



SOUTHERN CALIFORNIA
EDISON[®]

Energy for What's Ahead[®]

CHARGE READY PROGRAM

Electric vehicle charging solutions for multi-family,
public sector, and commercial properties

Introduction



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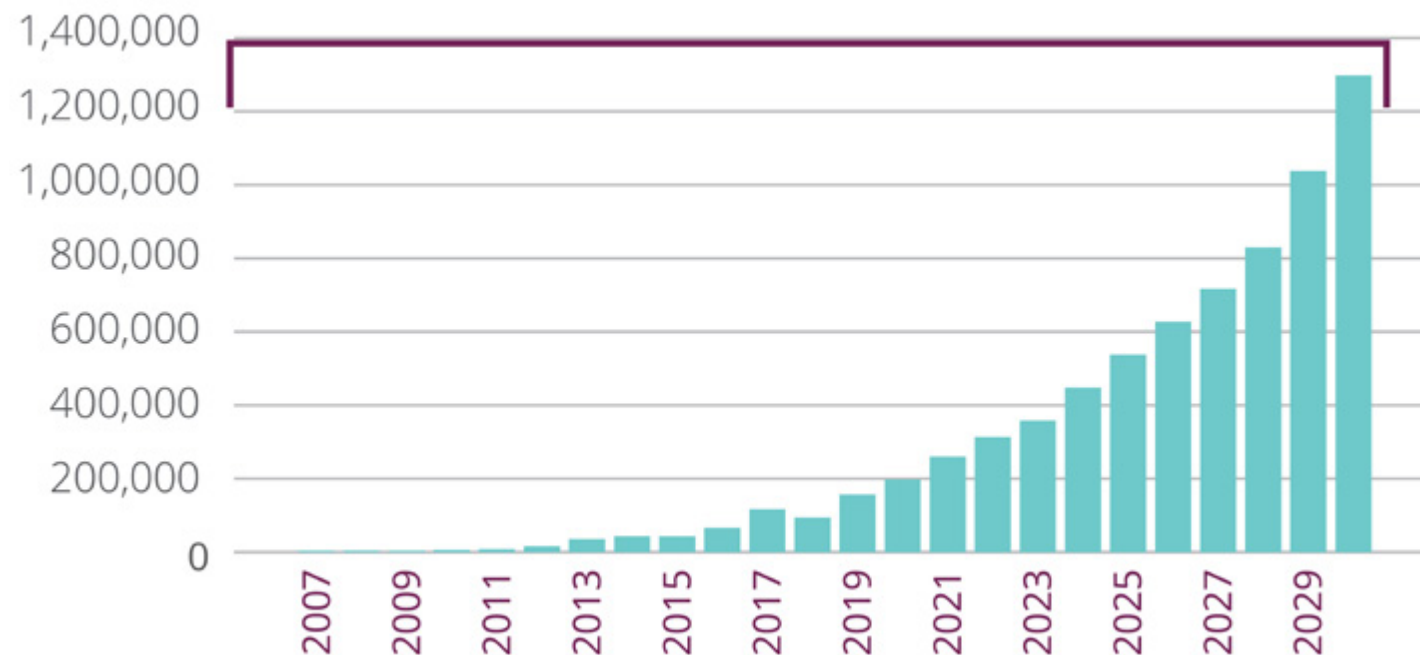
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INTRODUCTION

As California heads into a large-scale transition to electric vehicles (EVs), the SCE service area will need thousands of additional charging stations. By 2035, all new cars, SUVs, and light-duty trucks sold in the state will be zero-emission.¹ SCE projects that 7 million EVs will be on California's roads by 2030,² about 25% of total registered vehicles. SCE's **Charge Ready** has three programs to help deploy EV charging stations at multi-family properties, workplaces, parking lots and structures, and public-sector locations. Specifically designed for commercial account customers and light-duty EVs, **Charge Ready** provides financial incentives and technical assistance to purchase and install charging equipment so you can meet the growing demand for EV charging coming from clients, employees, communities, and/or tenants.

