



SCE EPIC Project: Service Center of the Future

EPIC Policy+Innovation Coordination Group
Transportation Electrification Workstream
Meeting #2

Jordan Smith
Grid Edge Innovation
22 October 2020

Current SCE EPIC Transportation Electrification Projects

Three current EPIC III projects involve transportation electrification with technical implementation of various use cases

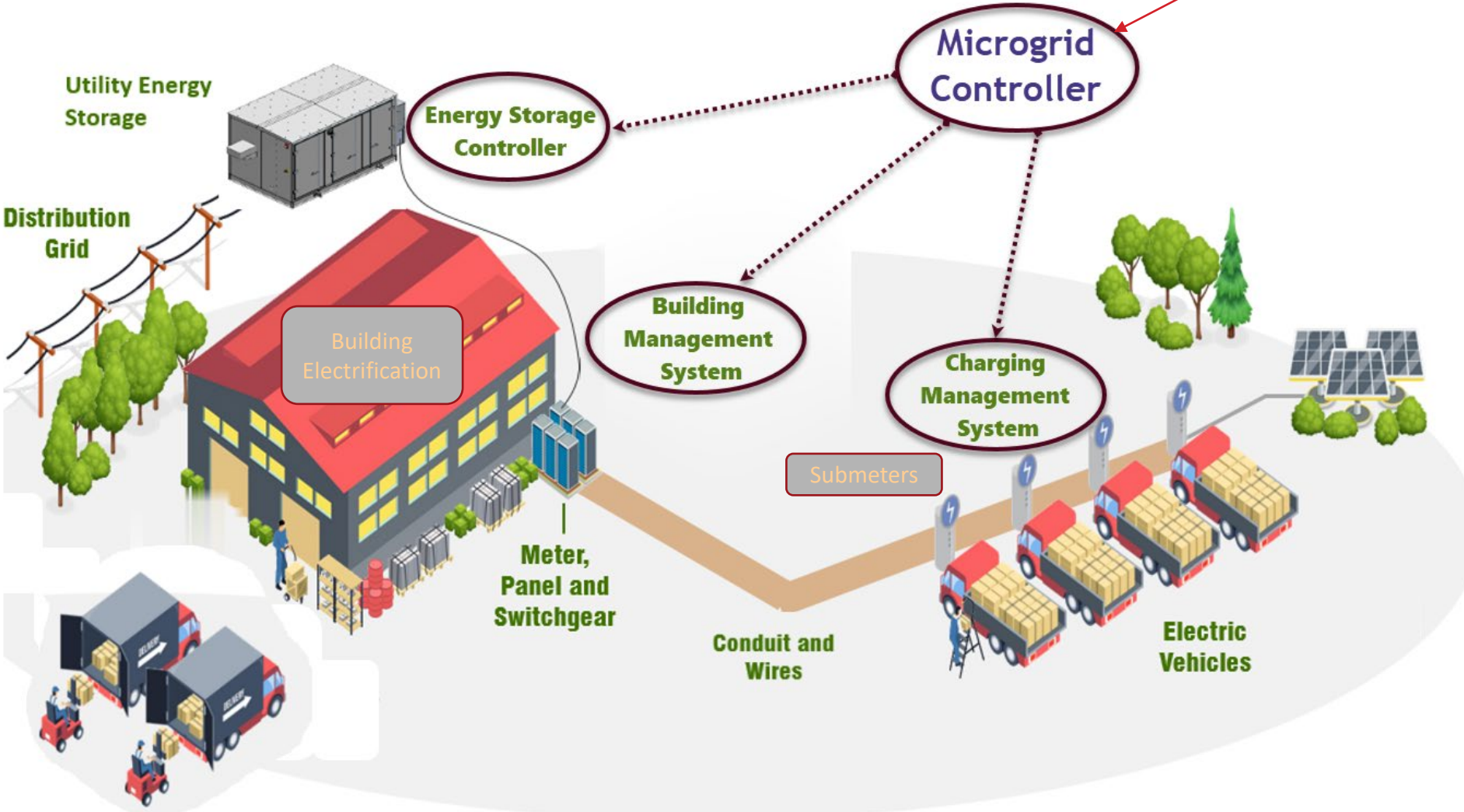
- All three moved into execution earlier this year
- 1. Service Center of the Future**
 - **Fleet and building electrification at facility level, storage, PV, FMS, GMS, DERMS**
- 2. Vehicle to Grid Integration – V2G, light duty, heavy duty
- 3. Distributed Charging Resources – **Presented 9/24**
 - Batteries connected with fast chargers, EV Energy Management Systems

Service Center of the Future: Bus Transit Fleet Depot Electrification

- Working with L.A. Metro on first fleet depot electrification, Division 9, El Monte
- As Metro acquires and deploys electric buses, work with Charge Ready Transport on integrated charging infrastructure with project elements:
 - Site energy controller: Microgrid Control System (MCS)
 - SCE energy storage battery (ESIP)
 - Building energy management system – electric HVAC, hot water
 - Electric bus charge management system (LA Metro)
 - EV charging submeters

SCOF Project Elements

SCE Grid Management System
DERMS



Objectives and Use Cases

Demand Response

- Microgrid control system (MCS) to communicate and manage demand response (DR) events
- Building management system (BMS) to optimize building energy usage
- Charging management system (CMS) to contain EV peak demand

Grid Support

- MCS to support over/under voltage conditions using ESS and controls
- MCS to charge/discharge ESS to support grid capacity needs

Resiliency

- MCS to manage island formations
- MCS to manage grid re-synchronization

EV Charging Management

- CMS to optimize EV charging schedule, satisfying requirements of fleet operation while minimizing electric fuel cost



Challenges and Value Delivered

- Demonstrate alternative service option and real/controlled capacity needs
- Integration of fleet operational control strategy with site and grid energy management systems
- Secure communication between microgrid and third-party DERs
- Interconnection of ESIP storage system and battery management functions (grid side, customer side, generation, distribution)
- Siting of storage and infrastructure components on customer property and consideration of operational needs, configuration, switching
- Outage resiliency of bus charging with energy storage
- Demonstrate advanced metering options and back office systems
- Learnings to enable further deployment of such technology and lower the cost and time required for large-scale fleet electrification