



Energy for What's Ahead

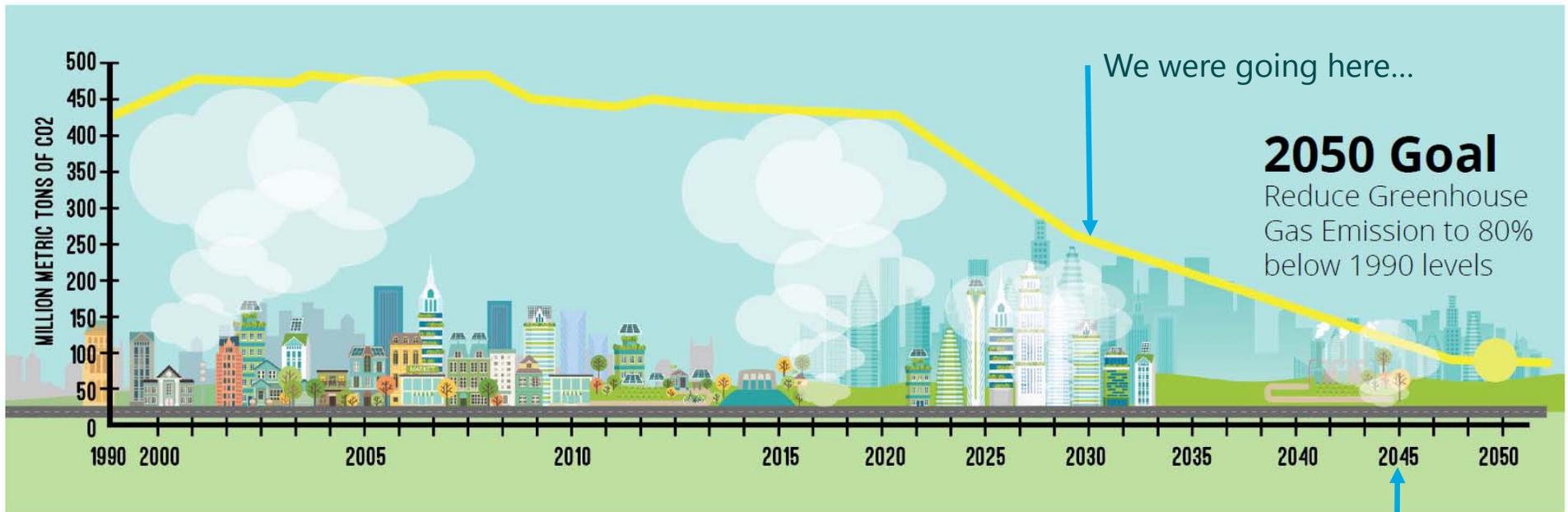
Our Transportation Electrification Pathway

Simon Horton

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

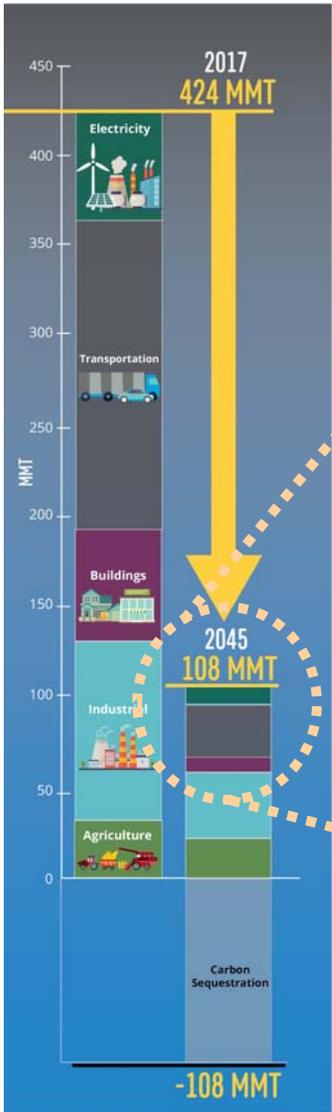


SCE is building upon the Pathway to 2030...

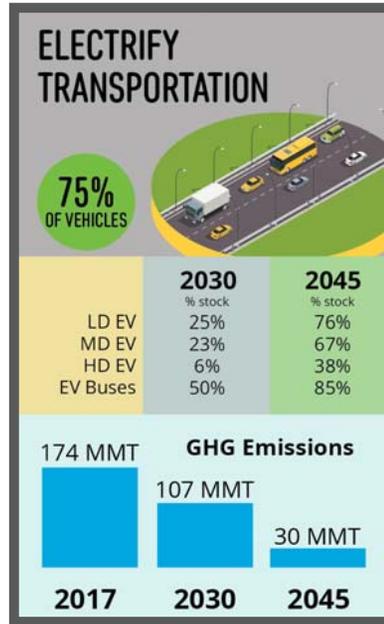


...Now the journey is going farther.