Forecasting California's New EV Registrations to 2030



7 Million EVs on California Roads by 2030.

¹ <https://ww2.arb.ca.gov/resources/fact-sheets/governor-newsoms-zero-emission-2035-executive-order-n-79-20>

² https://download.newsroom.edison.com/create_memory_file/?f_id=5cc3803a2cfac24d1faf3094&content_verified=True

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INTRODUCTION

In this guidebook, you'll find advice to help you select a charging solution for your business or property.

SCE's goal is to provide you with the information you need to:

- Understand the terminology of EVs and EV charging
- Select charger types and placements to fit your users' needs
- Prepare for a professional to install your charging stations
- Understand how charging impacts your electric bill and options for cost recovery
- Decide which **Charge Ready** program is right for you

Each installation is as unique as your business, and the SCE Transportation Electrification Advisory Services team can help you with project specifics. Contact your account manager to take the next step toward your EV future.



EVs and EV Charging Basics



sce.com/chargeready

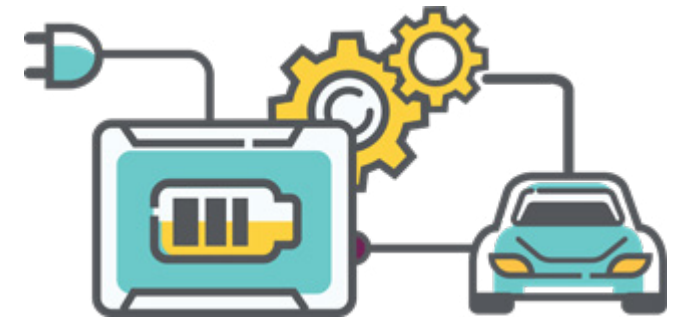
EVs and EV Charging Basics

EVs include plug-in hybrids (PHEVs) and battery-electric vehicles (BEVs). PHEVs are powered by electric charging and a traditional fuel, like gasoline; these vehicles have an all-electric driving range of 10-50 miles. BEVs are fueled exclusively by batteries and have a range of between 70-300+ miles on a full charge.³



Plug-In Hybrid Electric-Vehicle (PHEV)

- Uses batteries to power an electric motor
- Plugs into the electric grid to charge
- Gasoline powers an internal combustion engine



Battery-Electric Vehicle (BEV)

- Powered by one or more electric motor
- Plugs into the electrical grid
- Stores power in batteries



EVs charge their batteries where they are parked for prolonged periods — at work, at home, at school, and where drivers shop, dine, and are entertained — and at fast charging “pit stops” that keep busy people moving.

³ Fuel cell electric vehicles (FCEV) powered by hydrogen are also EVs.

EVs and EV Charging Basics

LEVELS OF CHARGING

Charging stations, also called Electric Vehicle Service Equipment (EVSE), are grouped in three levels that are determined by the speed at which they charge the car's battery. Within each level, EVSE are rated by volts and kilowatts. The higher the number, the faster the EVSE delivers electricity to the battery.

Level 1 EVSE is portable and does not require installation of charging equipment. On one end of the cord is a standard, three-prong household plug. On the other end is a connector that plugs into the vehicle. Level 1 charging can take from seven to 24 hours for a full charge, adding about 3-5 miles of range per hour of charging time, depending on the vehicle.

Level 2 is a piece of charging equipment with power delivered at 240 volts. The EVSE includes a cord that all EVs use to charge. Level 2 EVSEs come in many configurations: wall mounted, pedestal, curbside, and ceiling mounted, and can be networked (referred to as "smart") to accept payment and communicate charging status. Level 2 charging generally takes four to six hours to completely charge a depleted EV battery.

Direct Current Fast Charging (DCFC) is the fastest way to charge an EV and requires a specialized charger on a dedicated circuit that matches the amperage of the EVSE, which can be between 50 and 150 amps. Most BEVs can use a DCFC, but many PHEVs cannot. DCFC charging generally takes less than 60 minutes, and in some cases, can completely charge a depleted battery in less than 30 minutes.



