



T E S L A

E N E R G Y

NY DPS Energy Storage Workshop

May 26, 2016

TESLA ENERGY PRODUCTS

POWERWALL

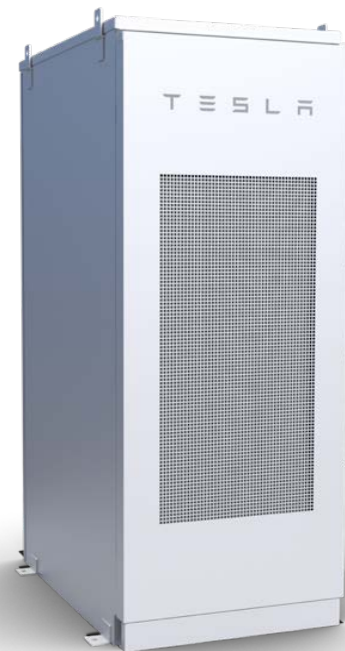
TESLA HOME BATTERY

6.4 kWh

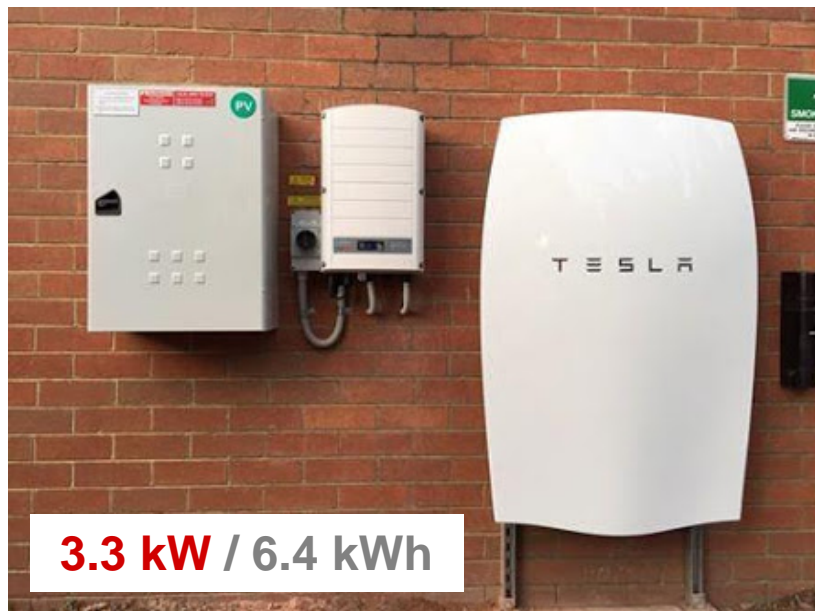
**POWERPACK**

TESLA COMMERCIAL BATTERY

100 kWh +



RESIDENTIAL INSTALLATIONS

**GREEN MOUNTAIN POWER RESIDENTIAL STORAGE PROGRAM**

500 Powerwall deployments at customer homes

Utility value from system peak reduction; customer value from solar self-consumption and back-up power

