

The background of the slide features a dark gray field filled with a pattern of small, light gray dots. A thin, light gray diagonal line runs from the bottom left towards the top right, dividing the slide into two triangular sections. The dots are more densely packed in the upper right section and become sparser towards the bottom left.

# Reinventing the grid with behind-the-meter storage

Will Fadrhonc, Grid Solutions, Stem, Inc.

**stem**

© 2014 Stem, Inc. Proprietary and Confidential

# Stem builds virtual power plants

Aggregating distributed storage is the fastest, cheapest, and cleanest way to solve grid-level capacity challenges.

## Company highlights

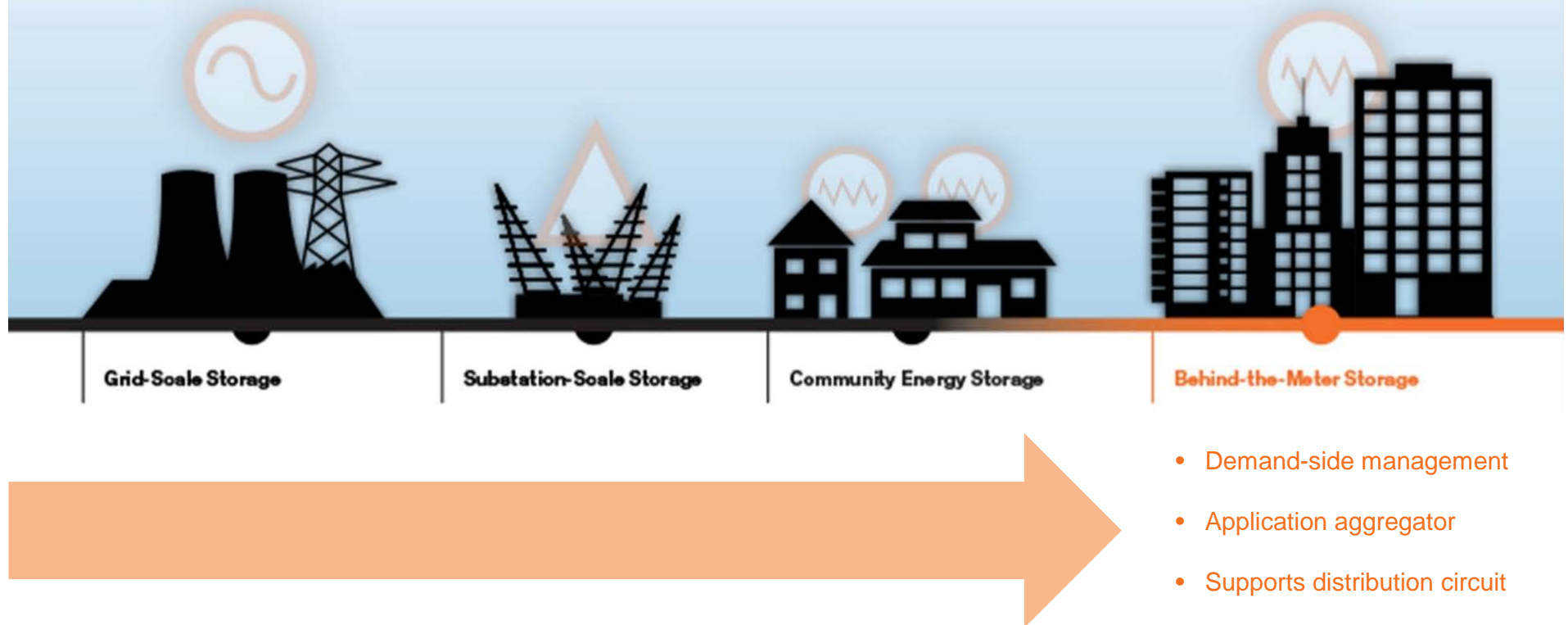
- 30+ systems installed
- 9.0+ MW capacity signed
- Industry's first storage finance agreement
- Certified per UL standards