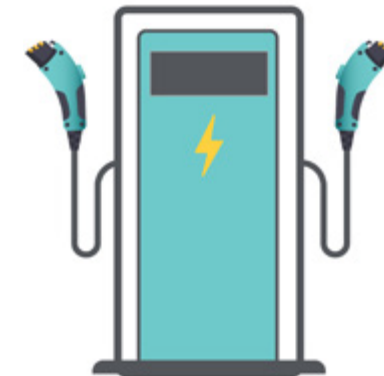
LEVEL 1

- 5-6 miles of range per hour
- 8-20 hours for a full charge



LEVEL 2

- Approx. 3-19 kw and 16-40 amps
- 10-20 miles of range per hour
- 4-6 hours for a full charge



DCFC

- 50-60 kw and 100+ amps
- 80% charge is 20-40 minutes
- 60 minutes for a full charge



Level 2 charging is ideal in locations where vehicles dwell for two to six hours. DCFC is better for drivers who need quick charging during their workday or commute, or do not have access to Level 2 charging at home, work, or school.

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EVs and EV Charging Basics

THE ELECTRIC GRID

Electricity from a generating station can travel thousands of miles through transmission lines until it reaches the local distribution network. Substations and transformers direct the current to customers, stepping down the voltage as the current moves through the grid. If your property has solar panels or a solar array, the solar-created power feeds into the local distribution network, not directly into your building.

Adding EV charging to your property will increase the electricity demand you require from the electric grid. The next few sections walk you through some planning strategies and how SCE will work with you to support your charging infrastructure needs.

Six Useful Terms

Dwell Time – The length of time a car sits still before moving to a different destination

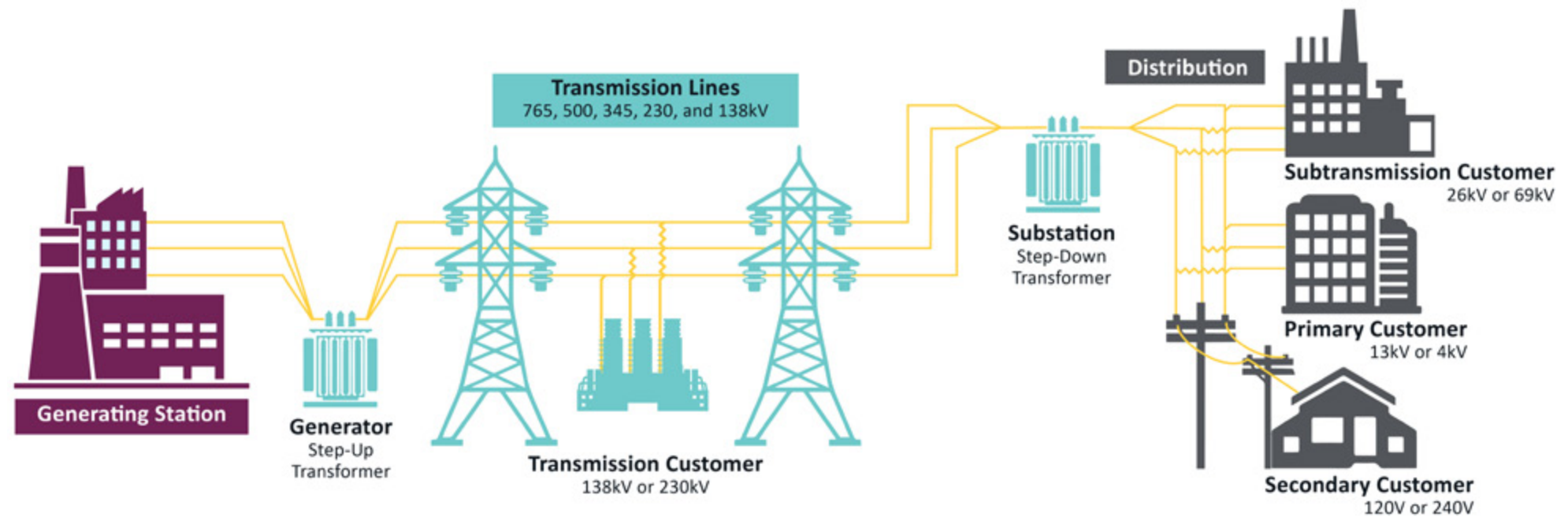
Ports – The number of handles or connectors on a charging station

Amps – Short for amperes, it is the flow of current (like water through a faucet)

kW – Kilowatt, the unit of measure for electricity

kWh – Kilowatt-hour, the number of kW a device uses in an hour (like miles per gallon)

Charge or Acceptance Rate – The rate at which a battery can charge, measured in kW



Choosing a Charger (EVSE)



Choosing a Charger (EVSE)

Choosing a charging station type is largely based on the intended user's dwell time, or the length of time a car sits still before moving to a different destination. Therefore, it's important to understand a little about the drivers for whom you are providing EV charging.

