



TESLA

**Power Plant Research Advisory Committee
Energy Storage Working Group Meeting**

October 26, 2017

A SUSTAINABLE FUTURE



Clean Electricity



Flexible, Resilient Grid



Sustainable Transport

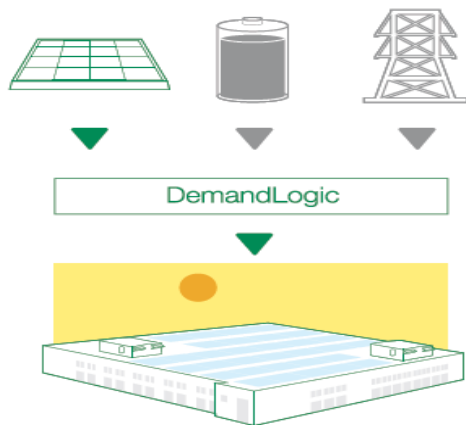
FOR INDIVIDUAL CUSTOMERS

RESIDENTIAL

Power through any outage

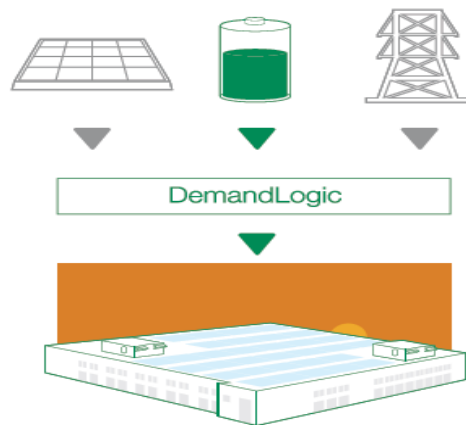


DEMANDLOGIC FOR BUSINESSES



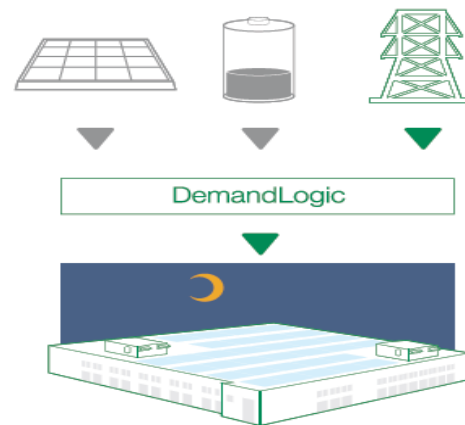
12 PM

Your system is at full production, charging your battery and reducing your need for utility power.



5 PM

As solar production decreases, the battery is intelligently discharged to reduce peak demand charges.