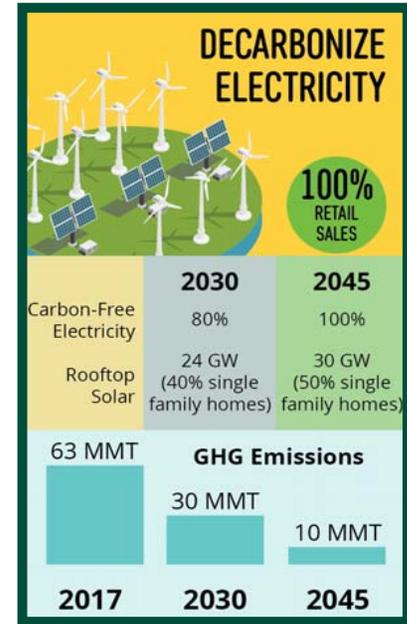
A Multi-faceted Strategy



Customer Service T&D



Customer Service T&D



Power Supply T&D

The Impact of Transportation Electrification

DECARBONIZE ELECTRICITY
100% RETAIL SALES

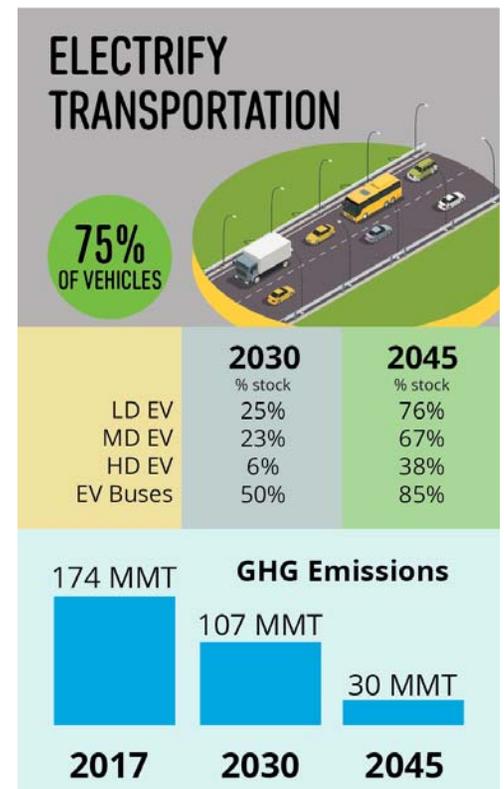
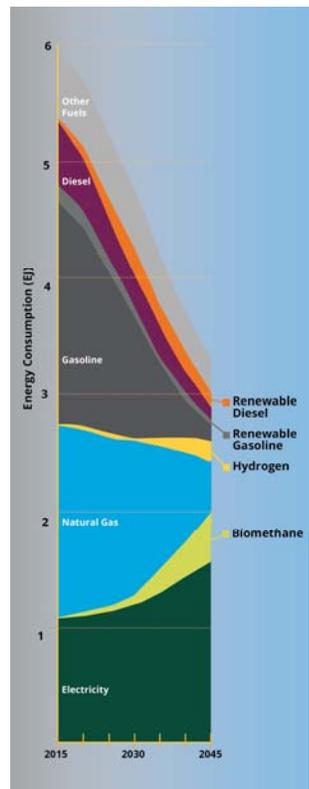
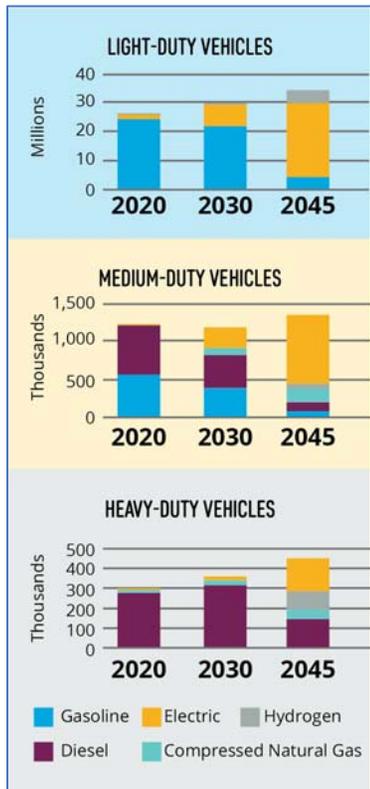
ELECTRIFY TRANSPORTATION
75% OF VEHICLES