For example:

- If your EV drivers consist mostly of employees who commute less than 50 miles one way, it's likely that they can get a full charge from a Level 2 charger in less than four hours. One charging station with two ports could charge four cars every day if the drivers can move their EVs in the middle of a shift.
- If your EV drivers consist mostly of residents or tenants in a multi-family property that does not have assigned parking, it's likely that once a car is parked, it will sit for the evening. Although you could implement a policy that requires cars in EV parking spaces to be actively charging, it's uncommon for people to leave their homes to move the car in the middle of the night or day.
- If your property has assigned parking spaces, it's safe to assume that only one person will use the charger no matter how long their dwell time. If the typical driver dwells for eight hours or more, Level 1 charging may suit their needs.
- If your EV drivers consist mostly of customers or employees who are on the move — like sales and service people — they will likely have a dwell time of two hours or less. A Level 2 will top off batteries for drivers with shorter dwell times and fully charge their batteries when they stay longer.
- If your EV drivers consist mostly of commuters, tourists who make quick stops on-route, fast charging is likely the best option for them.⁴ It's important to note that some EVs cannot use a DCFC.



For most locations, a Level 2 charger up to 12 kW will fill the needs of customers, employees, and residents.



⁴ DCFCs will be included with Charge Ready later in the program.

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Choosing a Charger (EVSE)

FEATURES AND FUNCTIONS

Comparison Chart for EVSE on SCE's Approved Product List

	Level 1 (1.4-1.9 kW)	Level 2 (7.2-12 kW)	Level 2 (16.8 kW and above)	DCFC (50 kW)
Range per hour (EVs with lower acceptance rates)	5.5 miles of range per hour	15-25 miles of range per hour	25 miles of range per hour	Up to 200 miles of range per hour
Range per hour (EVs with higher acceptance rates)	5.5 miles of range per hour	15-25 miles of range per hour	30-60 miles of range per hour	Up to 300 miles of range per hour
Footprint	Portable	Wall or pedestal mount (about 24x24 inches)	Wall or pedestal mount (about 24x24 inches)	Pedestal (about 46x36 inches, some are larger)
Equipment cost*	\$350-\$550	\$2,500-\$4,900	Up to \$7,210	\$20,000 and above
Service fees for smart chargers	N/A	\$84-\$500 per year per charger	\$84-\$500 per year per charger	\$84-\$500 per year per charger

* Excludes design, permits, and installation.

⁵ From Approved Product List

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Choosing a Charger (EVSE)

