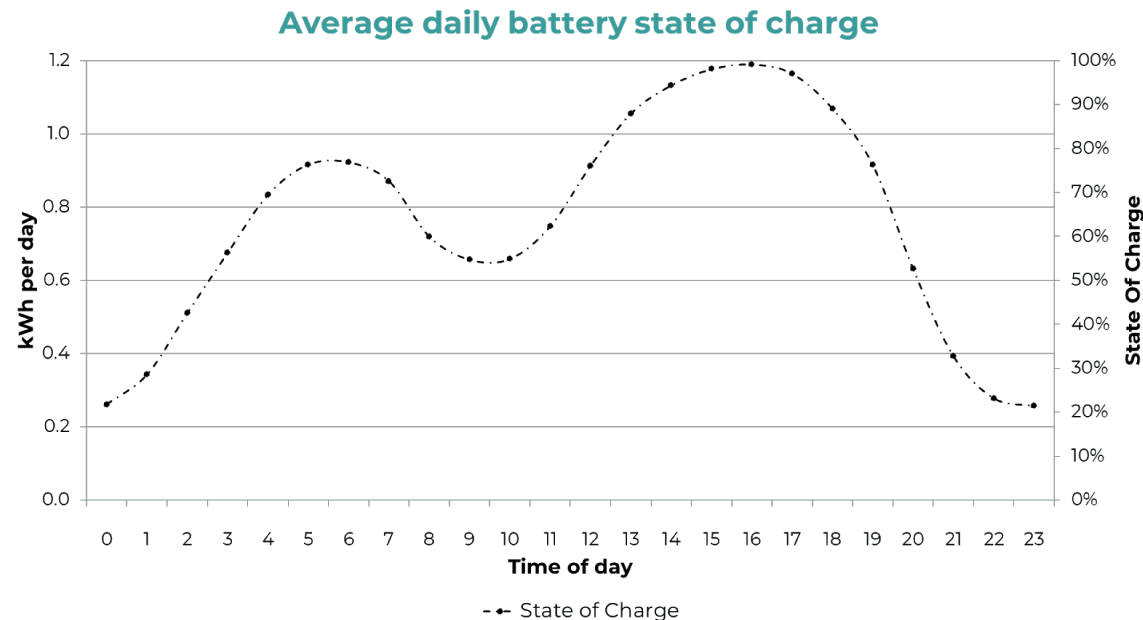
Grid Power Outage



32 hours & 0 minutes
at
0.2 kW

It looks like there is a power cut. Don't worry, you're running on battery power. Some tips to help you get through this:

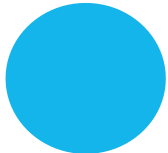
1. **Conserve your battery.** Turn off things you don't need.
2. Keep an eye on your remaining battery capacity.
3. Keep your power demand down so as not to exceed the capacity of the inverter.
4. You can use more when it's sunny and your battery is charging.



“On Tuesday morning the power went off due to a tree further up the road. No big deal. Made little difference to us as the lights we needed worked along with our TV.”
- Malcolm Langley