ELECTRIFY BUILDINGS
70% OF BUILDINGS

USE LOW CARBON FUELS
43% NON-ELECTRIC ENERGY

SINK REMAINING CARBON
108 MMT

CARBON NEUTRALITY BY 2045



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



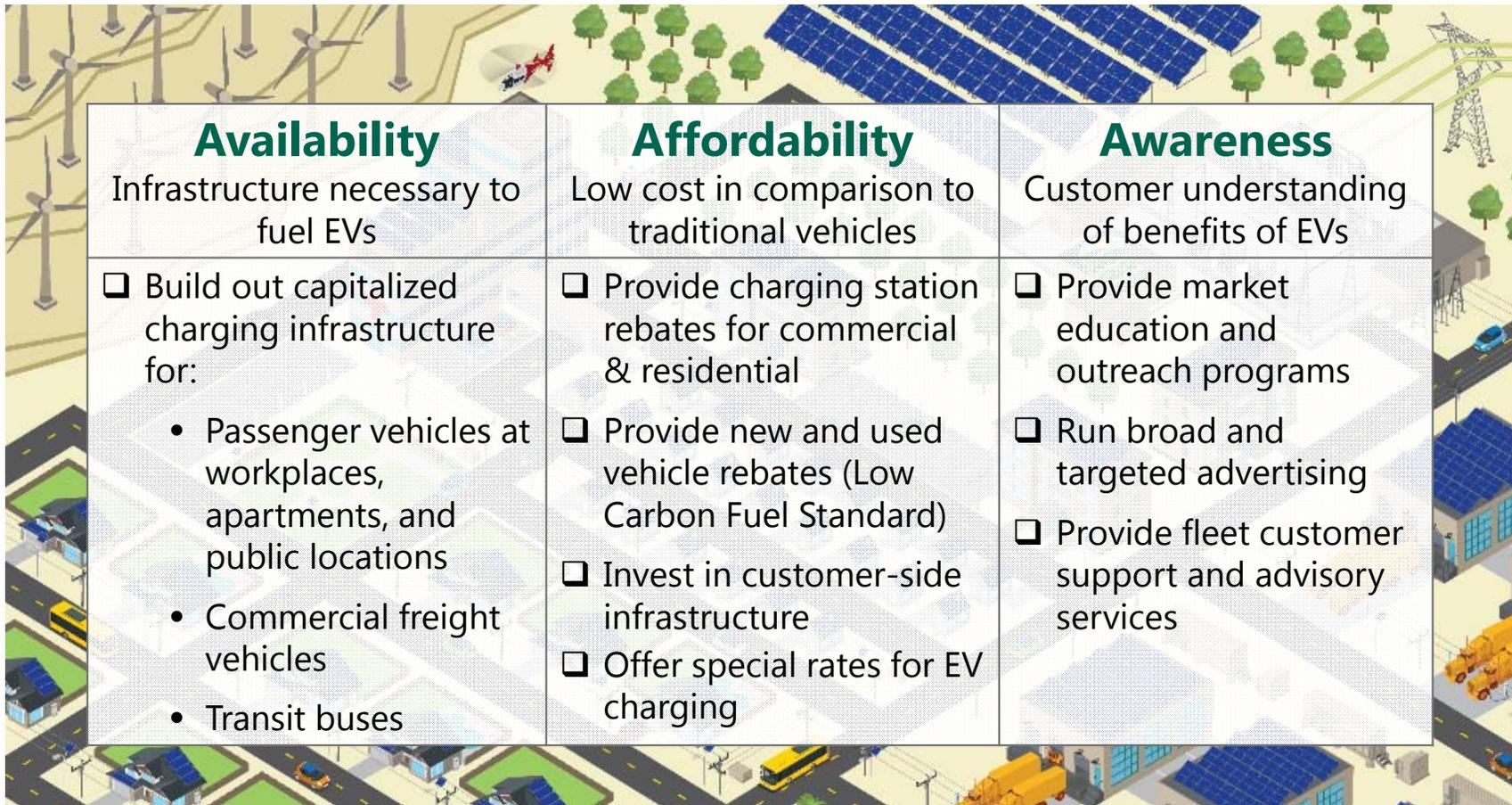
1 out of every 3 (33%) of HD



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



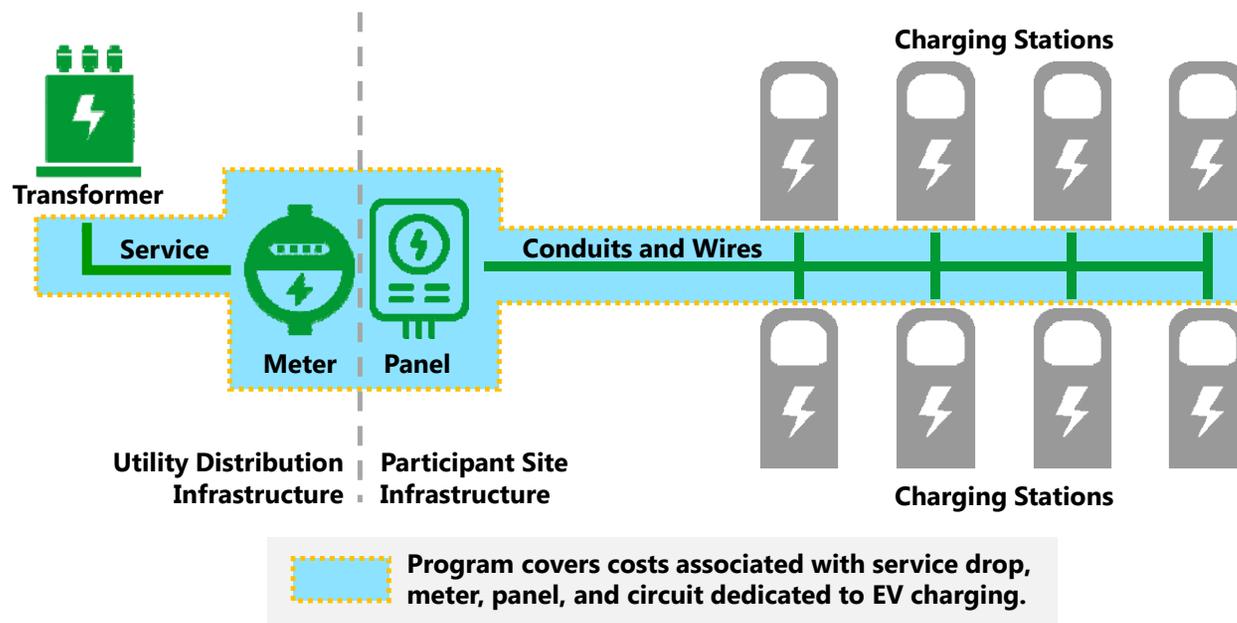
SCE's role: availability, affordability, & awareness



Availability	Affordability	Awareness
<p data-bbox="317 586 785 667">Infrastructure necessary to fuel EVs</p> <ul data-bbox="306 695 795 1219" style="list-style-type: none"><li data-bbox="306 695 795 829"><input type="checkbox"/> Build out capitalized charging infrastructure for:<ul data-bbox="384 857 795 1219" style="list-style-type: none"><li data-bbox="384 857 795 1040">• Passenger vehicles at workplaces, apartments, and public locations<li data-bbox="384 1068 795 1154">• Commercial freight vehicles<li data-bbox="384 1182 795 1219">• Transit buses	<p data-bbox="827 586 1295 667">Low cost in comparison to traditional vehicles</p> <ul data-bbox="816 695 1306 1214" style="list-style-type: none"><li data-bbox="816 695 1306 829"><input type="checkbox"/> Provide charging station rebates for commercial & residential<li data-bbox="816 857 1306 992"><input type="checkbox"/> Provide new and used vehicle rebates (Low Carbon Fuel Standard)<li data-bbox="816 1019 1306 1105"><input type="checkbox"/> Invest in customer-side infrastructure<li data-bbox="816 1133 1306 1214"><input type="checkbox"/> Offer special rates for EV charging	<p data-bbox="1337 586 1778 667">Customer understanding of benefits of EVs</p> <ul data-bbox="1327 695 1774 1105" style="list-style-type: none"><li data-bbox="1327 695 1774 829"><input type="checkbox"/> Provide market education and outreach programs<li data-bbox="1327 857 1774 943"><input type="checkbox"/> Run broad and targeted advertising<li data-bbox="1327 971 1774 1105"><input type="checkbox"/> 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

AVAILABLE NOW



- ❑ 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.



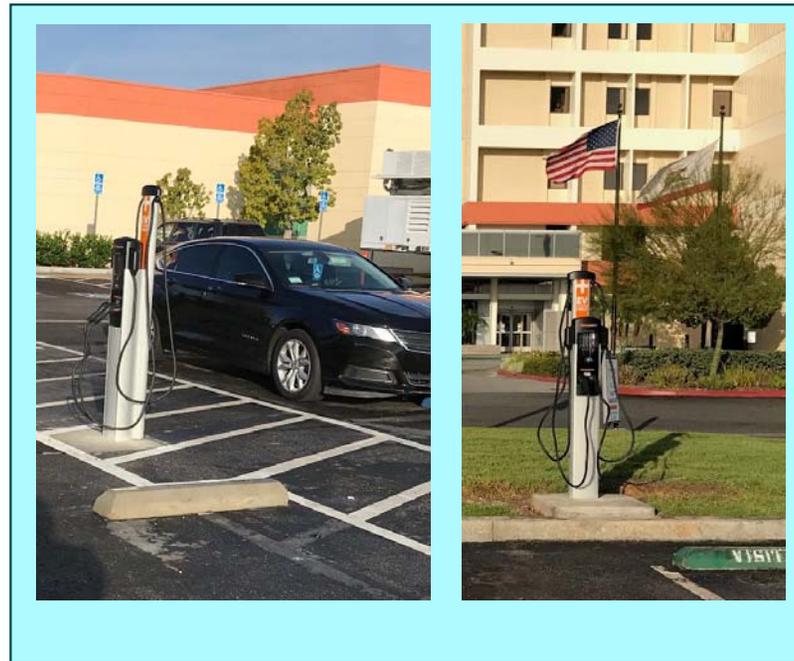
Offer apartments and government customers a turnkey solution: SCE can install, own, and maintain up to 4,230 new charging ports.