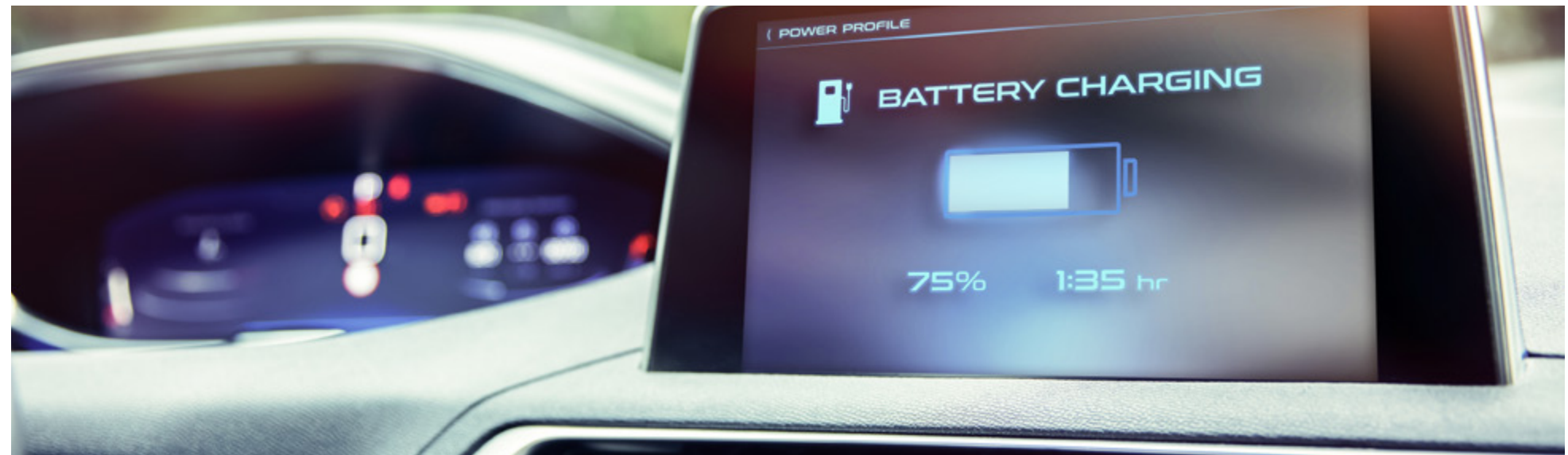
FEATURES AND FUNCTIONS

The **Charge Ready Approved Product List** has a variety of Level 1, Level 2, and DCFC charging stations. The charging stations range in price based on power level, number of ports, type of mounting, networking, and additional management capabilities. This section provides an overview of each option.

Amps and kW

Power level refers to amps coming in from the grid and kilowatts (kW) sent out to a car battery. A charging station with greater amps and more kW can charge a battery faster than a lower-power charging station. Each EV, however, has an acceptance rate that governs the speed at which the battery accepts power. For example, a 2017 Nissan Leaf accepts 6.6 kW, even when connected to a charger that can send 19.2 kW.

Currently, certain cars have higher acceptance rates. If you expect the drivers that use your charging station are driving cars with a higher acceptance rate, it is recommended to invest in charging stations with greater output. If you the EVs you will be charging have lower acceptance rates, in the range of 7.2 to 12 kW, a lower charger output will likely meet their needs.



Choosing a Charger (EVSE)

FEATURES AND FUNCTIONS

Ports and Connectors

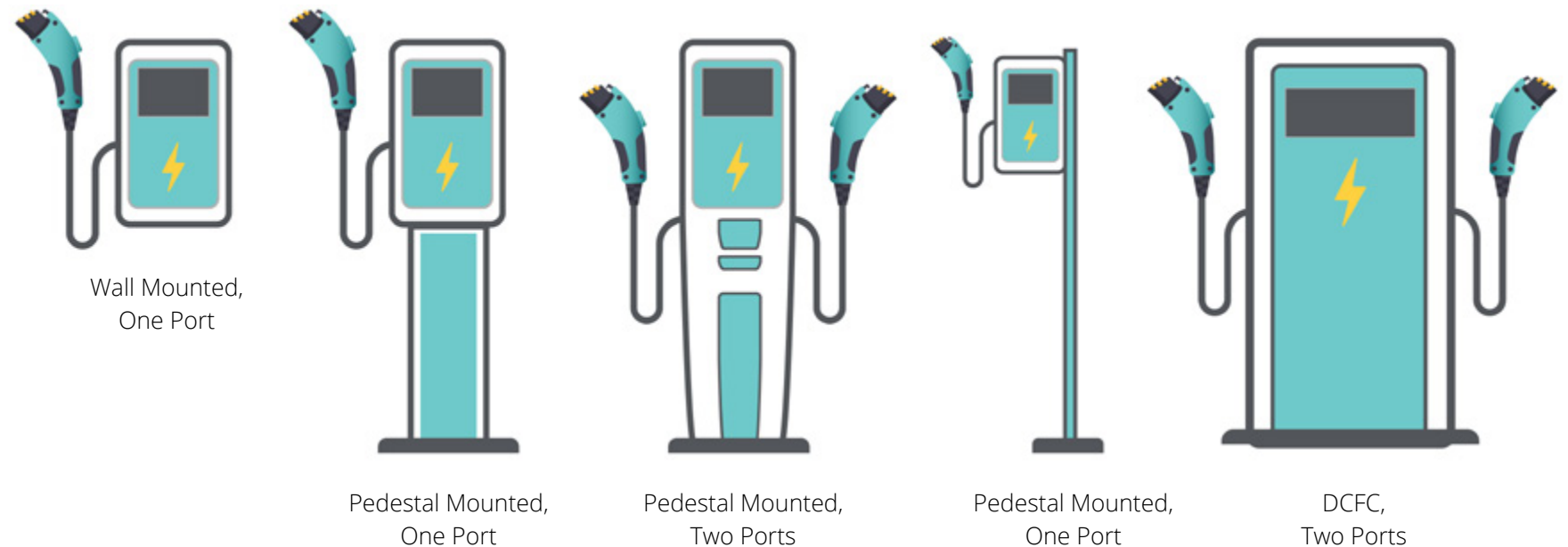
Level 1 charging stations have one port that connects the car to the charging station. Level 2 charging stations can have one port or two ports that are configured side-by-side or back-to-back. A few vendors have EVSEs with three and four ports.

