SCE Energy Storage Program Overview

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CPUC Energy storage decision D 13-10-040 requires SCE to procure 580 MW of energy storage by 2020

ENERGY STORAGE REQUIREMENTS						
Storage Grid Domain (in MW)	**2014**	**2016**	**2018**	**2020**	**Total**	**Total Range**
Transmission	50	65	85	110	310	62 - 458
Distribution	30	40	50	65	185	37 - 433
Customer	10	15	25	35	85	85
Total	**90**	**120**	**160**	**210**	**580**	**580**

Up to 50% of total procurement goal can be utility-owned, up to 80% of MWs can be shifted between Transmission /Distribution buckets and all projects must be installed and operational by 2024.

SCE Approach

- Transmission and Distribution - Market only
  - Procure via service agreements from 3rd parties
- Behind the Meter programs
  - Utility procures from 3rd parties via service agreements using existing programs and incremental Preferred Resources programs
- Distribution – Grid focused
  - Utility owned up to 290MW
  - Deploy energy storage as a distribution asset
    - Primary purpose to support distribution system
    - Support distribution circuit needs (e.g., lower line loading)
    - When no distribution-function is required, participate in the wholesale energy market via WDAT
  - Market participation enhances energy storage business case

Dual Use Storage Values

Measuring, monetizing and capturing storage distribution values still remains a challenge

Well Identified Values	Somewhat Identified Values	Unknown Values
• Distribution upgrade deferral	• Equipment life extension • Voltage support	• Power quality improvement • DER integration enhancement • Reactive Power compensation • Reliability improvement • Other unidentified values

Market participation values are known or in final development but the predictability of value still remains uncertain.

Dual Use Challenges

- Unique characteristics of energy storage system allow the unit to be classified as:
  - Generation
  - Grid apparatus
  - Load
- Limited asset classification could impair the ability to maximize storage values
- Optimum framework allows the same storage system to:
  - Operate as a grid asset
  - Participate in the wholesale energy market
  - Act as load