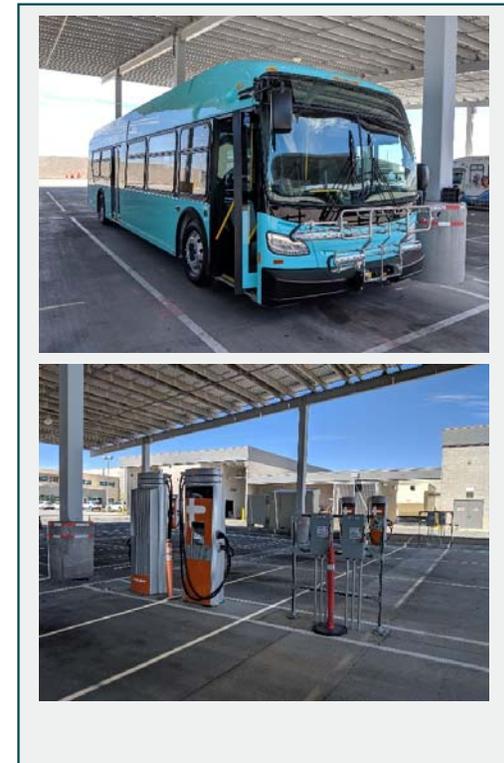
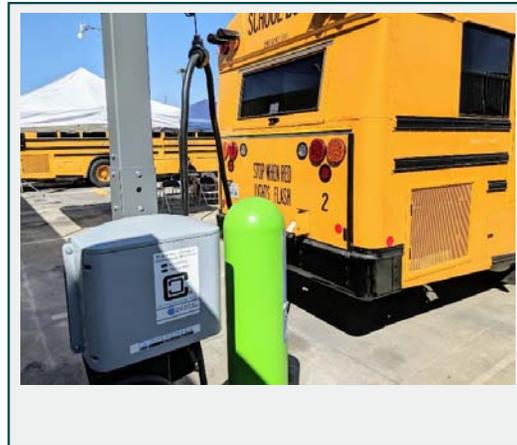
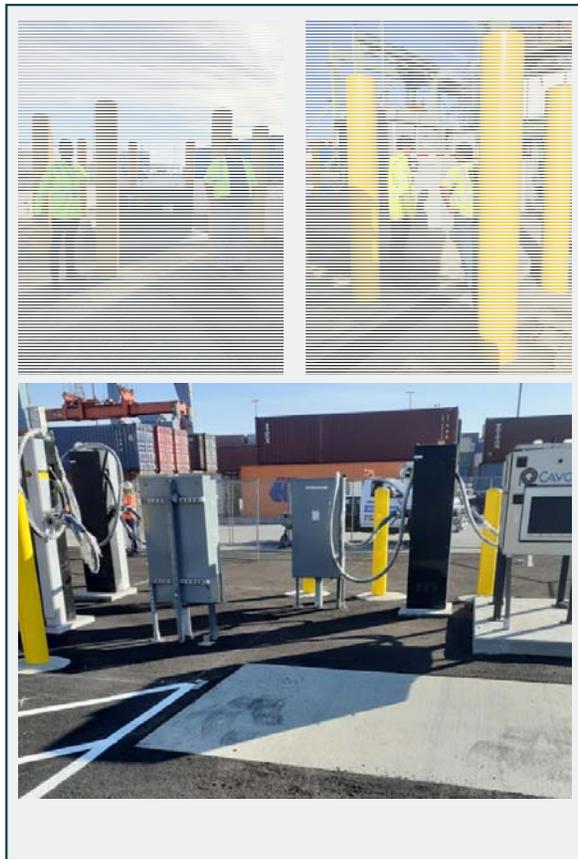
Multi-prong marketing strategy:

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

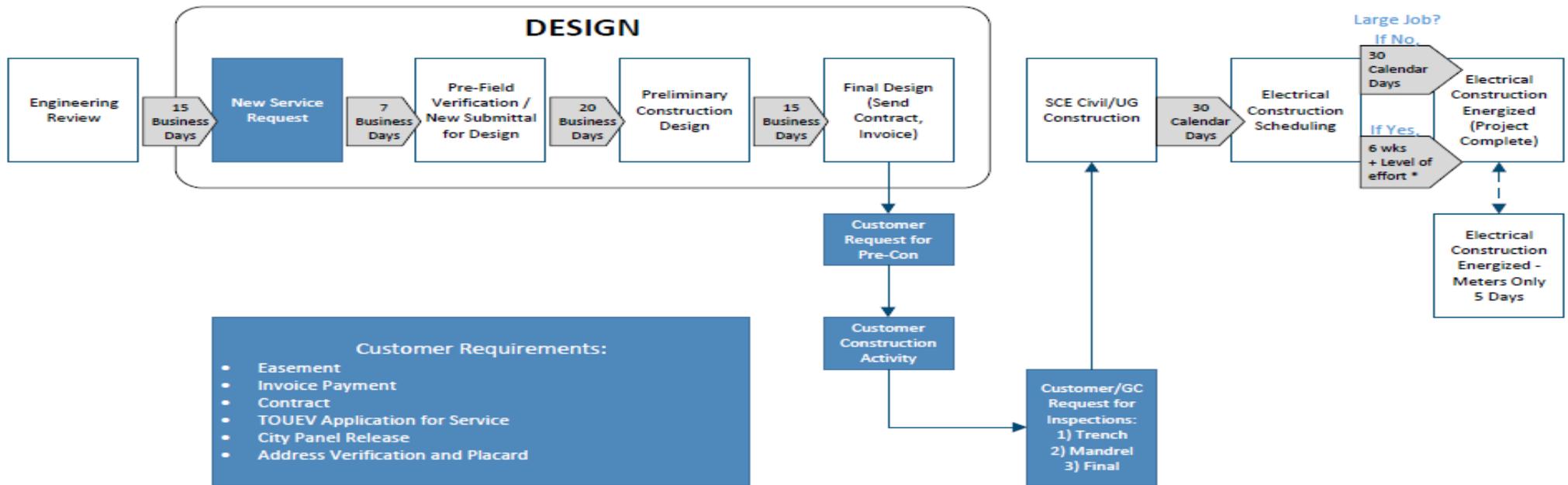
Examples of Completed Charge Ready Projects