36 kW PowerStore | San Jose, California  
Light industrial

**stem**



# Energy storage value chain



# Why behind-the-meter?

Located in load centers

→relieves local capacity constraints

Cheaper, faster, safer

→no grid upgrades required

→simple interconnection & permitting

→low voltage means less risk

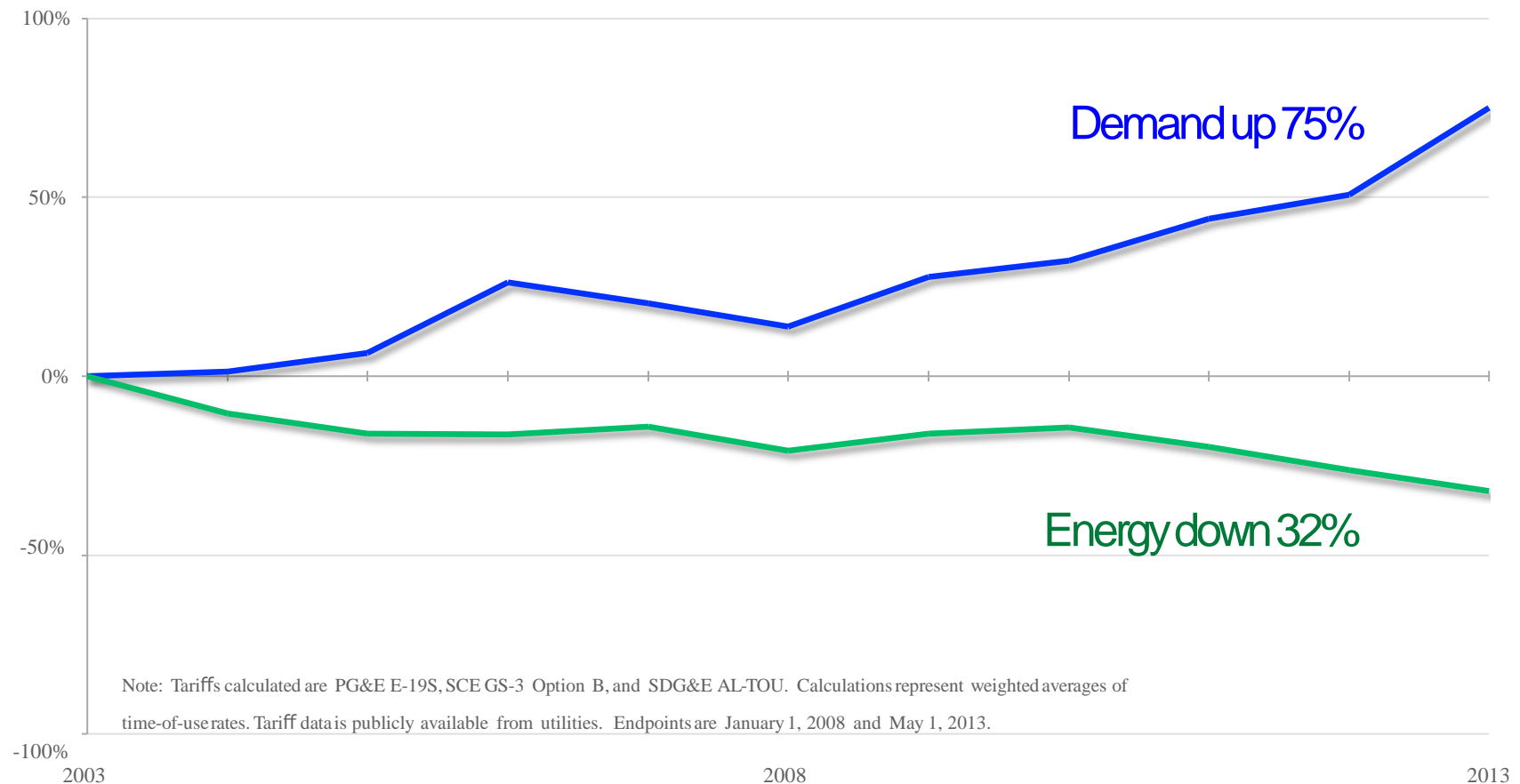
Customer participation without cost shift