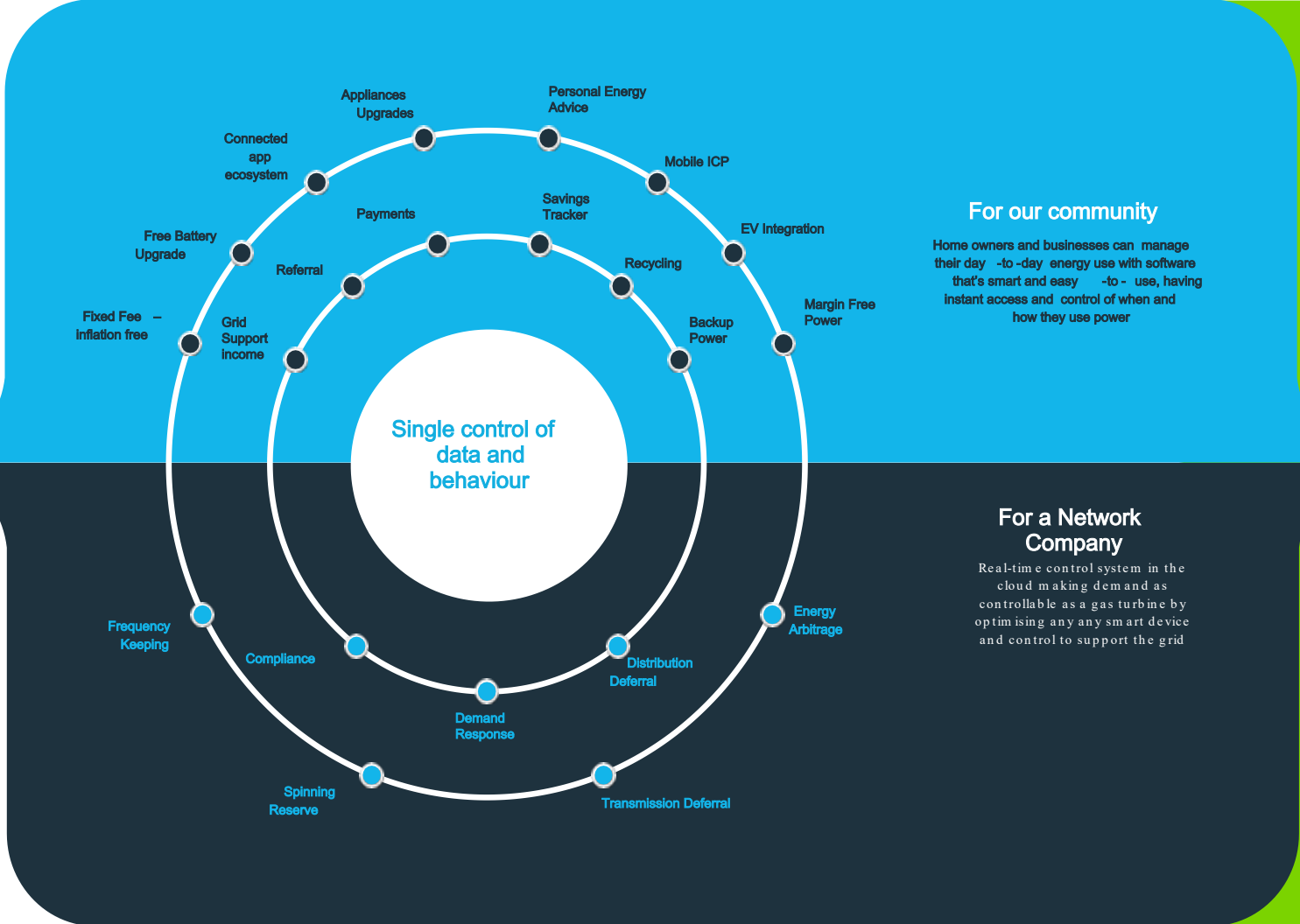
“Once more the power went out in our area last night but we continued to cook dinner, watch movies, make a cuppa. No disruption to our lives what so ever.”
- Adrienne Wilde

solarZero energy platform



solarZero Platform

Leveraging machine learning and artificial intelligence



For our community

Home owners and businesses can manage their day -to -day energy use with software that's smart and easy -to - use, having instant access and control of when and how they use power

For a Network Company

Real-time control system in the cloud making demand as controllable as a gas turbine by optimising any smart device and control to support the grid