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



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



Los Angeles
Department of
Water & Power

Typical EV Chargers

Level 1



120 Volt

Level 2



208/240 Volt

Level 3

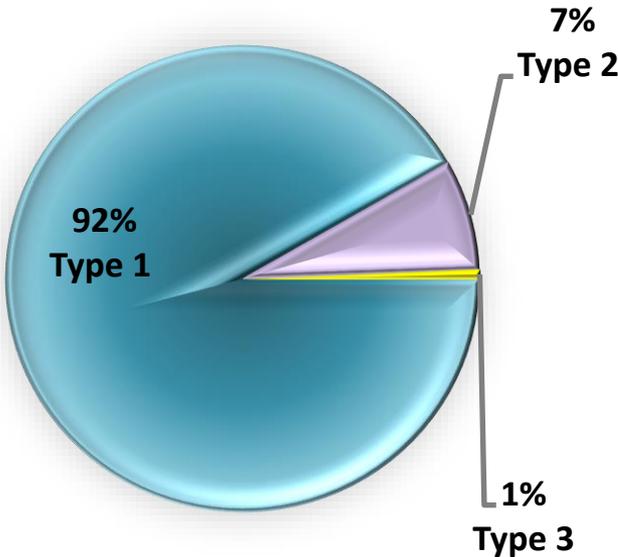


480Volt

LADWP EV Project Types

Project Types

Type 1
No LADWP Upgrade
Required
(Adequate Facility)

