Energy for What’s Ahead
Our Transportation Electrification Pathway

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GO-Biz/SCAG EV Permitting & Infrastructure Workshop
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SCE is building upon the Pathway to 2030...

We were going here...

2050 Goal
Reduce Greenhouse Gas Emission to 80% below 1990 levels

...Now the journey is going farther.
A Multi-faceted Strategy

Customer Service
T&D

Customer Service
T&D

Power Supply
T&D
The Impact of Transportation Electrification

- **Light-Duty Vehicles**
  - 2020: 20 million
  - 2030: 30 million
  - 2045: 40 million

- **Medium-Duty Vehicles**
  - 2020: 5,000
  - 2030: 7,500
  - 2045: 10,000

- **Heavy-Duty Vehicles**
  - 2020: 500
  - 2030: 750
  - 2045: 1,000

**ELECTRIFY TRANSPORTATION**

- **2030**:
  - LD EV: 25%
  - MD EV: 23%
  - HD EV: 6%
  - EV Buses: 50%

- **2045**:
  - LD EV: 76%
  - MD EV: 67%
  - HD EV: 38%
  - EV Buses: 85%

**GHG Emissions**

- 2017: 174 MMT
- 2030: 107 MMT
- 2045: 30 MMT
SCE is Leading the Way in Transforming the Energy Sector

Carbon Neutrality by 2045 through...

3 out of every 4 (75%) of LD

2 out of every 3 (66%) of MD

1 out of every 3 (33%) of HD

1/3 of the energy on the grid is used to power electric vehicles
SCE’s role: availability, affordability, & awareness

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<thead>
<tr>
<th>Availability</th>
<th>Affordability</th>
<th>Awareness</th>
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<tbody>
<tr>
<td>Infrastructure necessary to fuel EVs</td>
<td>Low cost in comparison to traditional vehicles</td>
<td>Customer understanding of benefits of EVs</td>
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<tr>
<td>☐ Build out capitalized charging infrastructure for:</td>
<td>☐ Provide charging station rebates for commercial &amp; residential</td>
<td>☐ Provide market education and outreach programs</td>
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<tr>
<td>• Passenger vehicles at workplaces, apartments, and public locations</td>
<td>• Provide new and used vehicle rebates (Low Carbon Fuel Standard)</td>
<td>• Run broad and targeted advertising</td>
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<tr>
<td>• Commercial freight vehicles</td>
<td>• Invest in customer-side infrastructure</td>
<td>• Provide fleet customer support and advisory services</td>
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<td>• Transit buses</td>
<td>• Offer special rates for EV charging</td>
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Energy for What’s Ahead
SCE Business TE Programs Cover the Cost to Build EV Charging Infrastructure

- SCE will cover cost of make-ready infrastructure and may offer a rebate to offset cost of procuring and installing charging stations
- Participant is responsible for procuring charging stations
Progress made electrifying transportation

Charging Stations

Charge Ready Pilot: 1,230 charging ports installed by SCE by y/e 2019 at 80 sites, $22 Million

Charge Ready Bridge: 217 ports installed at 9 sites, 1,246 ports reserved funds over 57 sites; $22 Million

Fast Charging

Charge Ready DCFC: 14 DC fast charging ports over 5 sites installed near/adjacent to DACs and MUDs, rebate provided to offset the cost of the charging stations and their installation; $4 Million

Transit Vehicles

Charge Ready Transit: 30 charge ports have been installed by SCE at three transit agency sites, rebate provided to offset the cost of the charging stations and their installation; $4 Million

Port of Long Beach

Port of Long Beach Projects: Nine rubber tire gantry cranes will be electrified and infrastructure for up to 20 yard haulers will be installed. SCE construction completed in Q4 2019
Charge Ready Transport provides infrastructure for fleet electrification

- Approved total program budget of $356.4M
- Targeting **870 sites** with **8,490 electric vehicles** procured or converted
- Class 2 through 8 vehicles and cargo handling off highway vehicles
- **Charging station rebates** available for **transit/school buses** and **sites in disadvantaged communities**
Residential programs encouraging EV adoption

**Passenger Vehicles**

Available Now

Approx. 50% of US EVs are in California

**Clean Fuel Reward**: SCE provides an up to $1000 rebate per vehicle purchased including used EV sales, distributed approx. $55M rebates to SCE customers since Feb 2020

**Charging Stations**

Complete

**Charge Ready Home Installation Rebate**: 2,670 rebates totaling $1.4M sent to fund L2 infrastructure upgrades for home charging. The rebate offset the costs of permits and licensed electricians. *Closed on May 31, 2019*
SCE will continue to develop new programs to spur EV adoption

**AB1082 – Charge Ready Schools**
- **No-cost** or **utility owned infrastructure** to serve level 1 or level 2 EV charging
- Available to **K-12 Schools**

**AB1083 – Charge Ready State Parks and Beaches**
- **Utility owned** infrastructure (for existing or new construction) to serve level 2 or DCFC EV charging
- Available to **California State parks and beaches**
Plan for Charge Ready 2: Speed, Scope, and Scale

Proposal to deploy 32,000 level 2 ports at 3,200 workplaces, apartments, destination centers and fleets; Install an additional 200 DC Fast Chargers.

Offer apartments and government customers a turnkey solution: SCE can install, own, and maintain up to 4,230 new charging ports.

Up to $3,500 rebate per port to exceed CalGREEN building code and install a minimum of 16,000 ports at new construction multi-unit dwellings.