In the U.S. and Canada, all Level 1 and Level 2 charging stations use a connector called SAE J1772, a standard set by the Society of Automotive Engineers.

DCFCs are a little more complicated. Standards were being simultaneously developed in the U.S. and Europe, and the result is that some cars use a connector called CHAdeMO and others use SAE Combo. These two are not interchangeable, just like you can't plug a dryer into a regular outlet or a vacuum cleaner into the dryer outlet. Many DCFCs have a port for each connector.

Tesla cars, however, have their own plug. The cars come with adaptors to enable them to use a J1772 and CHAdeMO connector.

Multiple Port Configurations



Choosing a Charger (EVSE)

FEATURES AND FUNCTIONS

Mounting

Charging stations have a variety of mounting options to make the best use of available space. In surface parking lots, Level 2 and DCFC stations are typically mounted on a pedestal. Options are:



In the parking space

Most cities require bollards, or posts, to protect the pedestal, which can be flush to the pavement or on a riser.



On the curb

Cities often require trees and other plants, which also presents an opportunity to add charging stations.



On the sidewalk

The city may require bollards on a sidewalk installation. Important considerations include that the cord doesn't cross a walkway or bike lane, and that the unobstructed walkway is at least 48 inches wide.



Wall mounted

Level 1 and Level 2 charging stations can also be wall mounted, and the conduit for wiring can be inside the wall or exposed.

Choosing a Charger (EVSE)

FEATURES AND FUNCTIONS

Networking and Smart Charging

Smart charging, also called networked charging, means that the charging station has a data connection and can communicate with payment systems, vehicles, other charging stations, the station operator, and the grid.

Smart chargers can:

- Accept payment via credit card, RFID card, or a phone app.
- Automatically report their availability to dynamic maps. Drivers can see that a charging station is available or in use. Advanced features may allow drivers to reserve charging times or be notified via text message when another driver unplugs.
- Respond to signals from SCE that helps reduce energy use during peak load times. This is also known as demand response.

The communication gateway can be integrated into the station, typically a cellular chip, or require an external device like a kiosk or a control unit with a wireless router. If using an external device, all charging stations on the property use the same gateway.

Station providers charge a monthly fee for networking services that can usually be paid on an annual basis. The network service charge may also include payment processing fees. When you select a vendor from the [Approved Product List](#), the vendor will tell you how each charging station's gateway is implemented and the annual network service charge.

Some smart chargers can also balance the electrical load between ports or among charging stations to manage energy flow. The [Energy Management Best Practices](#) section has more information about load balancing and peak electricity.



Deciding on the Number of Ports



Deciding on the Number of Ports

The **Charge Ready** programs require a minimum of four charging ports.⁶ If you expect that most of the cars in your parking lot will transition to EVs in the next five years, it can be cost effective to complete the construction at one time. However, many cities have local codes that require that parking spaces with access to EV charging be labeled “EV Charging Only,” which may reduce the availability of parking for non-EVs.

To determine if you want to install more than four ports:

- Survey your tenants or employees to understand how many already own EVs and how many would buy an EV if charging was available.
- Estimate the number and types of EVs in your community and the number of public charging stations already available for public charging.
- Consider the requirements of local and state building code requirements. If you are constructing or remodeling a property, state and local building codes may require a percentage of parking spaces to support EV charging. In some cities, it is as high as 10% of parking spaces.