→allocating costs and benefits appropriately

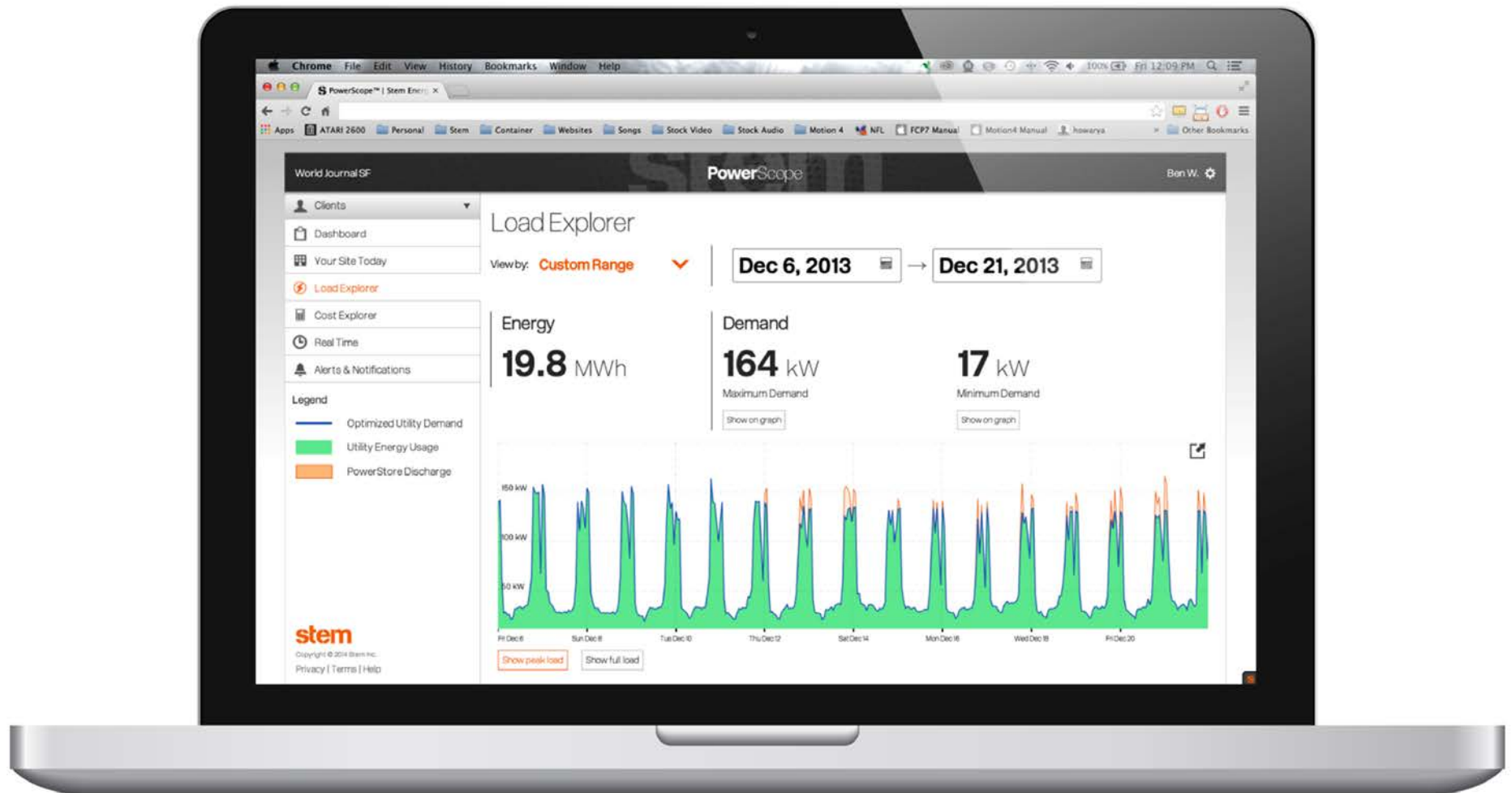
**stem**

# Energy is cheap. Power is expensive

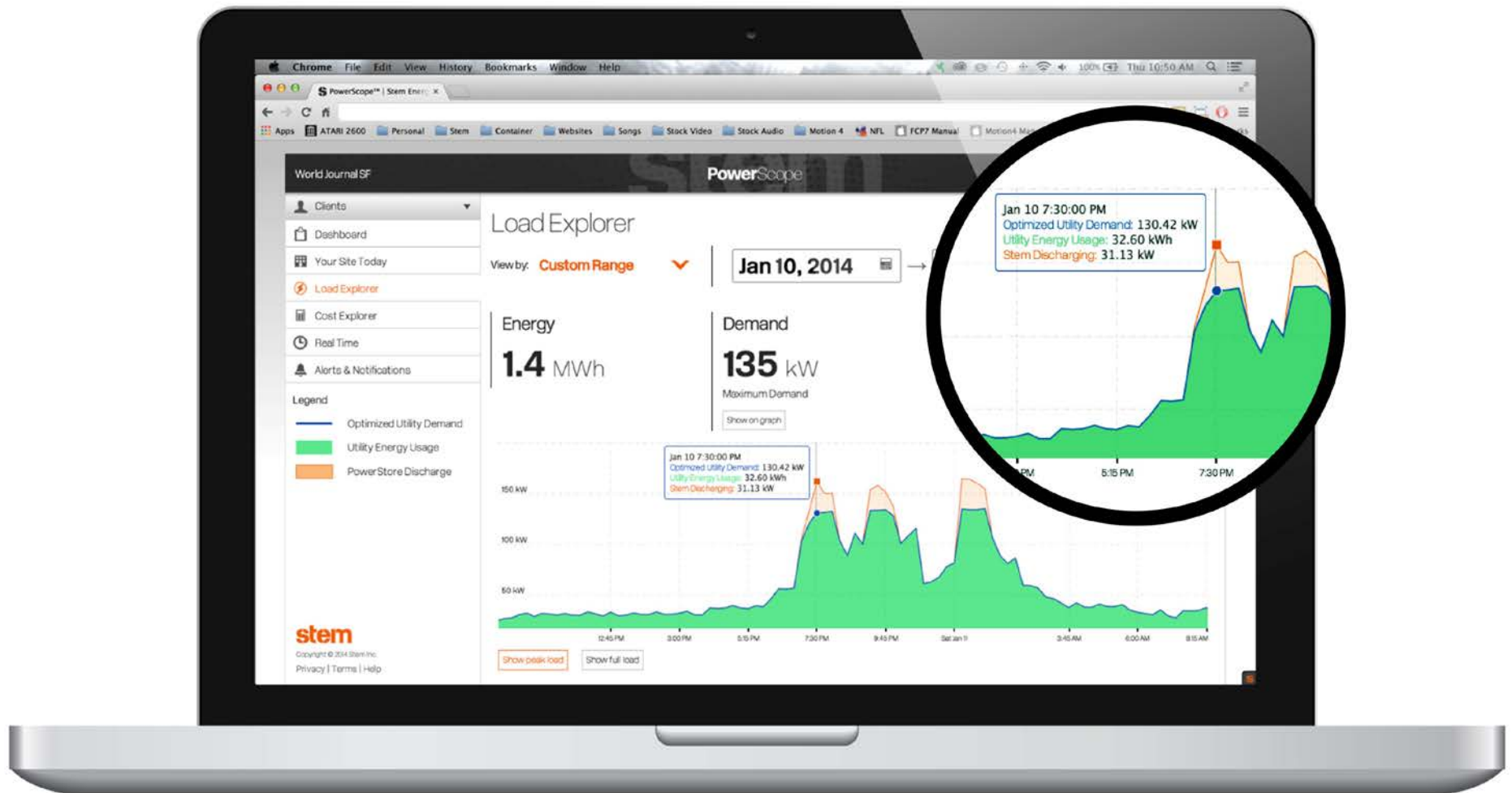
10-year trend for PG&E, SCE and SDG&E



# Reducing peaks according to the tariff

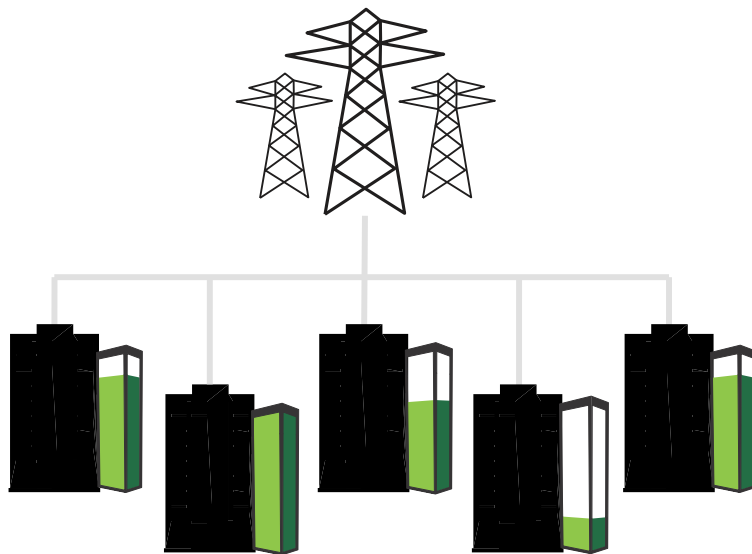


# Reducing peaks according to the tariff



# Stem as a utility resource

**Aggregated PowerStores act as a virtual power plant in periods of high system-wide demand**



- ✓ Fast responding, local capacity
- ✓ Predictive software selects storage systems that will not be in use by the host customer
- ✓ Enables hedging against real-time wholesale price swings or fuel price spikes host customer
- ✓ Utility contract structures ensure aligned discharge/charge with the needs of the system
- ✓ Enables hedging against real-time wholesale price swings or fuel price spikes



# California leading the way

- Supportive incentive structures
- Progressive utilities
- Strong, early-adopter customers

CALIFORNIA REPUBLIC

# Policy challenges



- Transparent procurement process
- Non-discriminatory market access
- Streamline interconnection process
- Wholesale / retail reconciliation
- Develop utility revenue model for storage projects





**Will Fadrhonc**  
Manager of Grid Solutions

Stem, Inc.  
100 Rollins Road  
Millbrae, California 94030

[willem.fadrhonc@stem.com](mailto:willem.fadrhonc@stem.com)

Questions?

