



**Stem, Inc.**

**For Hawaiian Electric Companies Grid Modernization Workshop**

May 10, 2017

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VP Hawai'i Operations

**stem**



# STEM SERVES THE CUSTOMER AND THE GRID



COMMERCIAL & INDUSTRIAL  
CUSTOMERS



UTILITIES, ISOs AND RETAILERS



stem



stem



Login to **PowerScope**

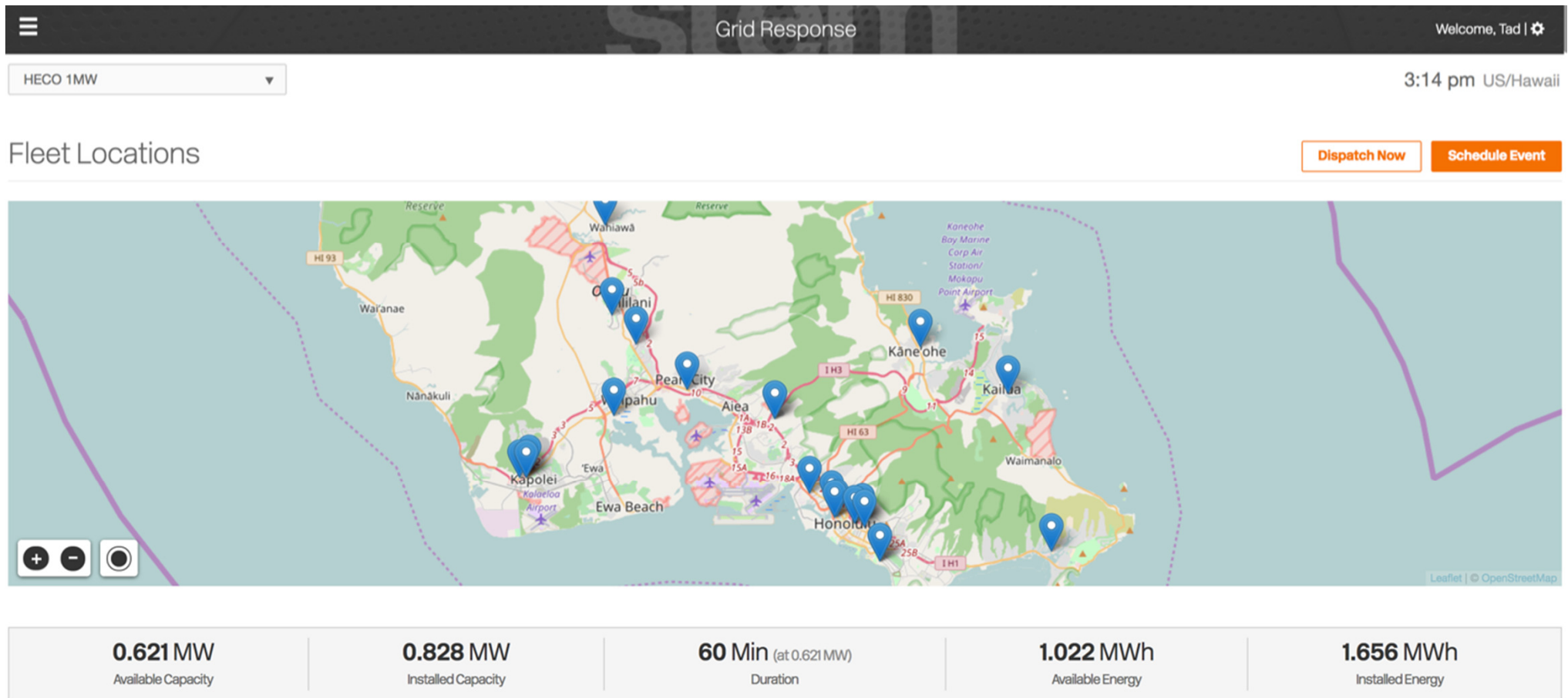
[Password help?](#)

Presented in partnership with  
**Hawaiian Electric**  
**Maui Electric**  
**Hawai'i Electric Light**





