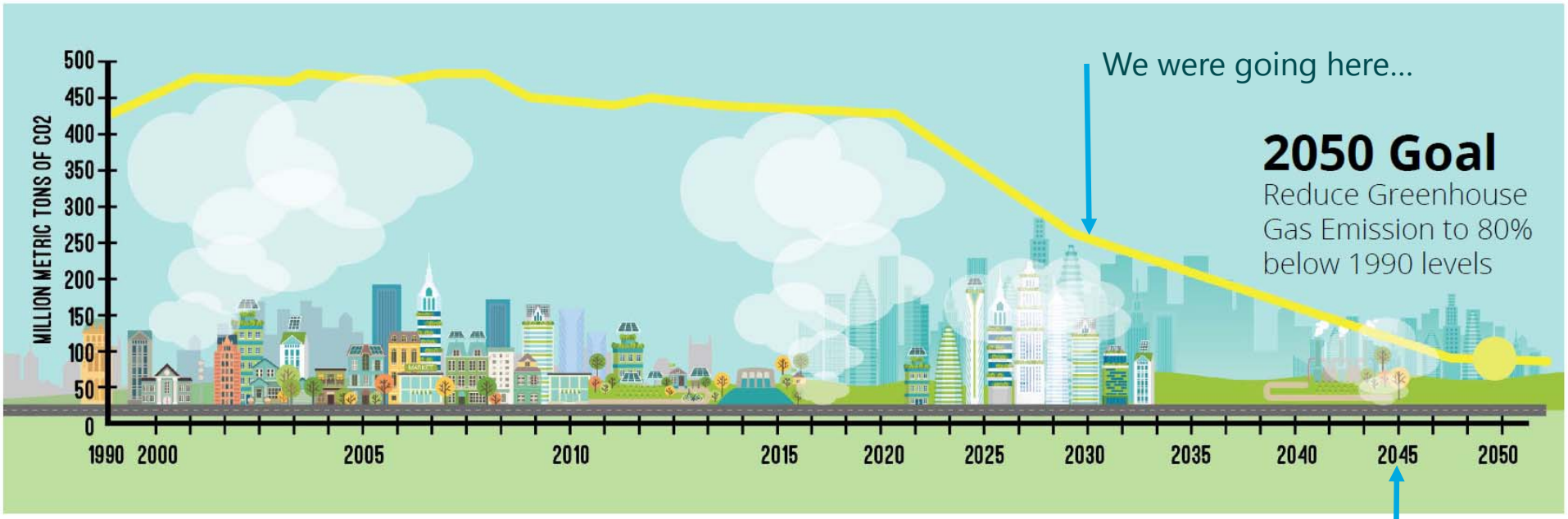
SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead®

Energy for What's Ahead

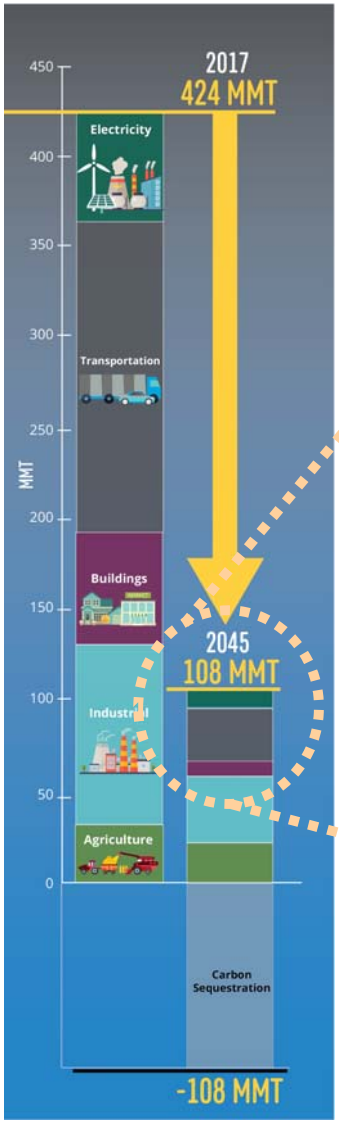
Our Transportation Electrification Pathway

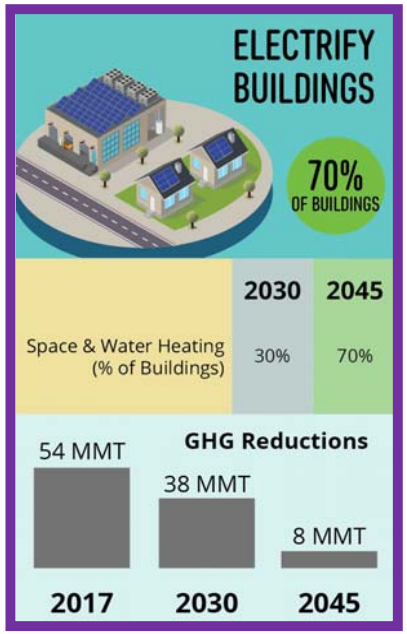
Simon Horton
Senior Project Manager, Transportation Electrification
GO-Biz/SCAG EV Permitting & Infrastructure Workshop
March 10, 2020