Growth drivers

Drive to become 100% renewable for energy



Rising Costs of conventional Power



Doubling of demand with EV and gas/coal replacement



Growth in IoT appliances



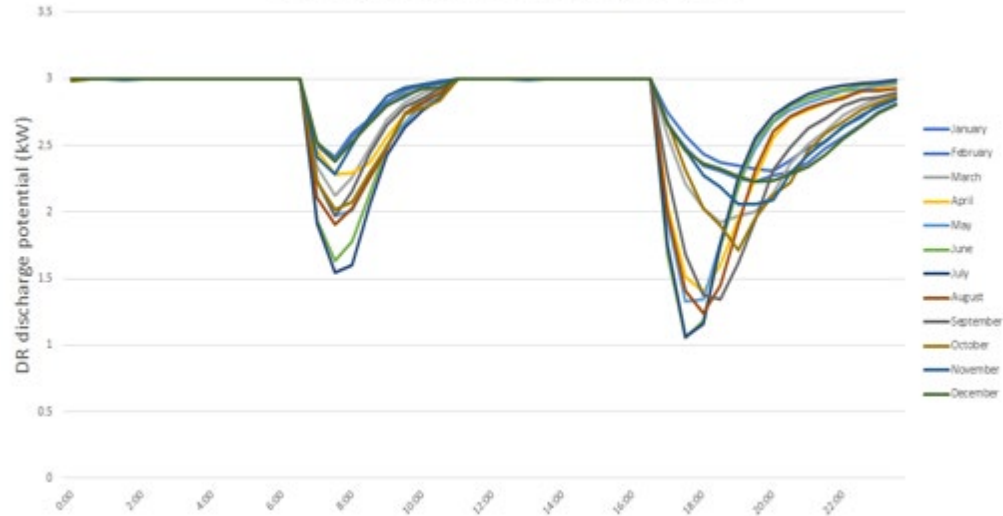
Improving Economics of solar and battery storage