COMMERCIAL BUILDING INSTALLATIONS

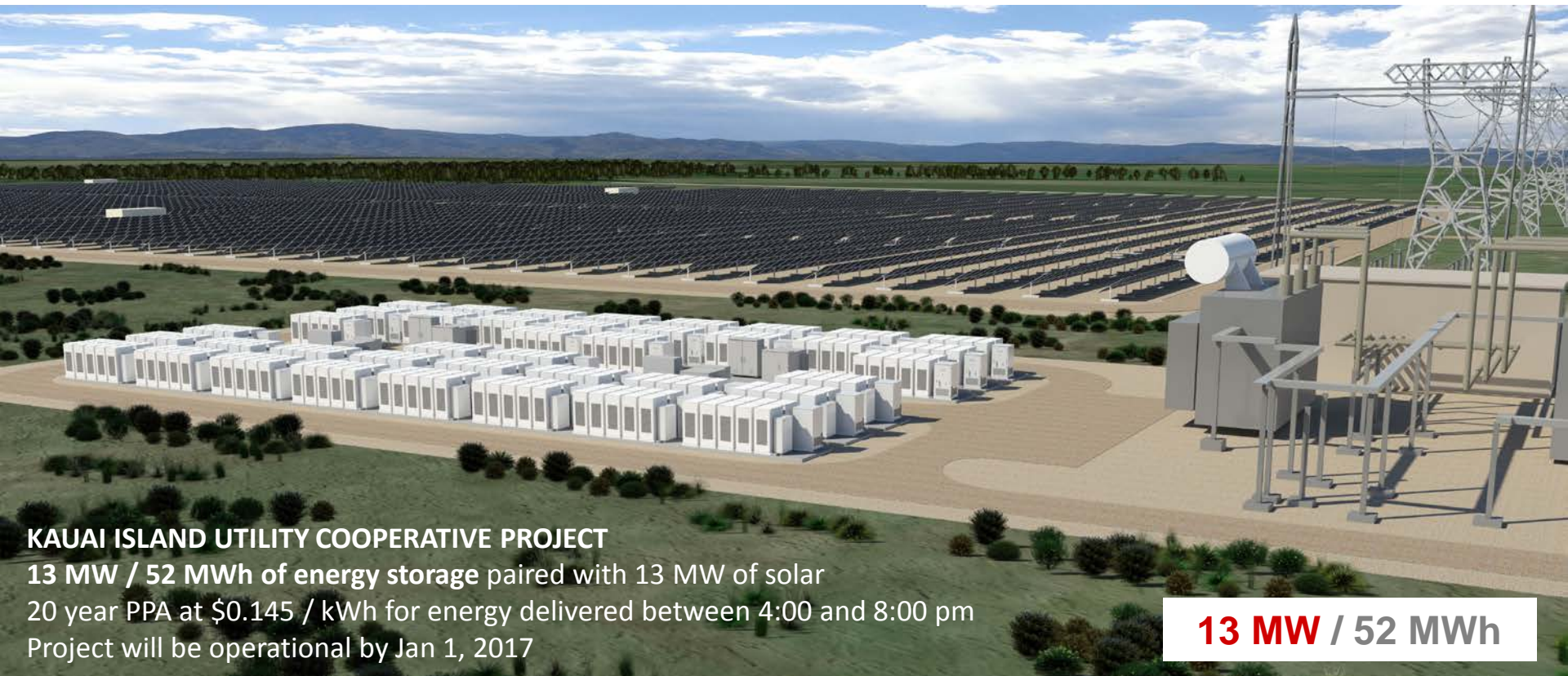


40+ COMMERCIAL BUILDING DEPLOYMENTS IN THE US

demand response provision; demand charge reduction; time-of-use rate arbitrage

2 MW / 4 MWh

UTILITY-SCALE INSTALLATIONS

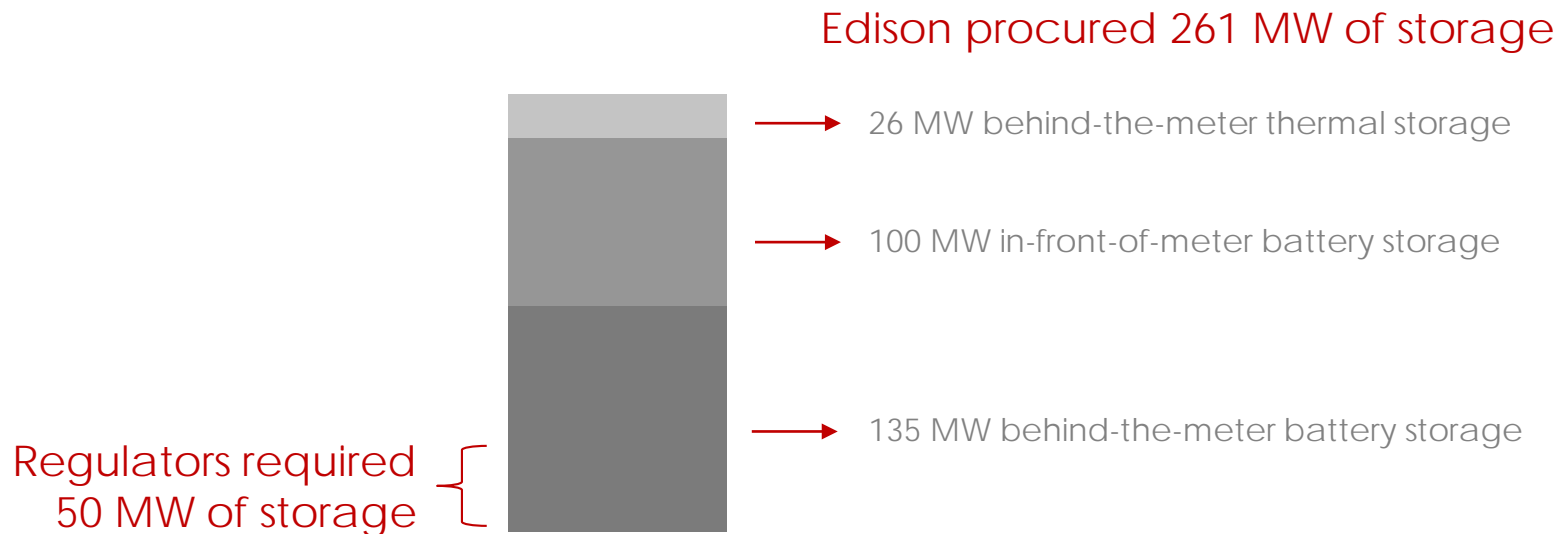
**KAUAI ISLAND UTILITY COOPERATIVE PROJECT**