SCE is building upon the Pathway to 2030…

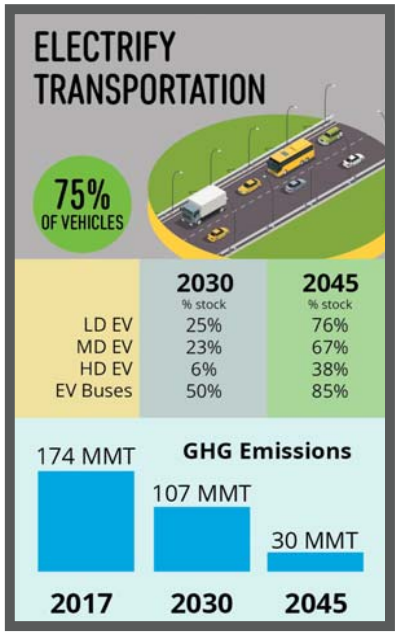


A Multi-faceted Strategy





Customer Service T&D



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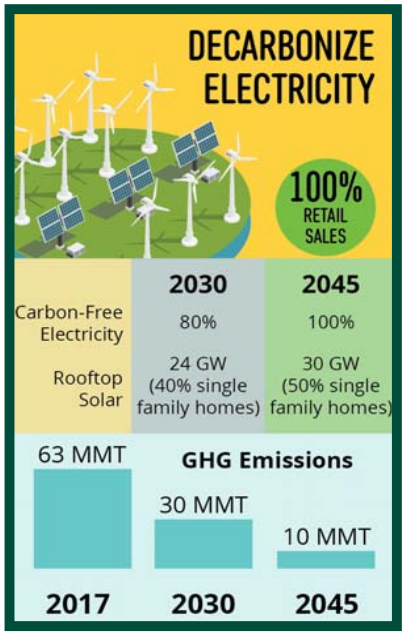
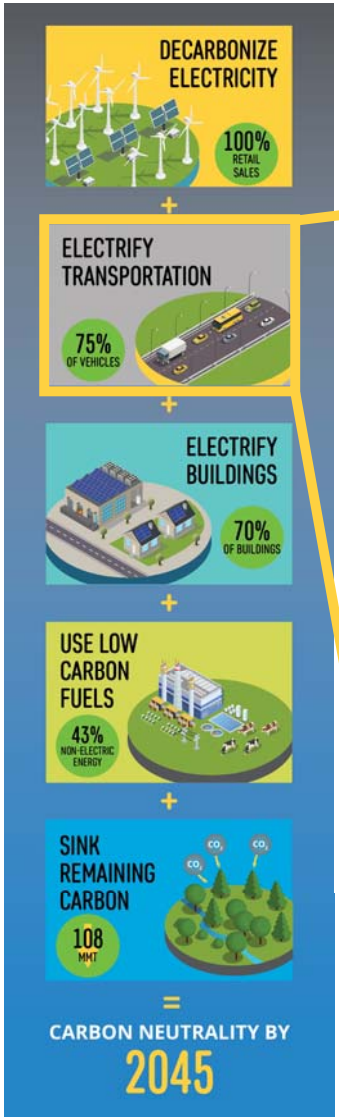
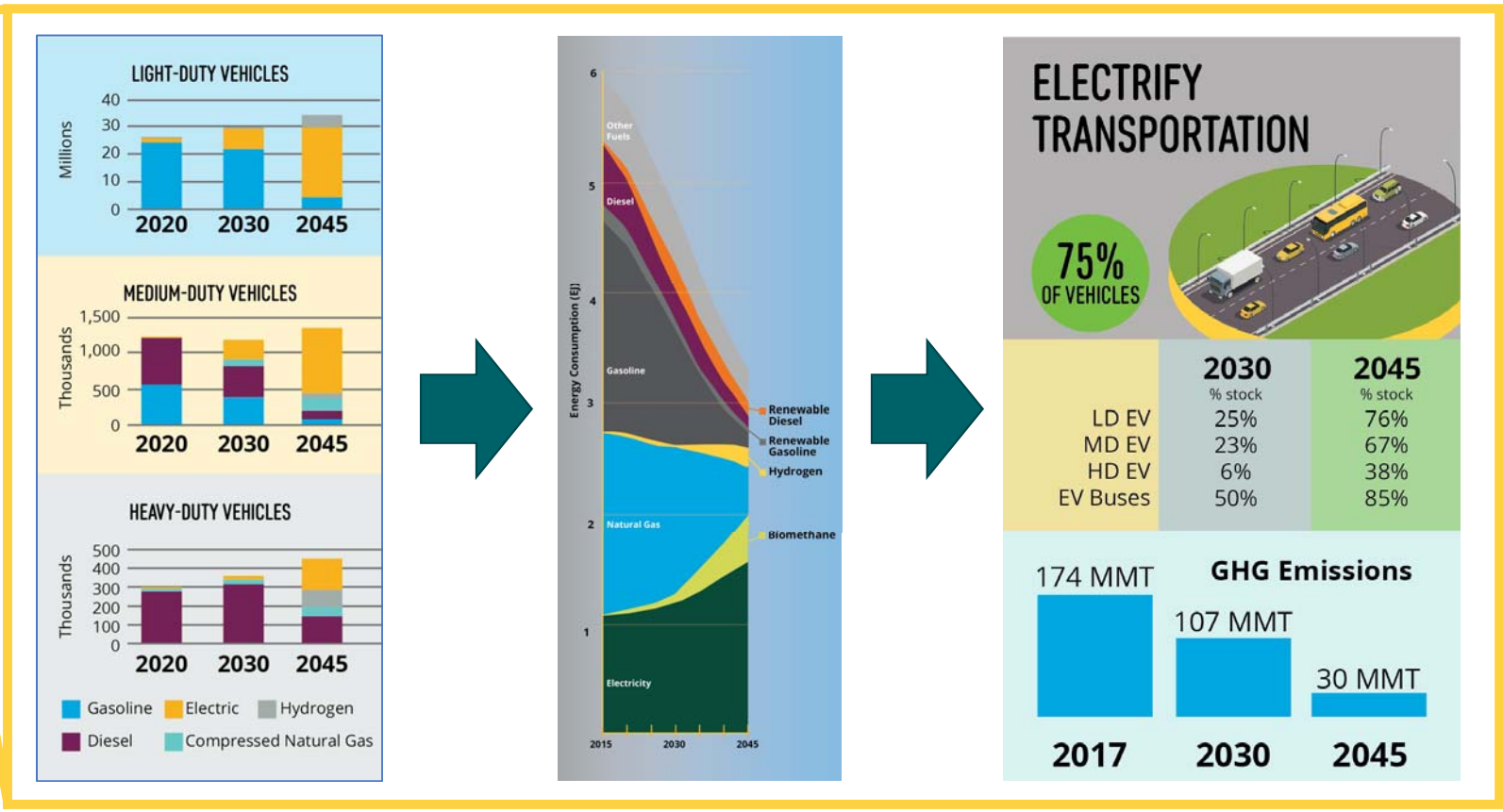


Power Supply T&D

The Impact of Transportation Electrification





SCE is Leading the Way in Transforming the Energy Sector

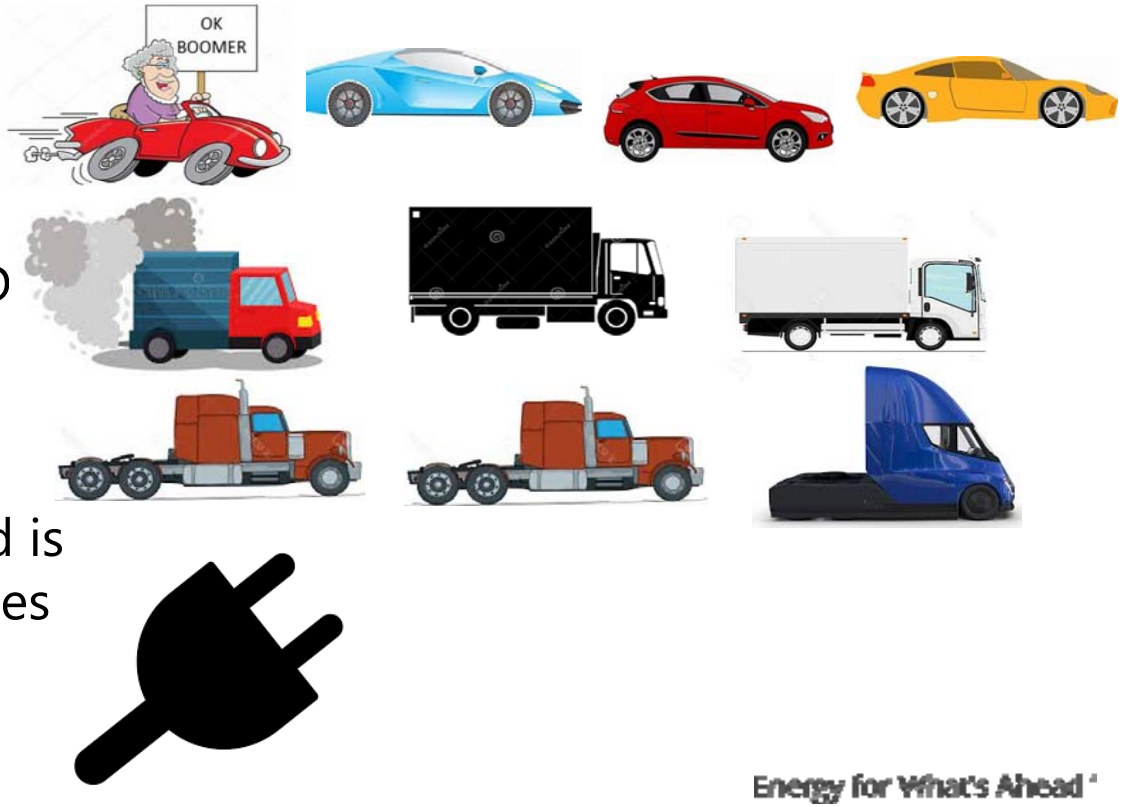
Carbon Neutrality by
2045 through...