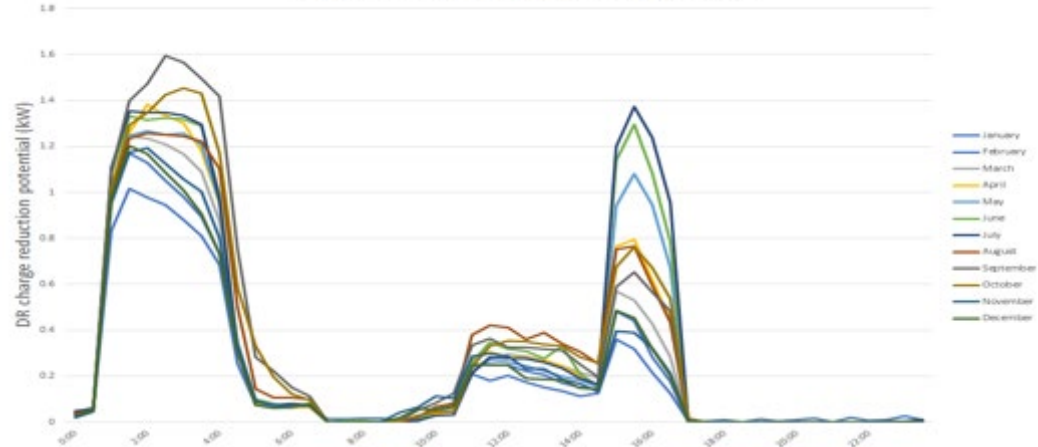
Demand Response



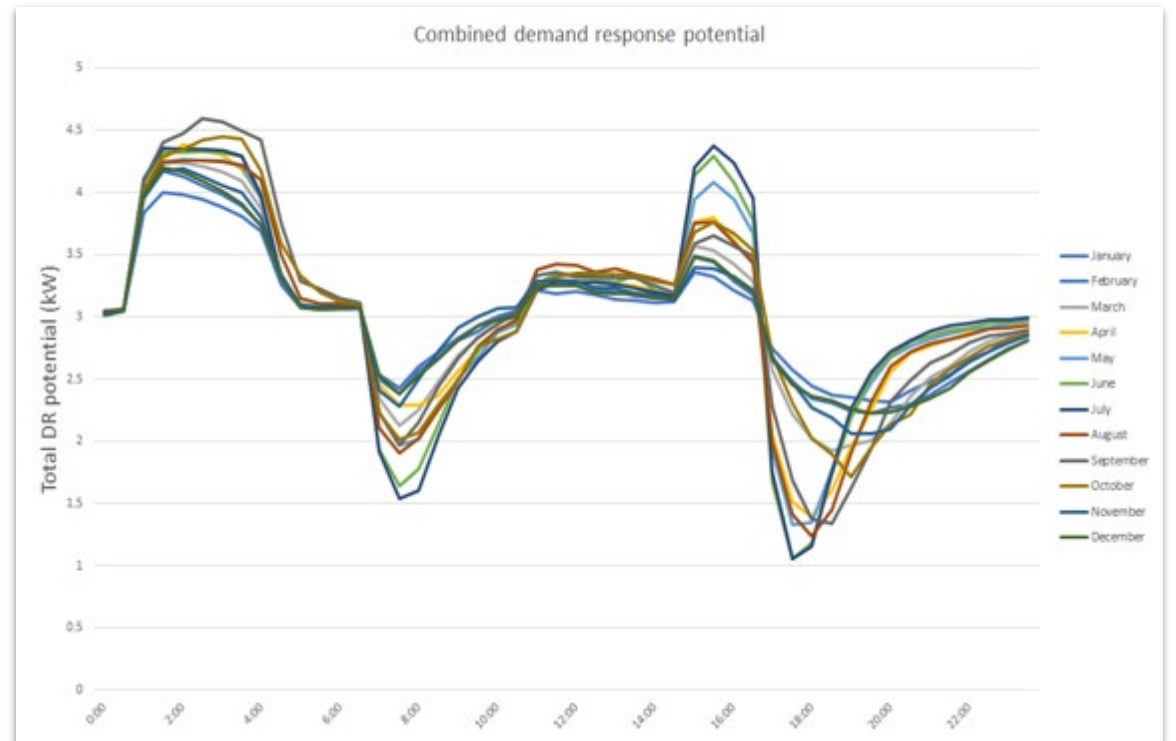
Demand response potential from discharging more power



Demand response potential from charging less power



Combined demand response potential



Demand Response



Add new schedule

Application type: Charge

Start Date: 2020-10-13 Start Time: 15:20

End Date: 2020-10-13 End Time: 15:50

Per-ESS Power setting (kW): 2.0

Max Power setting for each selected ESS is 3 kW

Add sites to execute application

0.00 kWh / 0 kW Selected / Requested

Site	Network	GXP	Region
Select one			
Auckland (5190.3999999999705kWh. 739 sites)			
Christchurch (3136.0000000000286kWh. 386 sites)			
Coromandel (38.4kWh. 6 sites)			
Dunedin (479.999999999993kWh. 77 sites)			
Gisborne (351.99999999998kWh. 56 sites)			
Hamilton (1971.2000000000105kWh. 310 sites)			
Napier-Hastings (851.19999999998kWh. 136 sites)			
Nelson (998.399999999975kWh. 158 sites)			
New Plymouth (735.999999999984kWh. 117 sites)			
Palmerston North (793.599999999982kWh. 127 sites)			
Rotorua (441.5999999999945kWh. 69 sites)			
Tauranga (1203.199999999998kWh. 190 sites)			
Wairarapa (364.799999999997kWh. 58 sites)			
Wellington (1465.600000000035kWh. 234 sites)			
Whanganui (537.599999999991kWh. 85 sites)			
Whangarei (1273.600000000008kWh. 201 sites)			

Cancel Review

Schedule Info

Application	Power demand Requested (kW)
Dis-Charge	2.5

No	Reference ID	Start Date	End Date	Status	Delete
1	HIN0331	2020-10-07 17:00:00	2020-10-07 19:00:00	Scheduled	<input type="checkbox"/>