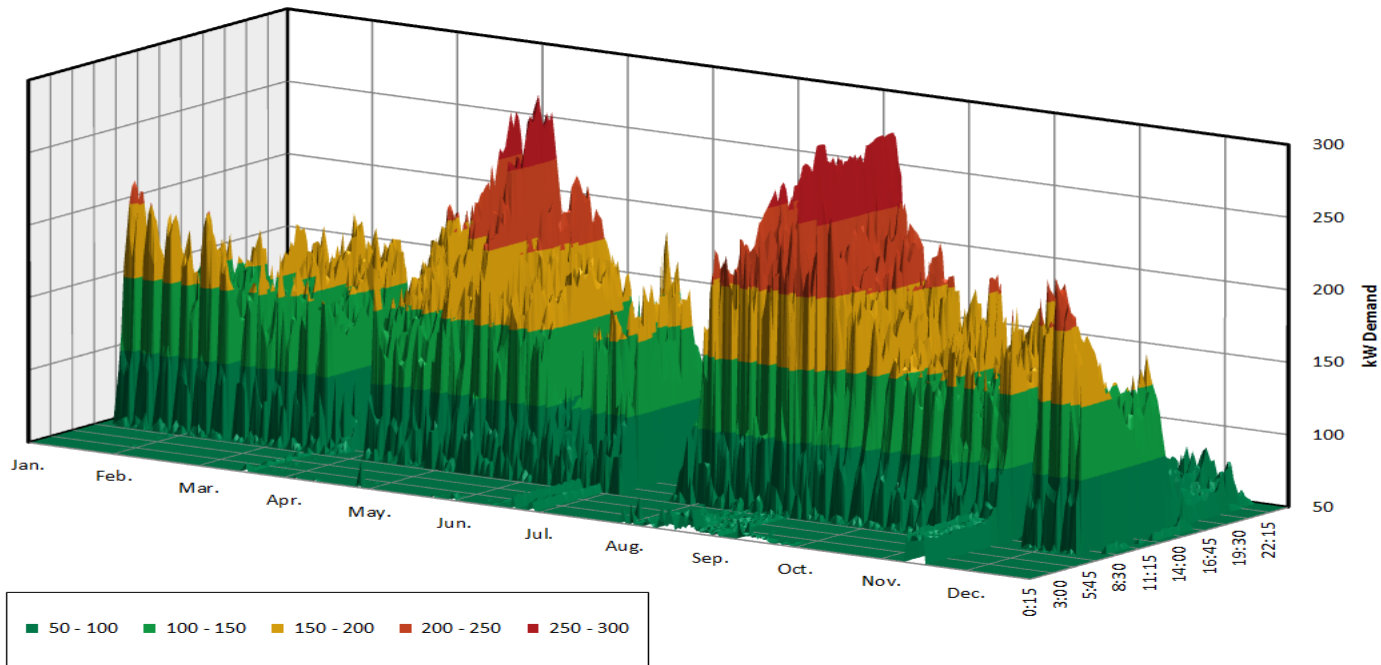


10 PM

You draw power from the utility company at night at lower off-peak demand rates.

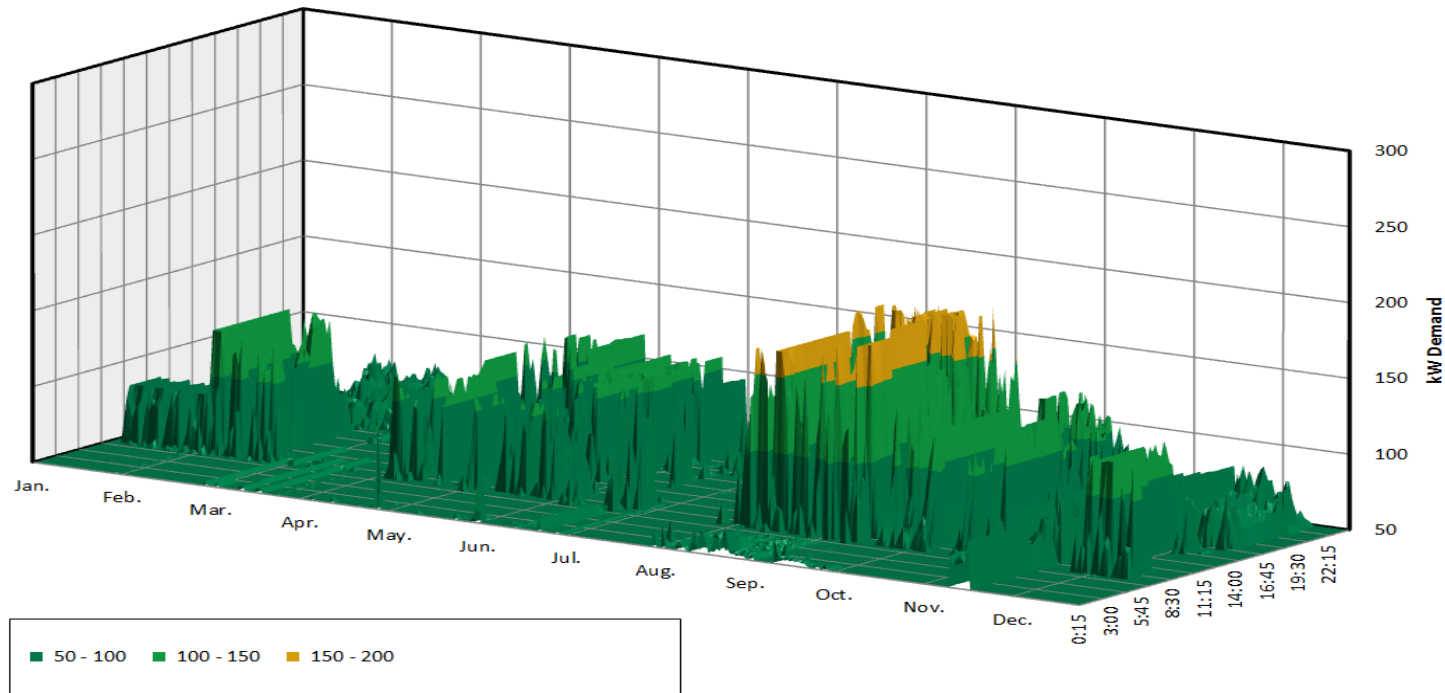
K-12 – ORIGINAL LOAD PROFILE

SCE Ratepayer - Example School - Original Load Profile



K-12 - AFTER DEMAND LOGIC

SCE Ratepayer - Example School - Load Profile After PV + DemandLogic



FOR THE SYSTEM

PEAK LOAD DRIVES COSTS

State of Charge Report: The top 10% of hours accounted for 40% of annual spend.