3 out of every 4 (75%) of LD

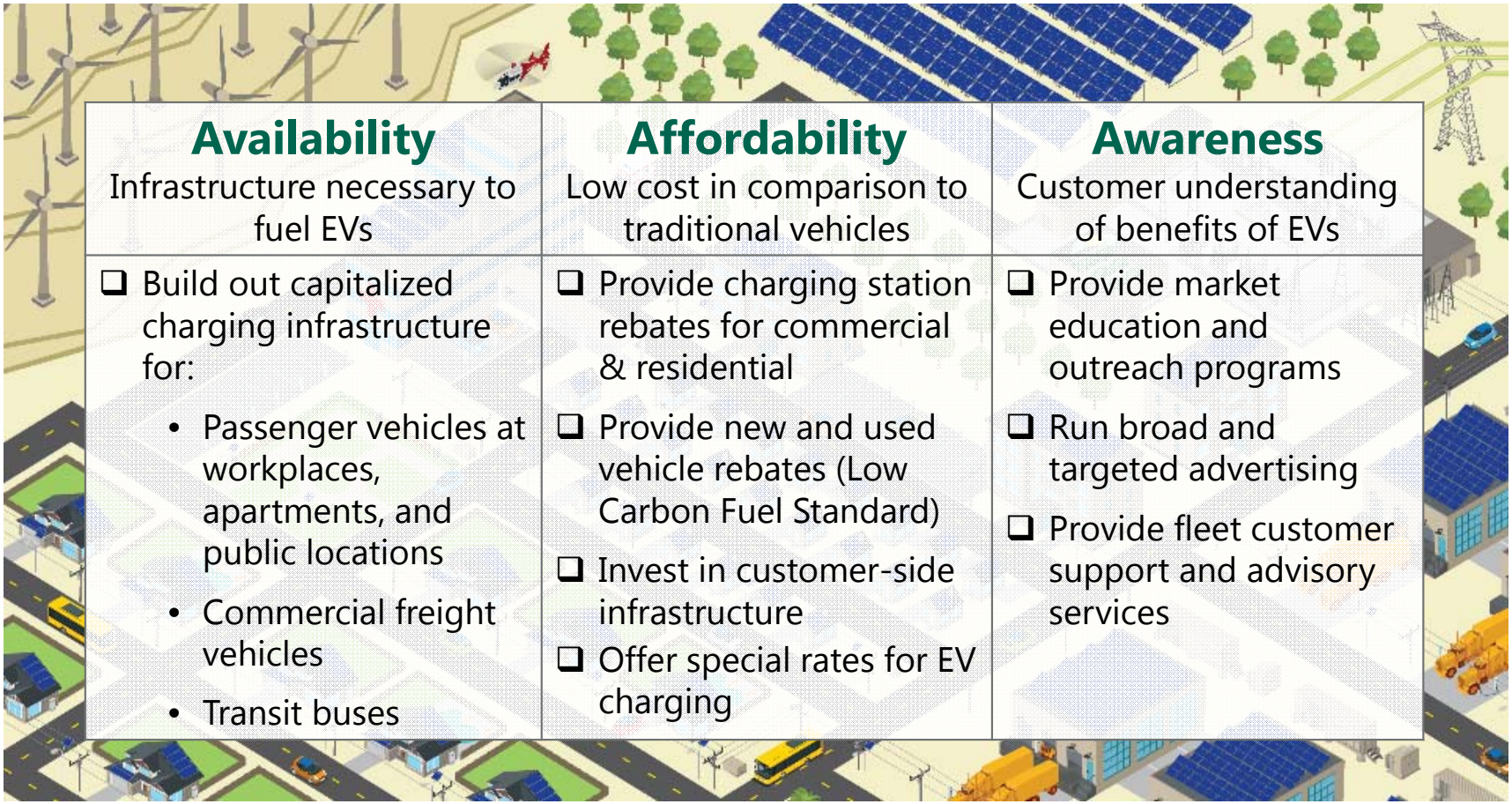
2 out of every 3 (66%) of MD

1 out of every 3 (33%) of HD

1/3 of the energy on the grid is
used to power electric vehicles



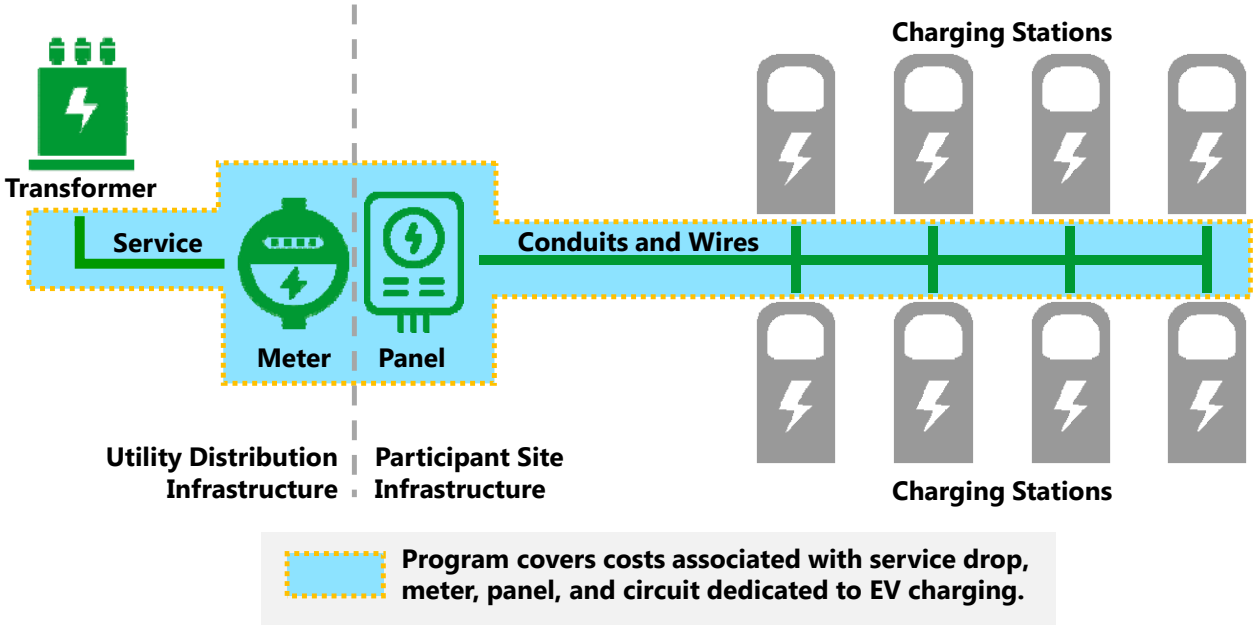
SCE's role: availability, affordability, & awareness



Availability Infrastructure necessary to fuel EVs	Affordability Low cost in comparison to traditional vehicles	Awareness Customer understanding of benefits of EVs
❑ Build out capitalized charging infrastructure for: • Passenger vehicles at workplaces, apartments, and public locations • Commercial freight vehicles • Transit buses	❑ Provide charging station rebates for commercial & residential ❑ Provide new and used vehicle rebates (Low Carbon Fuel Standard) ❑ Invest in customer-side infrastructure ❑ Offer special rates for EV charging	❑ Provide market education and outreach programs ❑ Run broad and targeted advertising ❑ Provide fleet customer support and advisory services

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

Complete

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

Complete

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

Complete

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 Transportation

Complete

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.