Multi-prong marketing strategy:
• Mass media advertising of EVs and benefits;
• Targeted marketing on EV experience;
• Support businesses to convert fleets to electric;
• Program-specific marketing.
Examples of Completed Charge Ready Projects
Examples of Completed Charge Ready Transport Projects
2020 High-level Commercial EV Timeline

Customer Requirements:
- Easement
- Invoice Payment
- Contract
- TOUEV Application for Service
- City Panel Release
- Address Verification and Placard

Note: Please allow 48 hours for processing new submittals for design and construction scheduling. Large jobs are determined by labor hours it takes an SCE crew to complete a project. Small jobs are less than 120 man hours; Large jobs are greater than or equal to 120 man hours.

* = Level of effort is the quantity of days needed to complete the SCE crew work.
Examples of Completed Commercial EV Projects

- Tesla
- ChargePoint
- Electrify America
Join us on this ride.

Simon Horton
Senior Project Manager, Transportation Electrification
Southern California Edison
Typical EV Chargers

Level 1: 120 Volt

Level 2: 208/240 Volt

Level 3: 480 Volt
LADWP EV Project Types

Type 1
No LADWP Upgrade Required
(Adequate Facility)

Type 2
Minor LADWP Upgrade Required

Type 3
New Installation
Major LADWP Upgrade Required
Project Type 1 – No LADWP Upgrade Required

- Adequate Facility Letter (AFL)
- Installation of new EV charger
- Optional Revenue Meter Installed
- No LADWP upgrades required
Project Type 2 – Upgrade Required

- Minor LADWP upgrade required
  - Upgrade Transformers
  - Upgrade Cables
  - Upgrade Equipment (Service Panel)
- Revenue Meter Installed (Optional)

Potential Upgrade

New Installation
Project Type 3 – New Installation

- New equipment Installation
  - Major LADWP upgrade required
  - Line extension
  - Overhead conversions
  - Duct work
  - Switchgear upgrades

- Multiple supply point and services
  - Dedicated or Separate

New Installation
Feasibility Study

**Customer**
- Completes online application (indicate request for feasibility study)
- Provides total EV chargers connected load
- Preliminary site plan showing where the EV chargers located
- Pays non-refundable $1500 Feasibility Fee in advance
- Credit the fee in its entirety toward the total final estimated cost of the associated project if project proceeds

**LADWP**
- Send Feasibility Fee invoice to customer after the application received
- Conduct breakeven study and site walk (if necessary) after the payment received and processed
- Provide engineering assessment how LADWP can serve the requested EV chargers
- Provide Preliminary cost estimate
LADWP Electric Vehicle Charger Project Process

- Preliminary Phase
- Design Phase
- Construction Phase

- A minimum of (8) project status updates via email throughout the process
CUSTOMER SUBMITTAL PACKAGE received: Written review response within 7 days.

Hold Email – Requesting for more information.


Job returned to customer – Insufficient information provided to move to design phase. Re-submit when customer has necessary information.
Customer Submittal Package is complete and ready for design.

- Project has been deemed Adequate Facility (No Upgrade) Information letter sent to customer.
- Project has been deemed Upgrade Required or New Installation Requirement letter sent to customer.
Construction Phase

**Type 1 (No Upgrade)**
- No LADWP upgrade required
- Facility is ready

**Type 2 (Minor Upgrade)**
- Minor LADWP upgrade required
- Replace transformer, service cables and/or meter
- Electric Service Representative (ESR)
  - Perform site inspection
  - Provide required corrections

**Type 3 (New Installation)**
- New Installation
- Major LADWP upgrade required
  - Line extension
  - Overhead conversions
  - Duct work
  - Switchgear upgrades
- Minimum three months for LADWP construction
  - Duration varies based on complexity of project scope
Step 1

Visit: [https://www.ladwp.com/ev](https://www.ladwp.com/ev)
Step 2

Click: **Installation tab**  

Click: **Commercial EV Charging Station Request Form**
Step 3

For Commercial Customer

Submittal Requirements

EV Chargers Power Services

1. Service Planning Information Sheet (attached). Include name, address, telephone number and email address of the:
   - Service Wanted Date
   - Job Address based on the street where the facility is located. (include Zip code)
   - Property Owner (if Applicable)
   - Company contact (Project Manager)
   - Consultant (Primary point of contact)
2. Plot Plans and/or site plans (to Scale) detailing the following:
   - Legal Description. (Lot and Tract Number) (if Applicable)
   - If Facility is located on private property, provide location and outline of any existing structures on the property. Provide property line lengths with dimensions of facility and location to property lines.
   - If Facility is located on public property, provide location and outline of dimensions to the centerlines of the street and nearest cross street. Include dimensions of facility.
   - Street name, address, and North Arrow.
   - Preferred proposed metering equipment location, and existing metering equipment locations (if applicable) and preferred location of LADWP Transformer and/or Switch Pads.
   - Locations of any existing overhead utilities (power poles) in the vicinity (if Applicable).
3. Type of Facility (i.e. Level II or Level III EV CHARGING STATION). Include Company name and facility (site) number or name.
4. Elevation and/or building profile plans (if Applicable).
5. One-Line electrical diagram detailing the requested service voltage and all the switch and bus amperages. Show the existing and proposed electrical equipment. (Include existing meters with meter numbers).
6. Load schedule summarizing the service amperage and all proposed connected electrical loads.
7. Electrical Plan Check Permit or Correction List from City of Los Angeles Department of Building and Safety (LADBS).

Phone numbers must be formatted with dashes

Be prepared to attach required application information to complete Customer Submittal Package
Have a general question?

Call our Connection Center

1-213-EMPOWER
No Response? What to do...

1. Send a follow-up email
   <COMM.SVC_EVRequest@ladwp.com>

2. Call the connection Center – 213-367-6937

3. Send an email to
   PNBDTACustomerFeedback@ladwp.com
Questions?