# Aggregation enables grid-level benefits



# Resource dexterity is increasing

Dispatch Now Schedule Event

Schedule Event

Date

Tomorrow, 01.23.2017 US/Hawaii

Start Time End Time

8:00am 8:15am

Capacity MW

0.01 0.10 0.18 0.27 0.35 0.44 0.52 0.61 0.01

Duration Min

15 30 45 60 15

Cancel Schedule Event



Scheduled Events Past Events

Thursday, Jan 19, 2017

Event Details

● STATUS: SCHEDULED

START TIME 1:45 PM

END TIME 2:15 PM

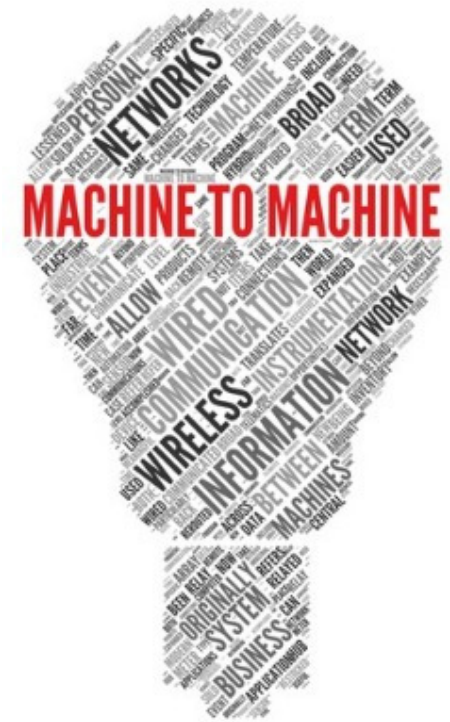
CAPACITY 300 kW

DURATION 30 minutes

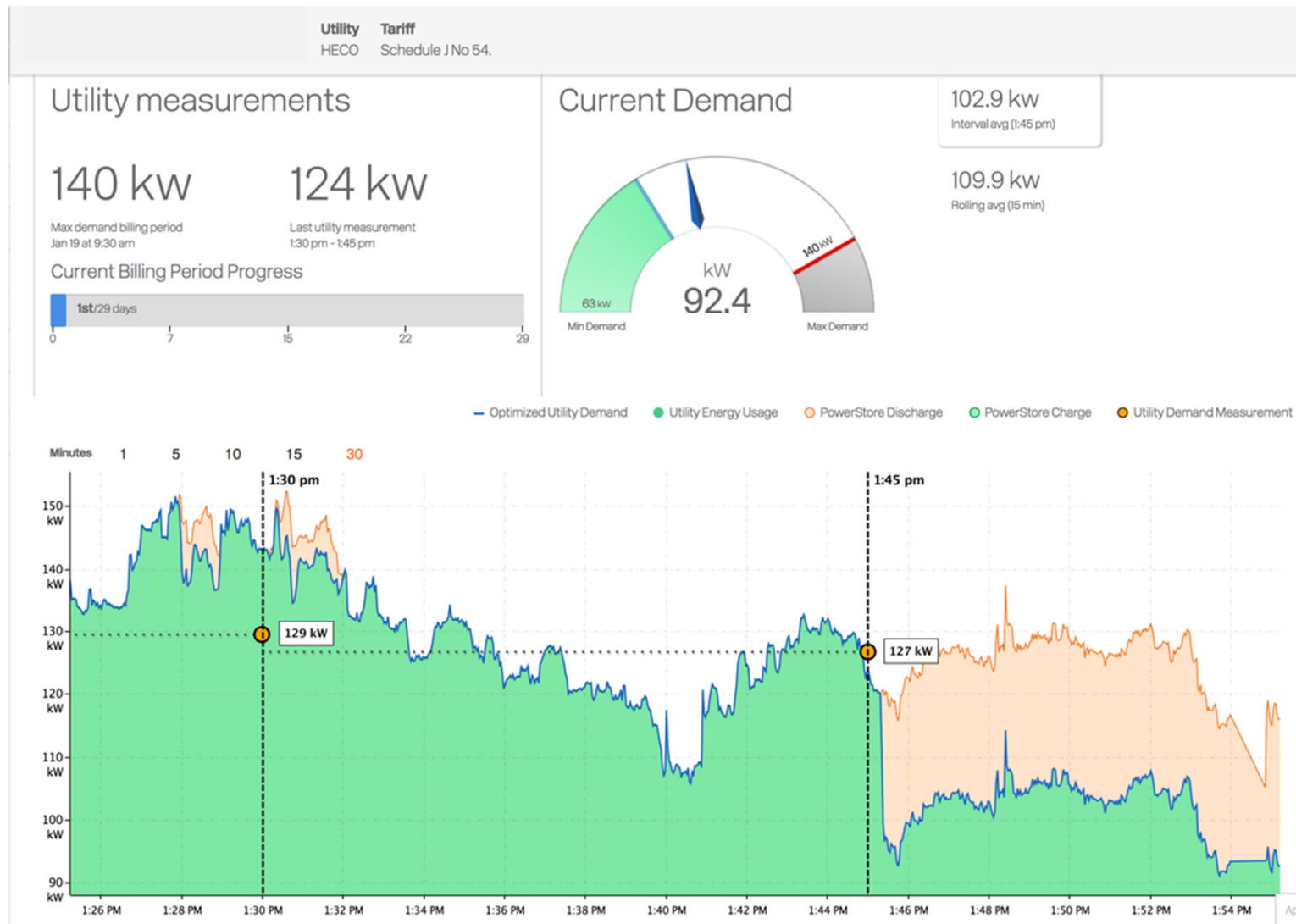
Hawaiian Electric  
SCHEDULER Company

EVENT RESULT N/A kWh

Cancel Event



# Real time feedback builds confidence



# Distributed grid services in action



Hawaiian Electric  
Maui Electric  
Hawai'i Electric Light

Addressing high penetrations of renewables by providing storage for ramping, smoothing and enhanced grid visibility



SOUTHERN CALIFORNIA  
**EDISON**

Delivering a highly controllable capacity resource through DR in highly congested regions



California ISO  
*Shaping a Renewed Future*

First customer-sited storage provider to aggregate customers for real-time and day-ahead wholesale capacity market



Providing load relief during critical hours on peak summer days, and enabling deferral of a major new substation build by 5+ years



*Pacific Gas and  
Electric Company*

Providing resource adequacy (RA) to PG&E to meet CAISO obligations



Thank you.

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