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.

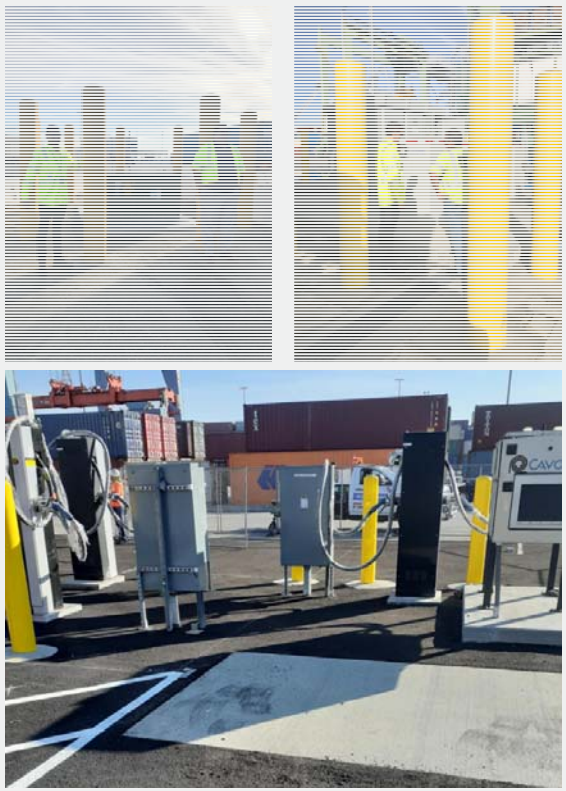
Offer apartments and government customers a turnkey solution: SCE can install, own, and maintain up to 4,230 new charging ports.

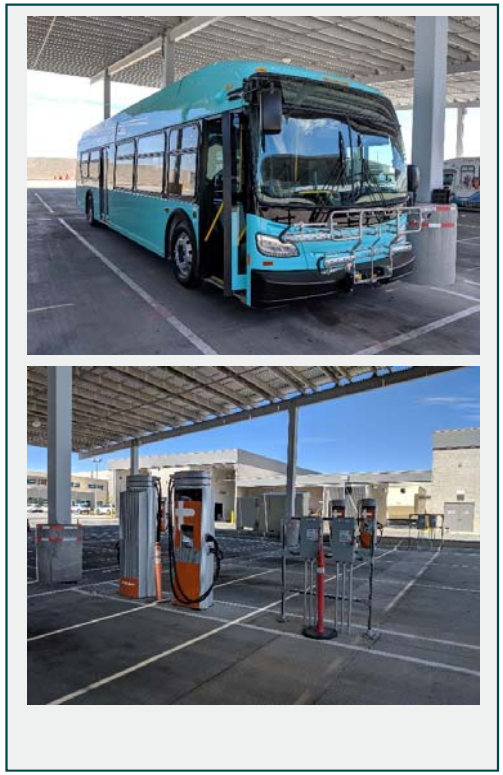
Multi-prong marketing strategy:

- Mass media advertising of EVs and benefits;
- Targeted marketing on EV experience;
- Support businesses to convert fleets to electric;
- Program-specific marketing.

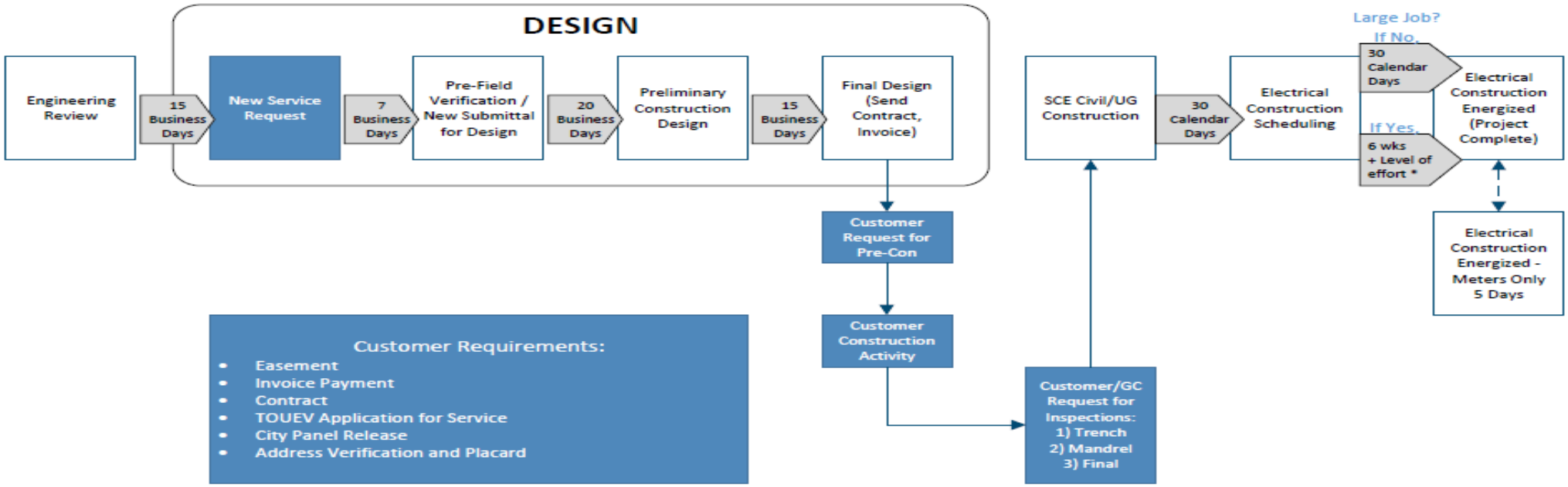
Examples of Completed Charge Ready Projects