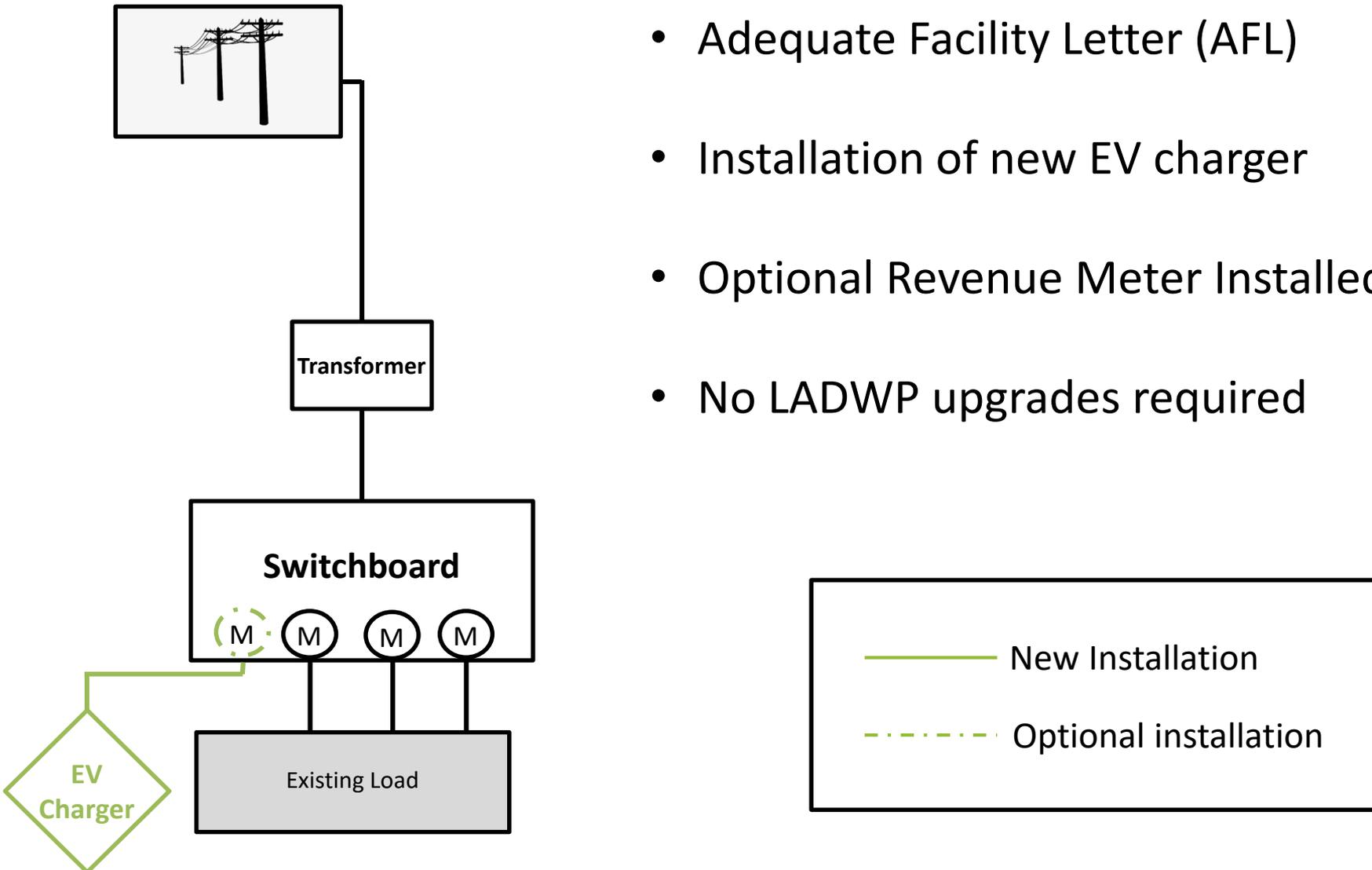


Type 2
Minor LADWP
Upgrade Required

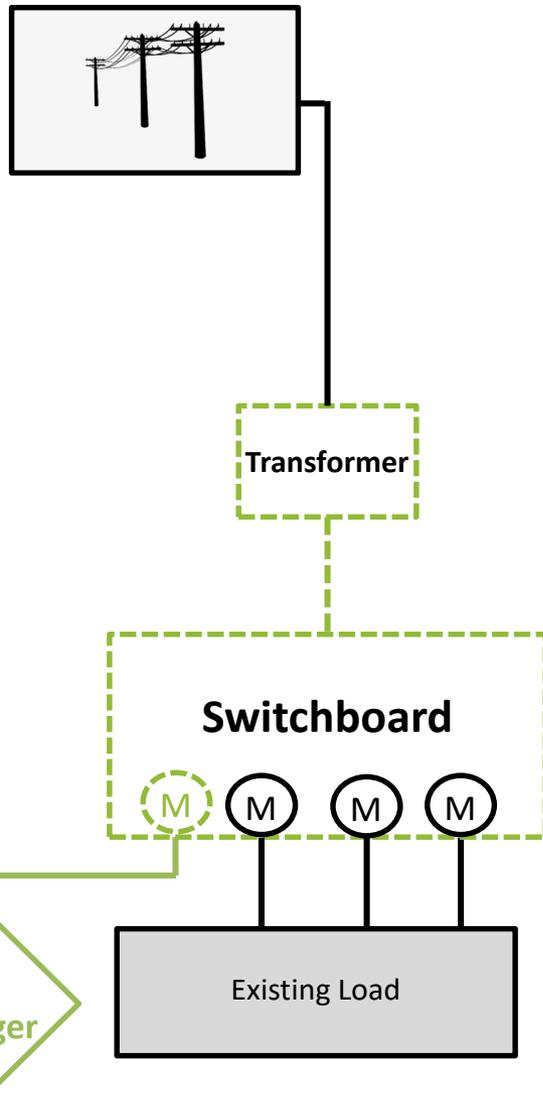
Type 3
New Installation
Major LADWP Upgrade Required

Project Type 1 – No LADWP Upgrade Required

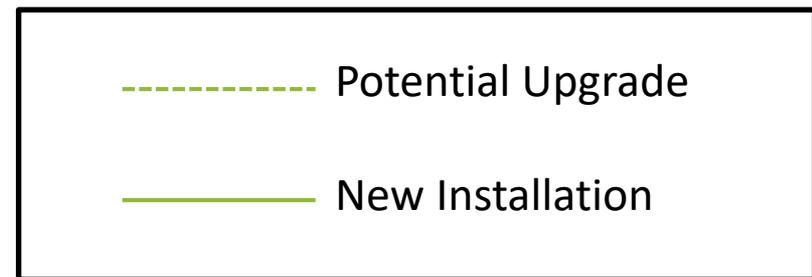
- Adequate Facility Letter (AFL)
- Installation of new EV charger
- Optional Revenue Meter Installed
- No LADWP upgrades required



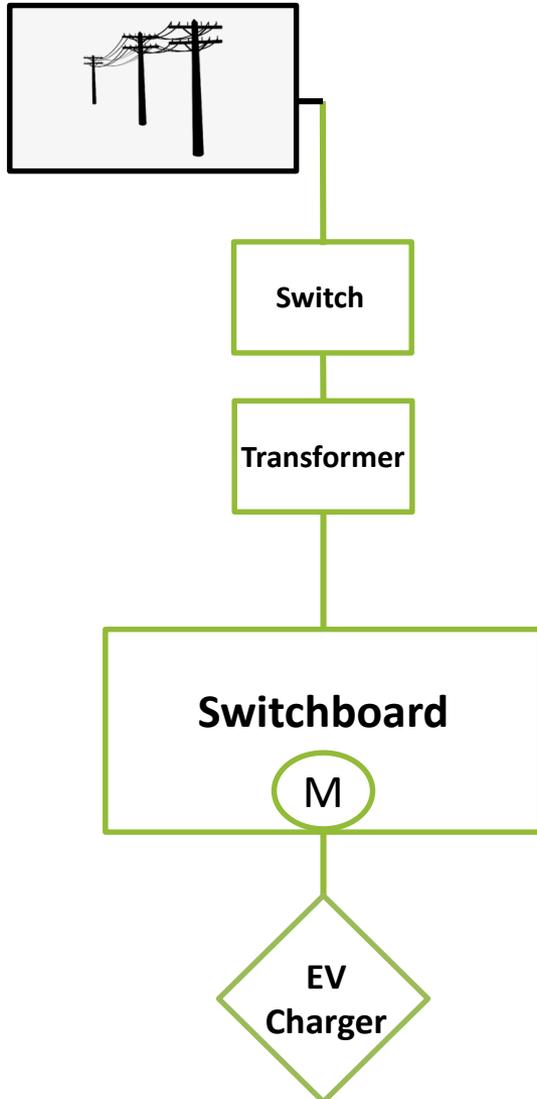
Project Type 2 – Upgrade Required



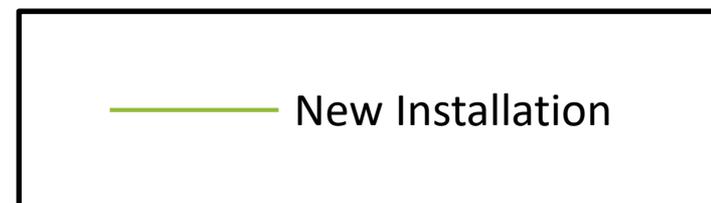
- Minor LADWP upgrade required
 - Upgrade Transformers
 - Upgrade Cables
 - Upgrade Equipment (Service Panel)
- Revenue Meter Installed (Optional)