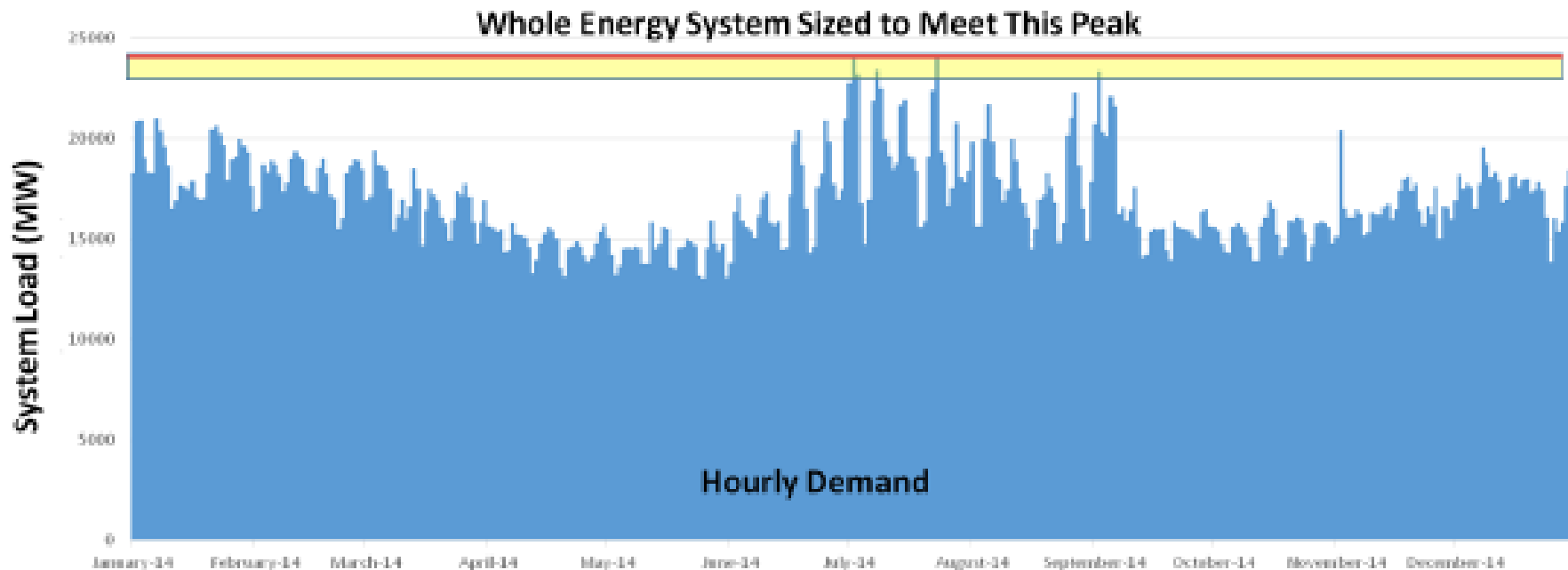


Figure 2: The whole electricity system is sized to meet peak demand



AGGREGATED RESIDENTIAL

Customer

Green Mountain Power

Location

Homes across Vermont

Project Size

500 Powerwalls

Applications

Backup power

Peak shaving

Reduce T&D costs

Grid stability

Commissioned

2016 / 2017

GMP RESIDENTIAL STORAGE PILOT PROGRAM

- Aggregate residential batteries and use to offset system costs:
 - Offset Forward Capacity Market (FCM) Peaks
 - Offset Transmission (Regional Network Service, RNS) Peak
 - Perform some energy arbitrage
- Improve CAIDI (duration) and CAIFI (frequency) metrics for participating customers

GMP RESIDENTIAL STORAGE PROGRAM

	Option 1	Option 2	Option 3
GMP Usage Level	None	75% FCM Peaks, 50% RNS Peaks	100% FCM Peaks, 75% RNS Peaks, Energy Arbitrage
System Savings/ Powerwall	None	\$31.76/month	\$50.70/month
Customer Cost	\$6,501	\$6,501	\$37.50/month
Bill Credit	None	\$31.76/month	Included in monthly payment
Owner	Customer	Customer	GMP

GMP COMPREHENSIVE ENERGY HOME SOLUTION

- Tesla Powerwall 2 batteries and GridLogic software platform
- Use stored energy to drive down costs, especially during peak
- Estimated reduction of up to 10 MW peak load
 - Equivalent to taking 7,500 homes off the grid
- Deploy up to 2,000 Powerwalls
 - Customers will receive backup power
 - \$15/month or \$1,500 one-time fee

QUESTIONS

Thank you.

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