Examples of Completed Charge Ready Transport Projects





2020 High-level Commercial EV Timeline



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

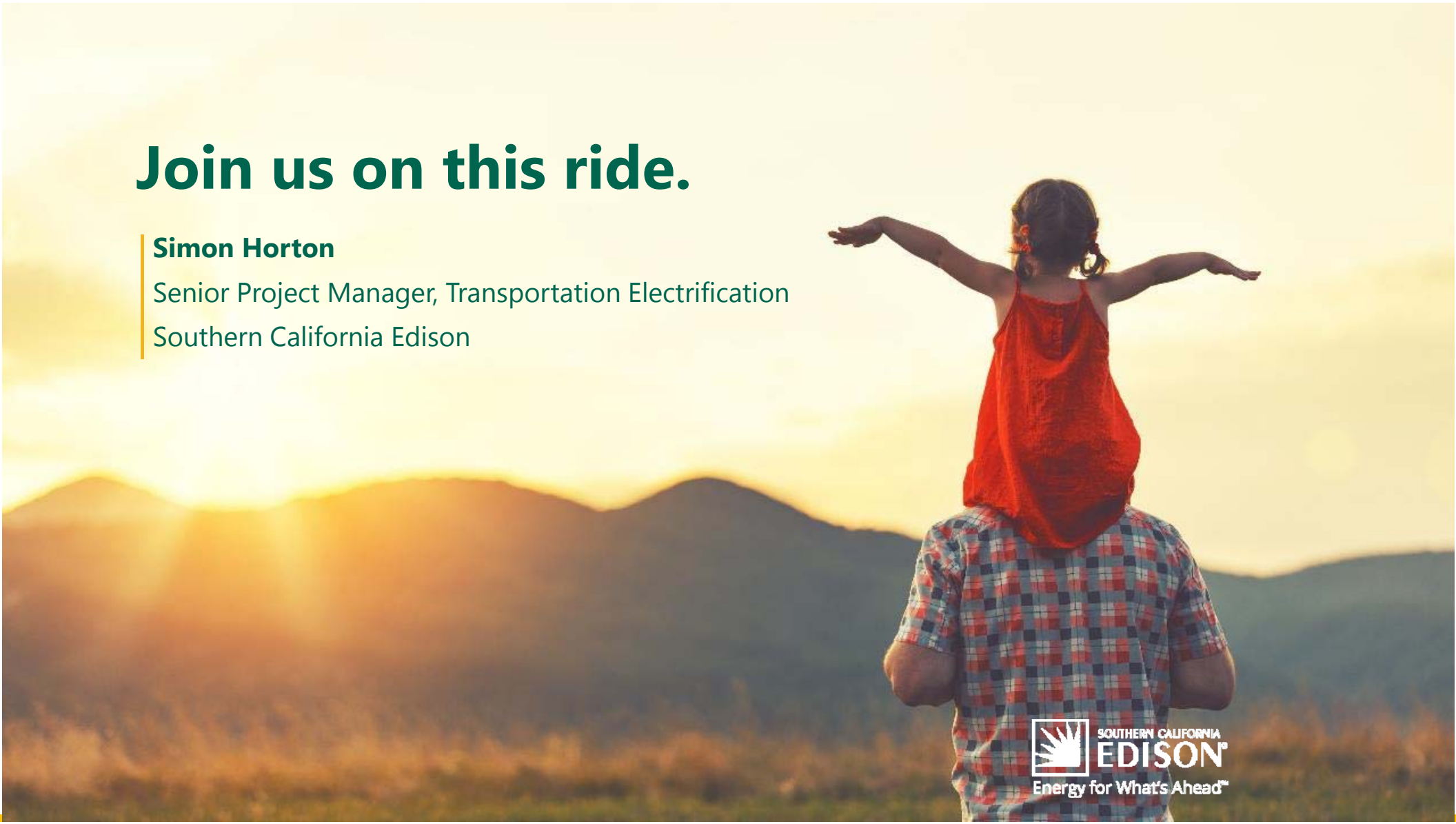
Tesla

ChargePoint

Electrify America

Join us on this ride.

Simon Horton
Senior Project Manager, Transportation Electrification
Southern California Edison



Commercial Electric Vehicle (EV) Charger Project Guidelines & Info

Service Planning & New Business

LA DWP Los Angeles Department of Water & Power

Typical EV Chargers

Level 1

120 Volt

Level 2

208/240 Volt

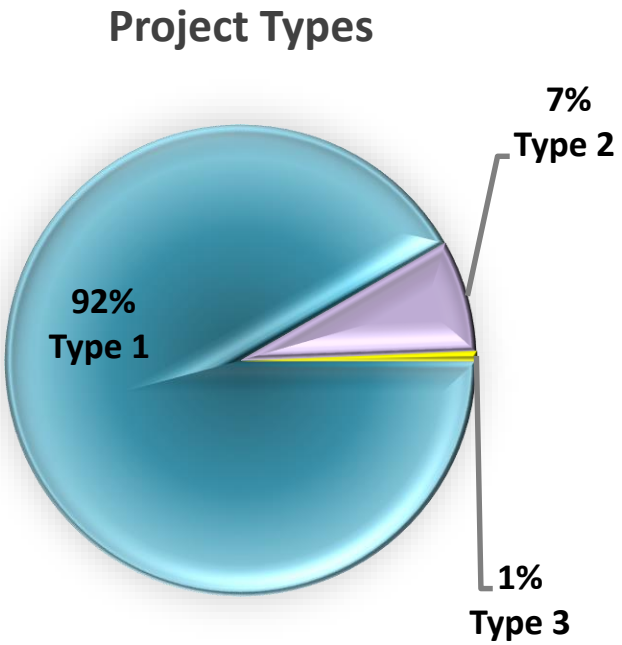
Level 3

480Volt

LADWP EV Project Types

Type 1

No LADWP Upgrade Required
(Adequate Facility)