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



Feasibility Study

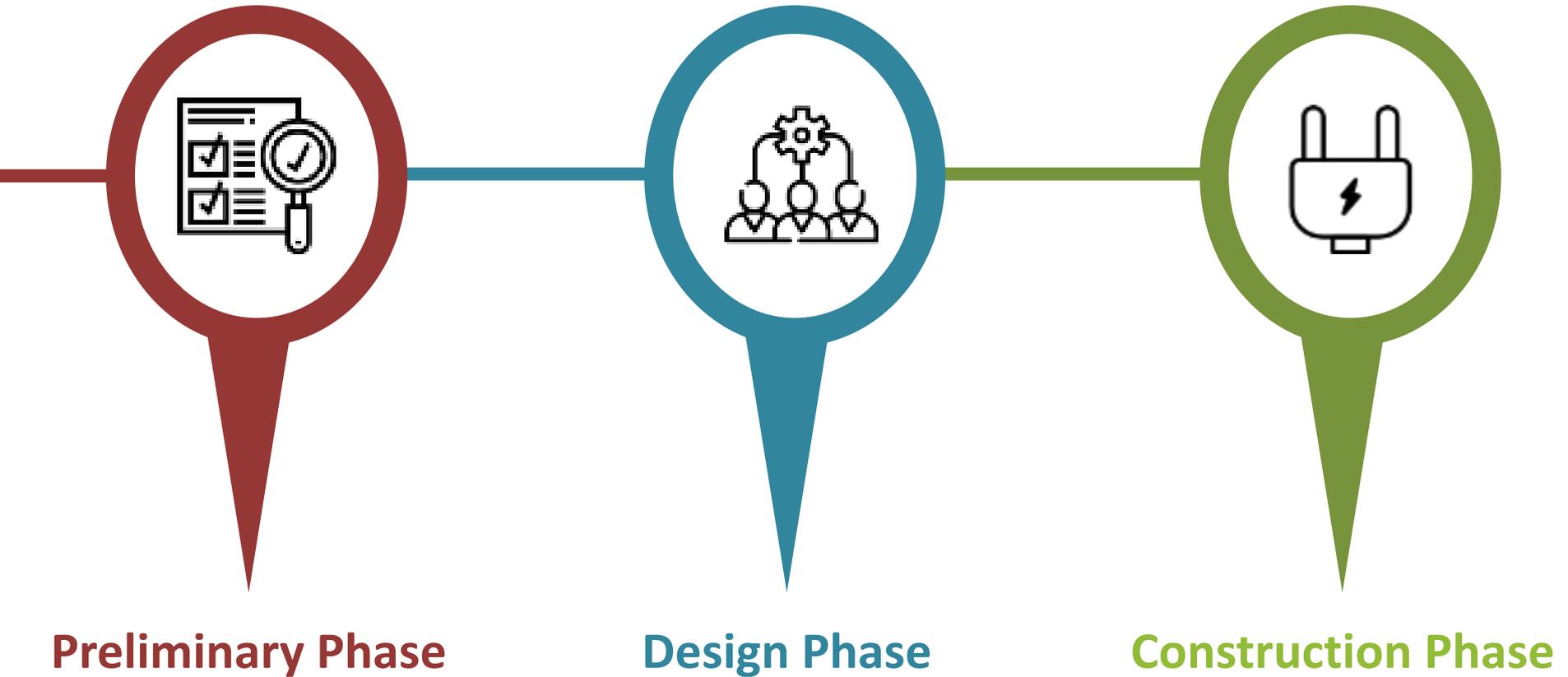
Customer

- 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

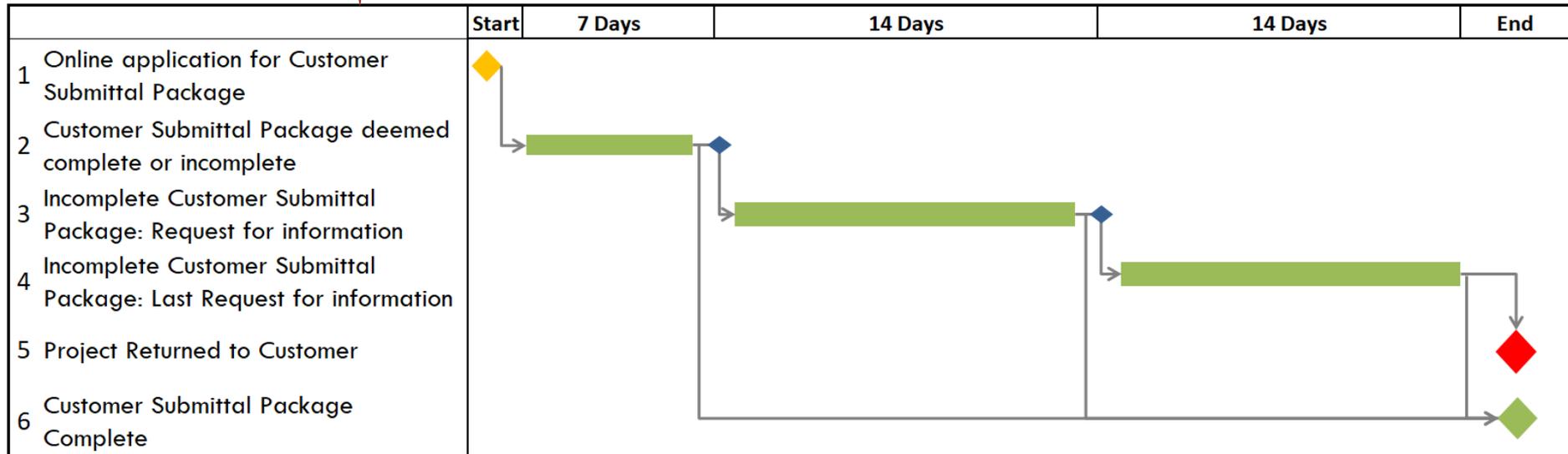
LADWP Electric Vehicle Charger Project Process



