Southern California Edison
Charge Ready Transport
Infrastructure for Electric Transit Fleets

ARB Innovative Clean Transit Workshop
More Than a Century of Service. Focused on The Future.

Transition to a Clean Energy Future

46% OF THE ELECTRICITY THAT SCE DELIVERED TO CUSTOMERS CAME FROM CARBON-FREE RESOURCES.

WE ARE STILL IN

Edison International joined other U.S. businesses, universities, and state and local leaders in signing an open letter to the international community demonstrating support for the 2015 Paris Climate Agreement.

Operations

50,000 SQUARE MILES of SCE service area across coastal, central, and southern California

118,000 MILES OF DISTRIBUTION & TRANSMISSION LINES

Customers, Communities & Employees

5M+ CUSTOMER ACCOUNTS covering SCE’s service area, which has 15 million residents

3,574 SOLAR INSTALLATIONS connected on average per month

Source: SCE 2017 Sustainability Report
If we want to get to zero emissions, eventually we have to replace many of the things we rely on today that require combustion.
Transportation Electrification Pathway to 2030

24% of cars and light trucks
7 Million total

15% of medium-duty trucks and vans
180,000 total

6% of heavy-duty trucks and buses
22,000 total

= Removing 17,000 tons of NOx and 58 million metric tons of greenhouse gas emissions from California’s Neighborhoods by 2030

Clean Power and Electrification Pathway white paper available at: sce.com/pathwayto2030
Progress made electrifying transportation

**Passenger Vehicles**
- 588,918 EVs registered in CA, 47% of US total.*
- Up to $1,000 rebate per vehicle, including leased & used EVs.

**Charging Stations**
- Installing 1,301 ports at 81 sites through Charge Ready Pilot
- Bridge funding – 1,173 ports at 57 sites currently committed
- 14 DC fast chargers in urban areas

**Transit Vehicles**
- Installing charge ports at three transit agency sites

**Port Transportation**
- Electrifying nine rubber tire gantry cranes
- Installing 20 charging stations for yard haulers

*As of June 2019*
Medium to Heavy Duty Plan had Two Paths

• SB 350 provided CPUC direction to instruct investor owned electric utilities to enable widespread TE deployment.

• The CPUC instructed the utilities to develop Demonstration “Priority Review” projects and a Long Term Medium to Heavy Duty TE program

• Four Priority Review Projects received approval January 2018

• One of the approved Priority Review projects was for the installation of infrastructure to support Transit Agencies electrification effort for their fleets

• Standard Review Charge Ready Transport program approved in late 2018 and launched in May 2019
Typical Electrical Infrastructure Project

- Transformer builds off-site transformer & service drop to the meter.
- Customer installs on-site electrical panel, conduit, and charging stations.
Defining Make-Ready Infrastructure

- Standalone charging station model

Program covers costs associated with service drop, meter, panel, and circuit dedicated to EV charging. Make-ready ends at interconnection point with customer charging equipment providing AC service.
Defining Make-Ready Infrastructure

- Centralized charger electronics with modular DC power distribution

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Priority Review Project
Victor Valley Transit

- SCE installed New Primary Service dedicated to Zero Emission Bus charging
- Installed new meter panel to serve charging equipment
- Brought power to service disconnects for the charging units
Foothill Transit Project

- Twelve 60kw DC chargers, one 125kw DC charger.
- Extended a dedicated 12kV primary feed approx 500 feet
- Clustered transformer, switchgear and chargers to minimize footprint
Charge Ready Transport provides infrastructure for fleet electrification

- Approved total program budget of $356.4M
- Achieve minimum 870 sites with 8,490 electric vehicles procured or converted
- Covers cost of all infrastructure needed up to charging station
- Charging station rebates available for transit/school buses and sites in disadvantaged communities

**Reserve Funding**
- 2-3 months

**Permits**
- 45 days

**Design & Build**
- 6-9 months

**Rebate**
- 1 month
Customer Eligibility and Obligation

1. Must own or lease site or be the customer of record associated with meter.
2. Site must include an appropriate location to deploy charging equipment in a cost-effective manner.
3. Provide signed grant of easement by site owner
4. Must procure at least two electric vehicles (EV) or convert at least two diesel vehicles to electric.
5. Submit vehicle acquisition plan
6. Provide proof of purchase (EVSE and vehicles)
7. Must maintain and operate charging stations for at least 10 years from installation.
8. Must provide charging data for at least five years after EVSE is installed.
9. Agree to enroll on an eligible TOU rate such as TOU-GS or TOU-EV rates.
10. Participants can combine on-site load management technologies to EV charging including solar, energy storage, and/or vehicle-to-grid (V2G) capabilities.

Diagram is for illustrative purposes only

Energy for What’s Ahead™
Approved Product List (APL) is online

- APL lists approved hardware and vendors
- Approved:
  - AC Level 2 19.2kw, J1772 connector
  - DC 50kw+, CCS1 connector
  - Clipper creek with gateway
- Not approved:
  - 3-phase AC, 33kw
  - Meltric connector
  - Non-networked chargers (clipper creek without gateway)
- EVSE vendors can submit applications to be added to APL
- [http://on.sce.com/crapl](http://on.sce.com/crapl)
Additional Programs and Services

Transportation Electrification Advisory Services
• Perform rate analyses to find optimum rate tier
• Perform fleet assessment service to calculate GHG reductions and potential LCFS credits
• Support customer-led projects outside of programs

Self Generation Services
• Review plans for solar and battery storage projects
• Conduct analysis of feasibility and customer savings
• Provide a third-party check on vendor claims

Online Energy Management Tool
• Displays usage data day-behind
• Online graphs and data summaries provide high-level insights
• Detailed data available for download and offline analysis
Charge Ready Transport Website

- [www.sce.com/crt](http://www.sce.com/crt)
  - Program information
  - Application requirements
  - Program handbook, fact sheet and FAQ
  - Apply Now button to submit application online
Upcoming Events:
CalACT Conference, October 29-November 1

Navigating the Zero Emission Bus Pathway Part I - Planning
October 30, 12:30pm

What You’ll Learn:
• The planning required for implementing Zero Emission Buses.
• Addressing cost related concerns with electricity and upgrades
• Potential funding support available from utility partners.

Transit Case Studies in building EV Infrastructure
October 31, 9:45am

What You’ll Learn:
• Lessons learned by transit agencies from their infrastructure projects
• Timelines for constructing electric infrastructures
• How proper planning can simplify and streamline infrastructure installations

Expo Hall: Learn more and sign up for Charge Ready Transport
Charge Ready Transport
More Information:

Contact your Account Manager or chargereadytransport@sce.com