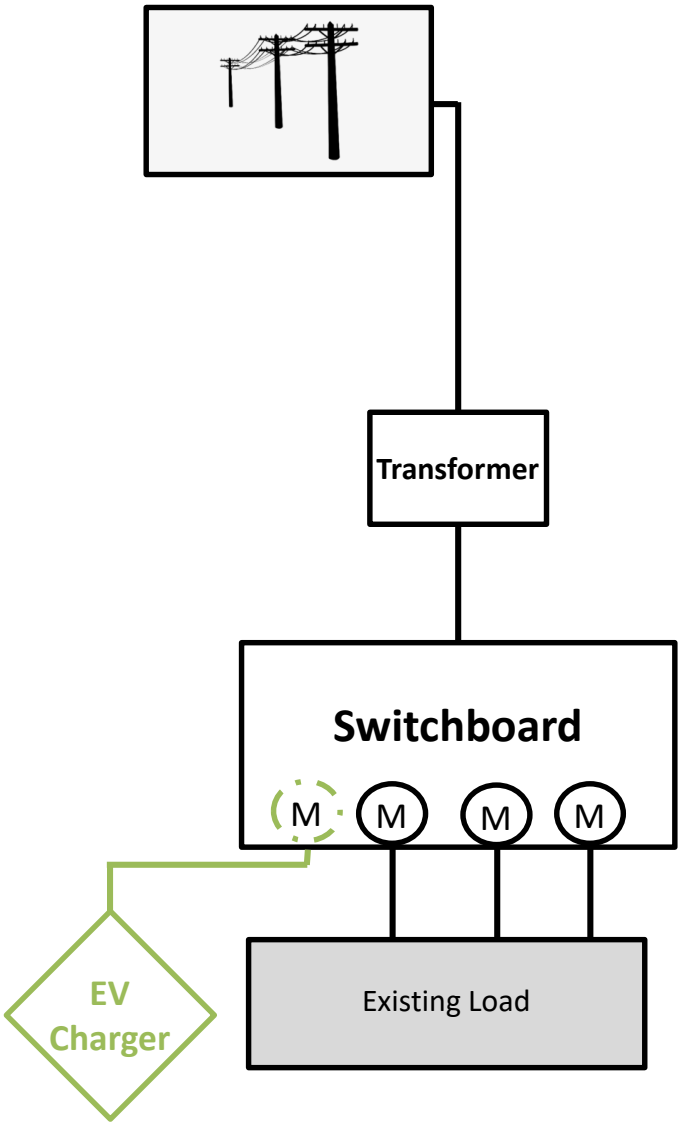
Type 2

Minor LADWP Upgrade Required

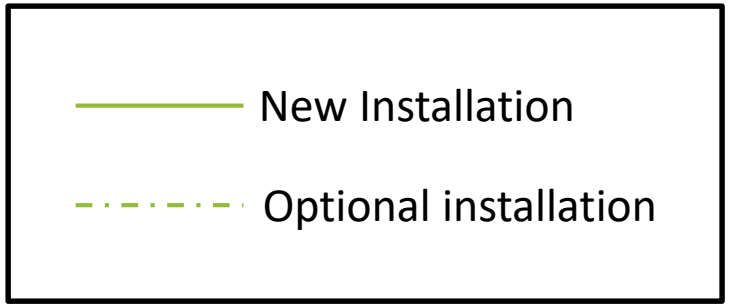
Type 3

New Installation
Major LADWP Upgrade Required

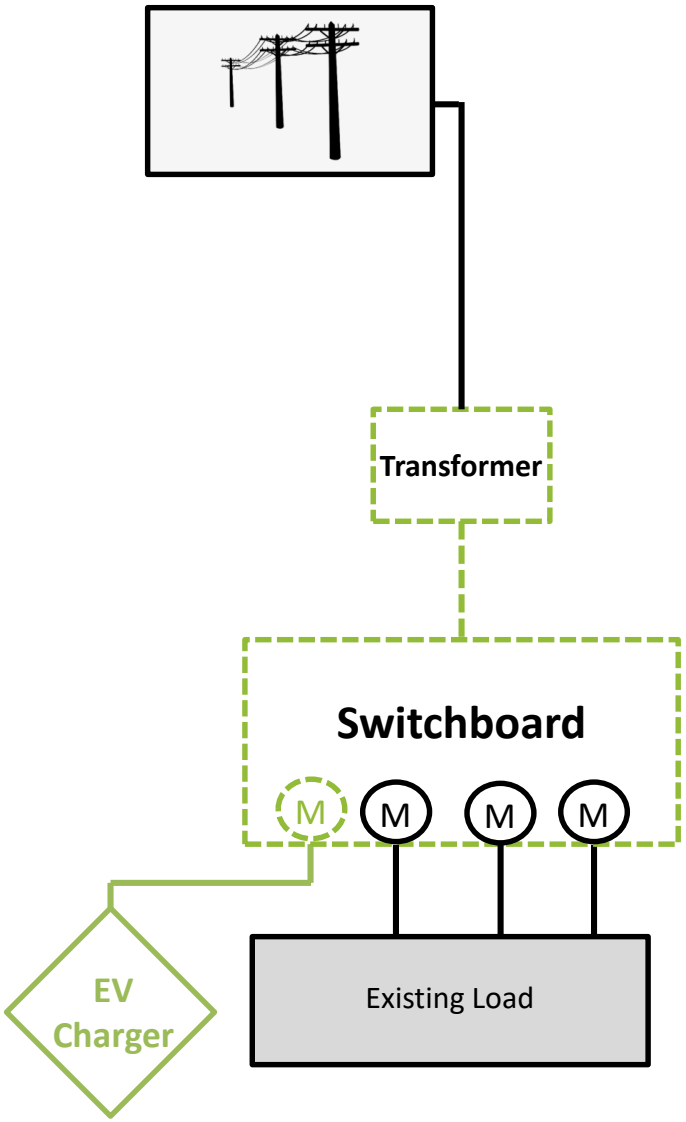
Project Type 1 – No LADWP Upgrade Required



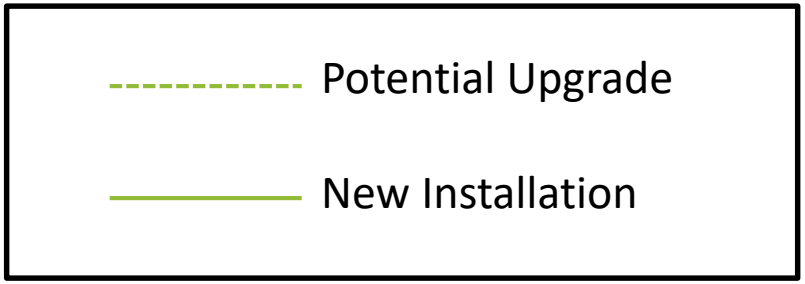
- Adequate Facility Letter (AFL)
- Installation of new EV charger
- Optional Revenue Meter Installed
- No LADWP upgrades required



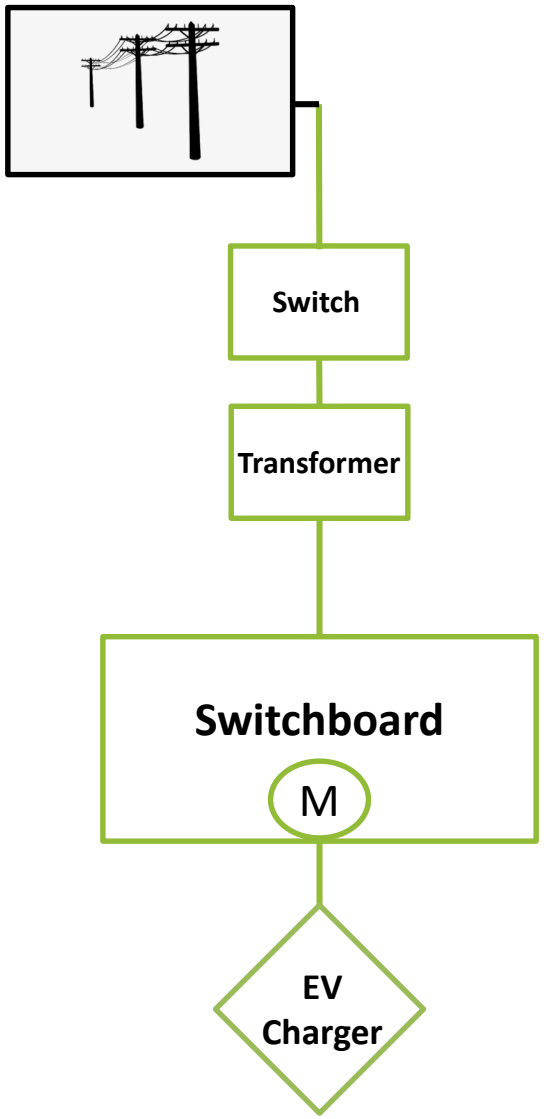
Project Type 2 – Upgrade Required



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



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

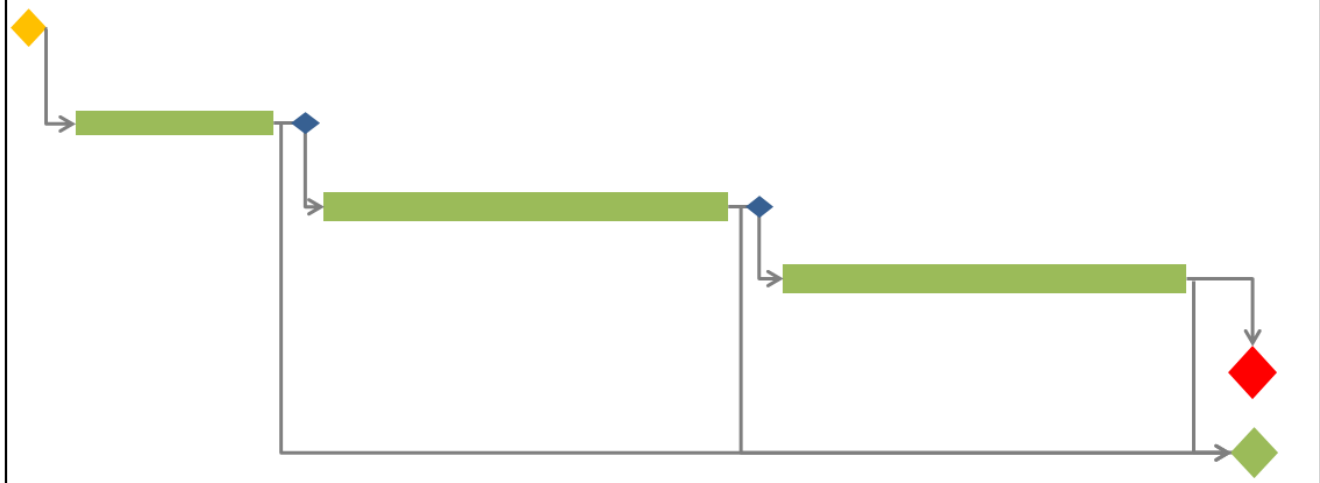
LADWP Electric Vehicle Charger Project Process