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



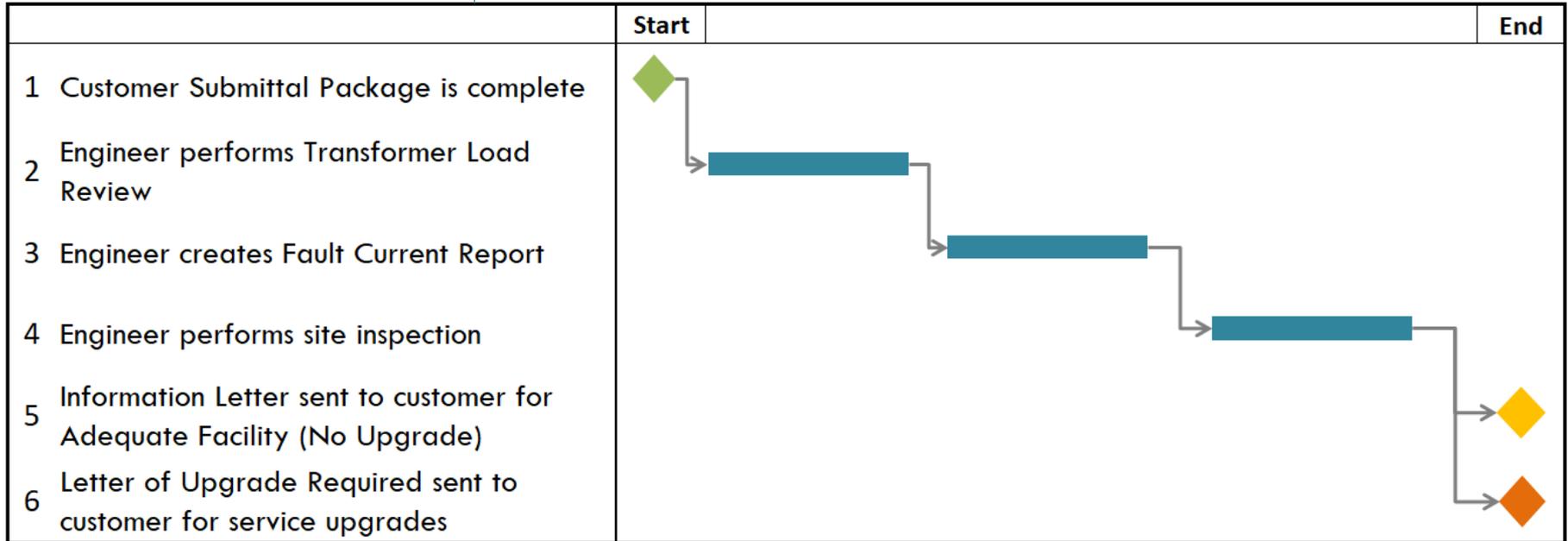
Preliminary Phase



- 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



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>

LA DWP

1-800-DIAL DWP (1-800-342-5397) [Contact Us](#)

[My Account](#) [Customer Service](#) [Save Money](#) [Go Green](#) [Financial Assistance](#)

LADWP > Residential > Go Green > Electric Vehicles (EVs)

Go Green

- Conserve Water & Energy
- Green Building Initiatives
- State and City Plumbing Codes
- Buy Energy Efficient Products
- Solar Programs
- Electric Vehicles (EVs)**
- Charger Installation
- Electric Vehicle Incentives
- Public Charging Stations
- Graywater
- Get Innovative
- Carbon Footprint Calculator
- Sign Up for Green Power

Electric Vehicles (EVs)



Thank you for visiting our page and for your interest in EVs!

Please visit our [Residential Electric Vehicle Charger Rebate Program](#) → page for more information.

Please visit our [Residential Used Electric Vehicle Rebate Program](#) → page for more information.

Please visit our [Commercial Electric Vehicle Charging Station Rebate Program](#) → for more information.

Contact us
If you have questions, please call us at (866) 484-0433 or email us at pluginla@ladwp.com.

 [Download Adobe Acrobat Reader](#)

Site Feedback

Charger Installation
Electric Vehicle Incentives
Public Charging Stations

Step 2

Click: [Installation tab](#)

Installation

Click: [Commercial EV Charging Station Request Form](#)

Commercial EV

LA DWP 1-800-DIAL DWP (1-800-342-5397) [Contact Us](#)

[My Account](#) [Customer Service](#) [Save Money](#) [Go Green](#) [Financial Assistance](#)

LADWP > Residential > Go Green > Electric Vehicles (EVs) > Charger Installation

Go Green

Conserve Water & Energy
Green Building Initiatives
State and City Plumbing Codes
Buy Energy Efficient Products
Solar Programs

Electric Vehicles (EVs)
Charger Installation
Electric Vehicle Incentives
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Graywater
Get Innovative
Carbon Footprint Calculator
Sign Up for Green Power

Charger Installation

LADWP has partnered with other City of Los Angeles departments to streamline the process of providing electric service for electric vehicle chargers. LADWP encourages customers who are buying an EV to schedule a preliminary check to identify potential issues regarding the EV charger installation. Please see the tabs below to learn more about your charger options, installation costs, and obtaining permits and inspections.

[Charging Stations](#) [Charger Options](#) **Installation** [Permits & Inspections](#)

LADWP and the City of Los Angeles Department of Building and Safety (LADBS) have teamed up to streamline the process of providing instant online EV home charger permitting approval, expedited charger inspection, and meter installation.

Installation Steps

1. The EV dealership advises the customer to contact an Electrical Contractor and the LADWP to determine if the home or business is ready for a Level 2 charger. Some automakers offer a free service assessment.
2. Customer contacts the LADWP at 1-866-484-0433 for consultation on rate and meter options. The customer considers the costs versus the benefits of each option after researching EV information on the LADWP website.
3. The Electrical Contractor inspects the service wiring for adequate capacity to supply the Level 2 charging station. The Electrical Contractor advises the customer on the feasibility of the preferred meter.
4. The customer completes either the [Residential EV Charging Station Request Form](#) or [Commercial EV Charging Station Request Form](#) online. An LADWP Electric Service Representative (ESR) contacts the customer to schedule an appointment.
5. The LADWP ESR assesses the service for possible system upgrades. The ESR will also advise the customer about LADWP meter options and provides a written report.
6. The Electrical Contractor confirms meter and rate options with the customer and then obtains an electrical permit from LADBS at <https://www.permits.org>. The Electrical Contractor completes the installation and calls for an inspection.*
7. The LADBS inspects the completed installation. After the installation passes the LADBS inspection, approval of the work is transmitted to the LADWP.
8. LADWP receives approval from the LADBS. A LADWP crew is dispatched to install the meter and perform system work as needed.**

For quick reference, please reference the [EV Level 2 Charger Installation Steps](#).

Step 3

For Commercial Customer

Residential Commercial Partners LADWP Home News & Media Outage Information Careers About Us Español

LA DWP 1-800-DIAL DWP (1-800-342-5397) Contact Us

My Account Customer Service Save Money Go Green Forms

LADWP > Commercial > Go Green > Electric Vehicles (EVs) > Charger Installation > Commercial EV Charging Plan Review Form

Go Green

Conserve Water & Energy

Solar Incentive Program

Feed-In Tariff (FIT) Program

Electric Vehicles (EVs)

Charger Installation

Electric Vehicle Incentives

Public Charging Stations

Green Buildings Initiatives

Building Benchmarking

Graywater

Get Innovative

Buy Recycled Program

Green Business Certification Program

Sustainability Awards Program

Recycled Water

Carbon Footprint Calculator

Sign Up for Green Power

Commercial EV Charging Plan Review Form

Start Complete

Customer Information

* Indicates required field.

* Company name

* Contact first name

* Contact last name

* Account number [How to find your Account Number](#)

* Phone number
xxx-xxx-xxxx

* Email address

Cancel Previous Next

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

- 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)
- 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).
- Type of Facility (i.e. Level II or Level III EV CHARGING STATION). Include Company name and facility (site) number or name.
- Elevation and/or building profile plans (if Applicable).
- 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).
- Load schedule summarizing the service ampacity and all proposed connected electrical loads.
- 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?