Back Delete

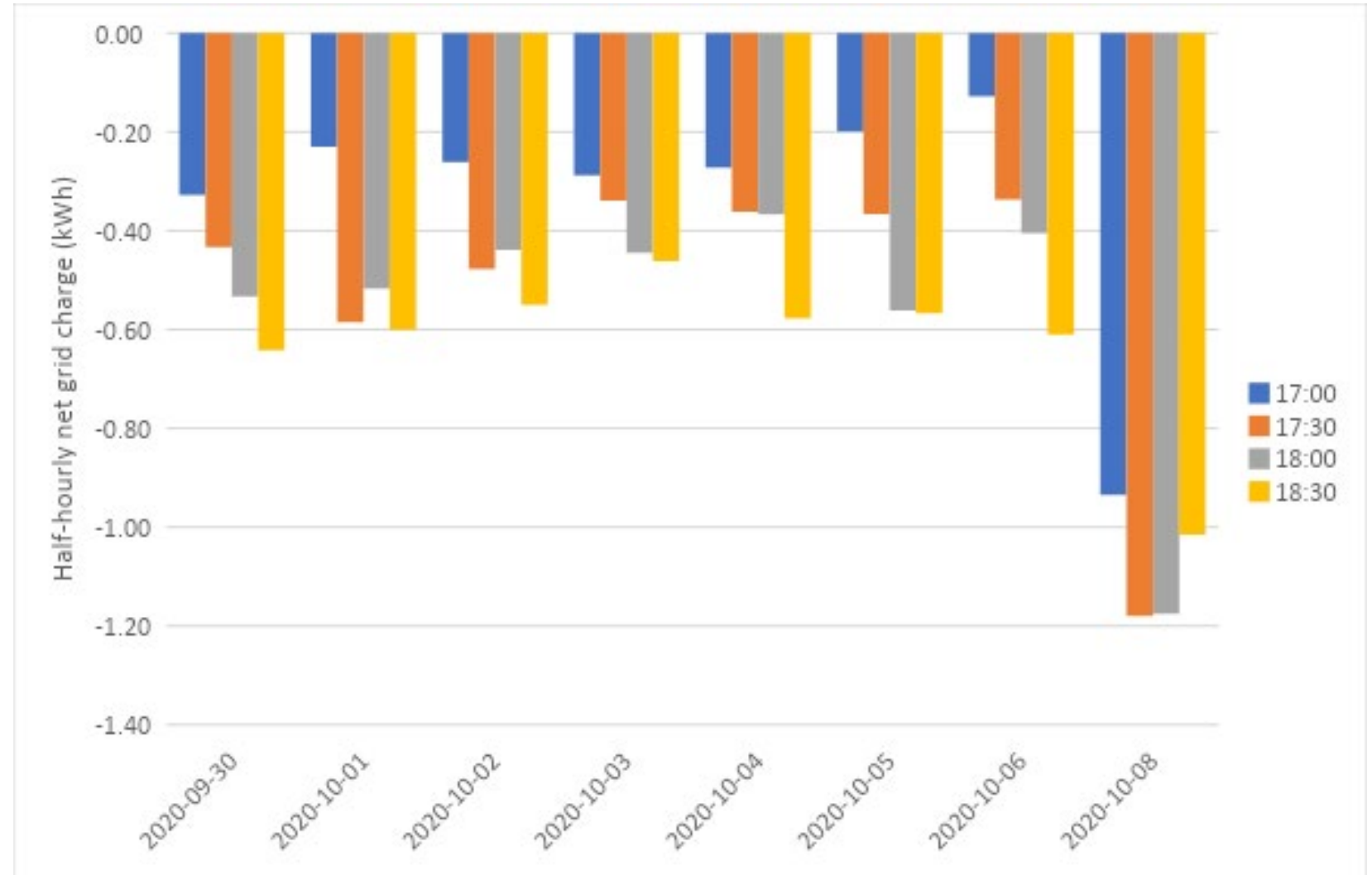
Demand Response – Real Event (Transpower)



Evening peak

No event pre-notice

Battery discharge on top of normal discharge offsetting load



The Key Opportunities



- Targeted deployment of distributed battery storage to avoid or defer network investments.
- National and local demand response services
- Use of batteries in reserves markets (fast response)
- Other network services – frequency keeping, voltage support etc.
- Data – 5-minute load, solar, hot water load, voltage ...



The background features a network of thin, teal-colored lines connecting several points. Two of these points are highlighted with bright, glowing teal circles, creating a sense of focus or activity within the network.

Thank you