Preliminary Phase **Design Phase** **Construction Phase**

- A minimum of (8) project status updates via email throughout the process

Preliminary Phase

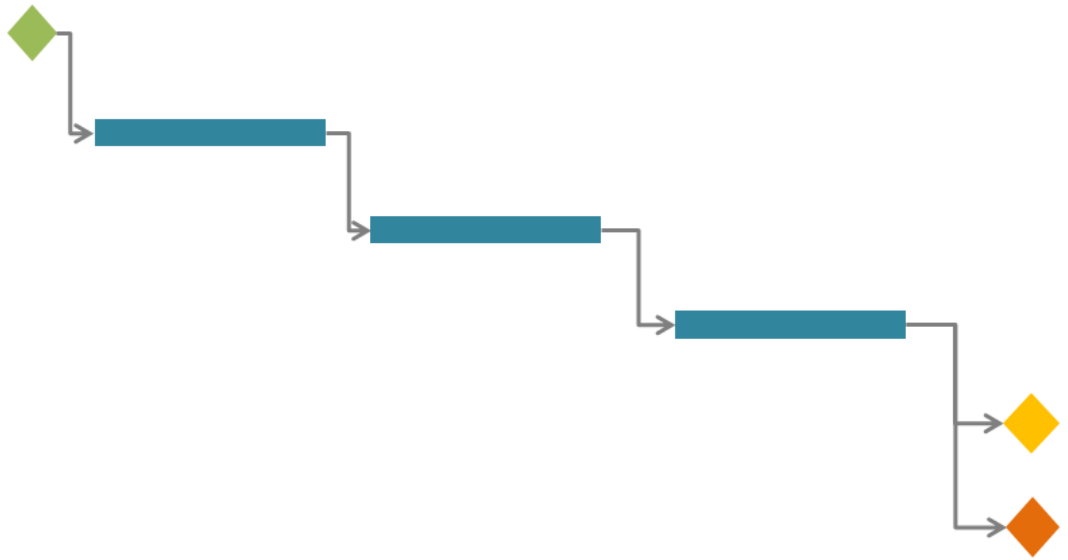
	Start	7 Days	14 Days	14 Days	End
1 Online application for Customer Submittal Package					
2 Customer Submittal Package deemed complete or incomplete					
3 Incomplete Customer Submittal Package: Request for information					
4 Incomplete Customer Submittal Package: Last Request for information					
5 Project Returned to Customer					
6 Customer Submittal Package Complete					



- CUSTOMER SUBMITTAL PACKAGE received: Written review response within 7 days.
- Hold Email – Requesting for more information.
- Customer Submittal Package complete. Job proceeds to Design phase.
- Job returned to customer – Insufficient information provided to move to design phase. Re-submit when customer has necessary information.

Design Phase

		Start	End
1	Customer Submittal Package is complete		
2	Engineer performs Transformer Load Review		
3	Engineer creates Fault Current Report		
4	Engineer performs site inspection		
5	Information Letter sent to customer for Adequate Facility (No Upgrade)		
6	Letter of Upgrade Required sent to customer for service upgrades		