13 MW / 52 MWh of energy storage paired with 13 MW of solar
20 year PPA at \$0.145 / kWh for energy delivered between 4:00 and 8:00 pm
Project will be operational by Jan 1, 2017

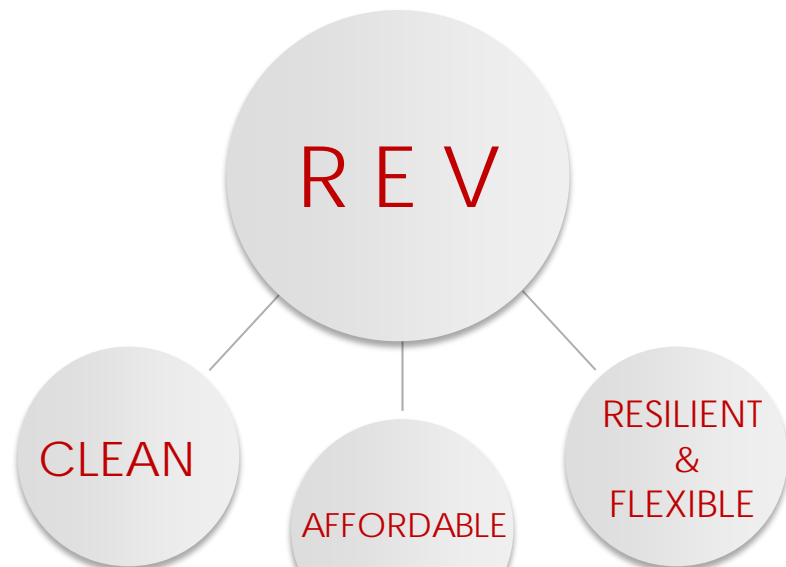
13 MW / 52 MWh

CASE STUDY: SO CAL EDISON RFO

In 2013, Southern California Edison solicited 2,000 MW of new generation capacity in its "Local Capacity Requirements" RFO



SYSTEMIC CHANGE: REV, CES, & STORAGE



- 50x30
- 40x30
- CES
- LMP+D+E

- System & capital efficiency
- LI assistance & inclusion
- Enabling bill management

- NY PRIZE
- DERs part of grid management

- Storage is a foundational asset that enables REV's clean, affordable, resilient, and flexible system
- Integrating storage into planning, as advocated in DSIP Guidance, is best for system development and customers

BARRIERS TO STORAGE DEPLOYMENT

Storage is economical now but utility processes and tariffs must be updated to contemplate storage:

- Planning
- Valuation
- Procurement
- Operations
- Rate design
- Interconnection

The first energy storage projects in a region have higher development costs because significant learning is required

POLICY TO CATALYZE STORAGE DEPLOYMENT

- All utility planning, procurement, operations, and interconnection **procedures should be updated to consider energy storage**
- Policymakers should establish escalating **near-term and medium-term storage procurement targets** for the state's utilities
- A **cost-effectiveness provision** can allow utilities to defer their storage procurement if somehow they cannot find cost-effective projects
 - In California, after 2.5 years and more than 500 MW of storage procured, none of the investor-owned utilities have deferred their storage procurement targets

QUESTIONS / DISCUSSION