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

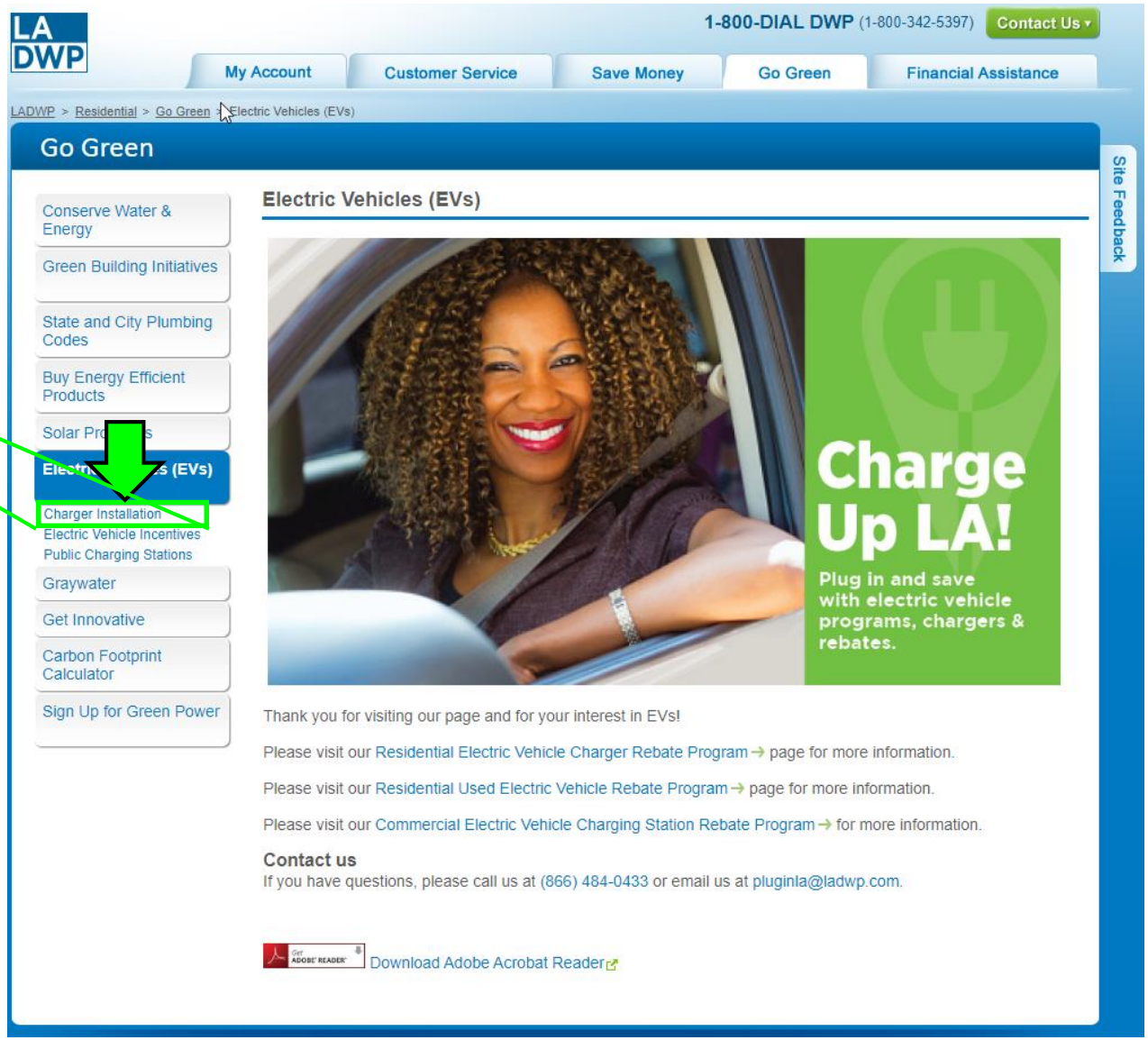
New Installation

- 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

Charger Installation
Electric Vehicle Incentives
Public Charging Stations



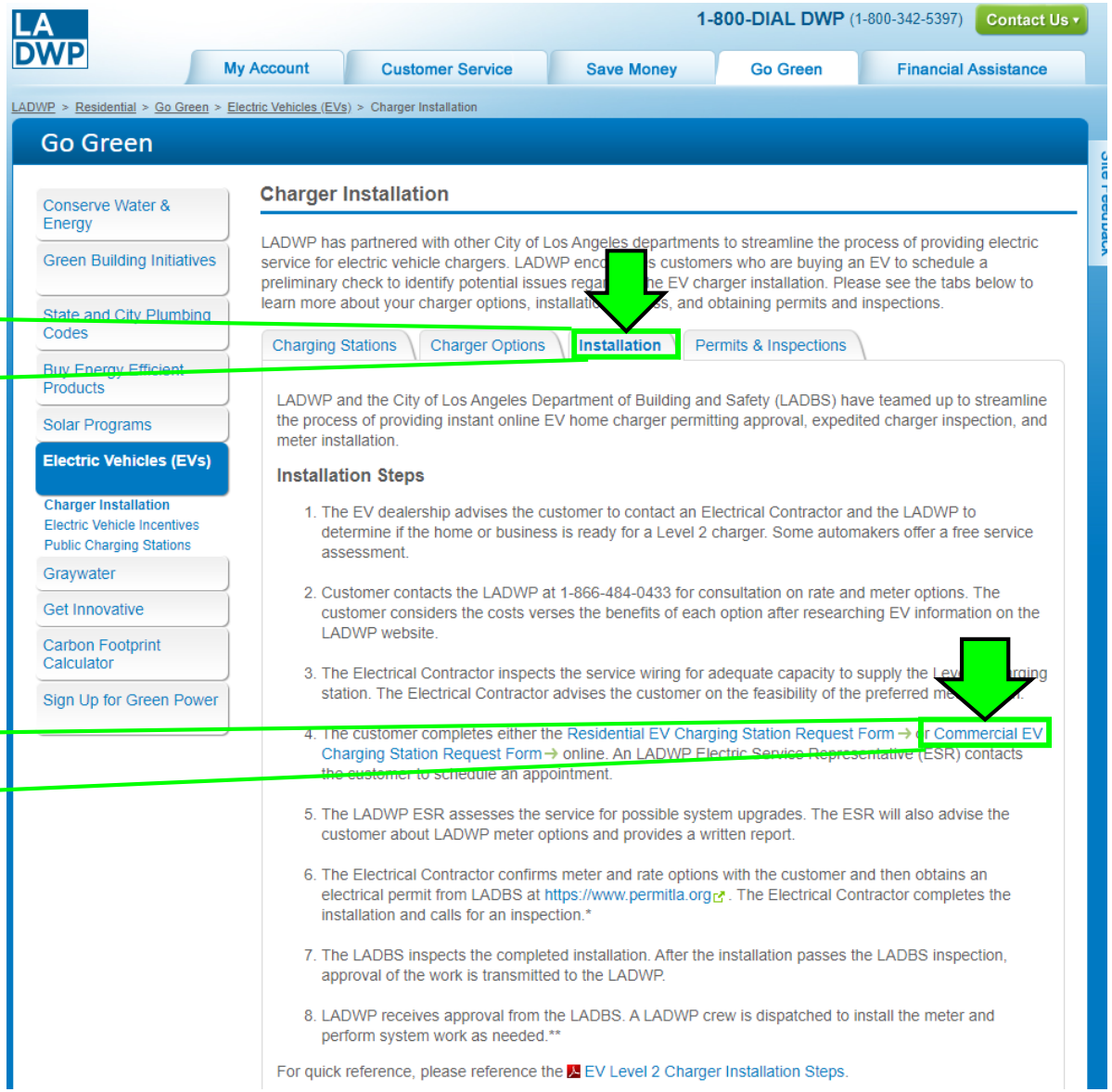
Step 2

Click: Installation tab

Installation

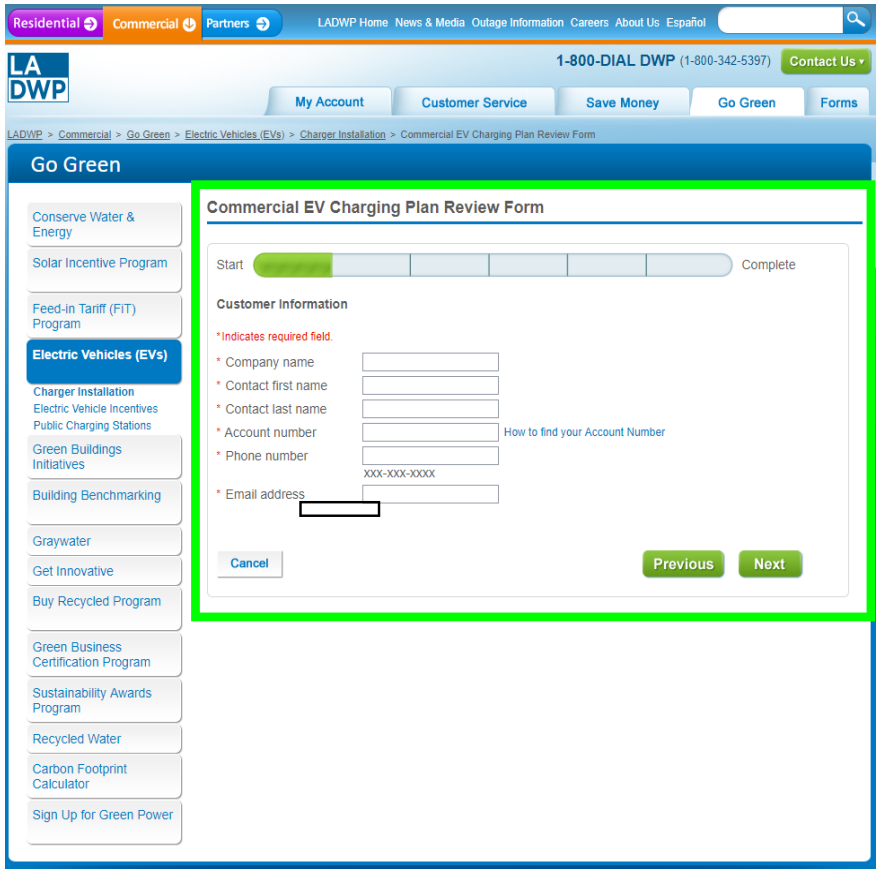
Click: Commercial EV Charging Station Request Form

Commercial EV



Step 3

For **Commercial** Customer



Phone numbers must be formatted with dashes

Be prepared to attach required application information to complete Customer Submittal Package

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 and 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 ampacities. Show the existing and proposed electrical equipment. (Include existing meters with meter numbers).**
6. ☐ **Load schedule summarizing the service ampacity 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).**

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?

LA DWP Los Angeles Department of Water & Power