The **toolkits** at the end of this guide have example surveys and resources to help you estimate future EV charging needs.



A good rule of thumb for a business or public parking lot is one car per port every four hours during the workday. For a multi-family building, assume one car per port overnight because residents typically don't move the car once they arrive at home.

⁶ If you want to install fewer than four ports, please contact chargeready@sce.com

Selecting Parking Spots for Charging Stations



Selecting Parking Spots for Charging Stations

Businesses often install charging stations near the main entrance or in the first row of parking spaces. It is a great way to show your support for clean vehicle technologies and encourage employees and customers to drive EVs.

Three additional factors should guide your decision about selecting parking spots for EV charging:

- Compliance with state building code and the Americans with Disabilities Act (ADA)
- Lighting and weather protection
- Distance from the electrical supply

ADA COMPLIANCE

Parking spaces that have charging stations must comply with local building codes, the California Building Code, and the Americans with Disabilities Act (ADA). Your construction partner will know how to comply with the codes that dictate the minimum length and width of standard and ADA parking spaces, the amount of space needed for an accessible route from the parking area, and all required signs and markings.

The diagrams on the next few pages give you an idea of the flexibility of charging stations to fit on your property.

The big picture items you need to know are:

- An EV parking space counts toward your minimum or maximum parking spaces, just as an ADA space counts.
- In a shared or public parking lot, at least one charging port must be adjacent to an ADA van-accessible space. This doesn't apply to assigned parking spaces.
- Your city may require that EV parking spaces have an "EV Charging Only" sign or pavement marking.



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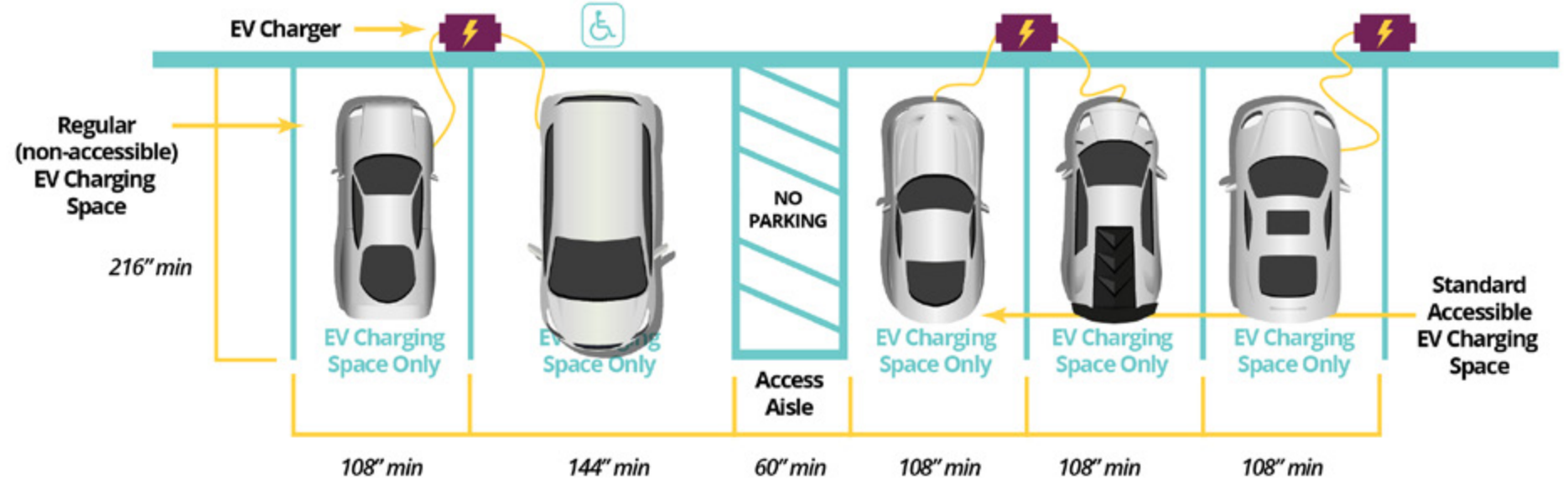
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Selecting Parking Spots for Charging Stations

ADA COMPLIANCE

Standard Parking Lot with Pedestal-Mounted Charging Stations on a Walkway



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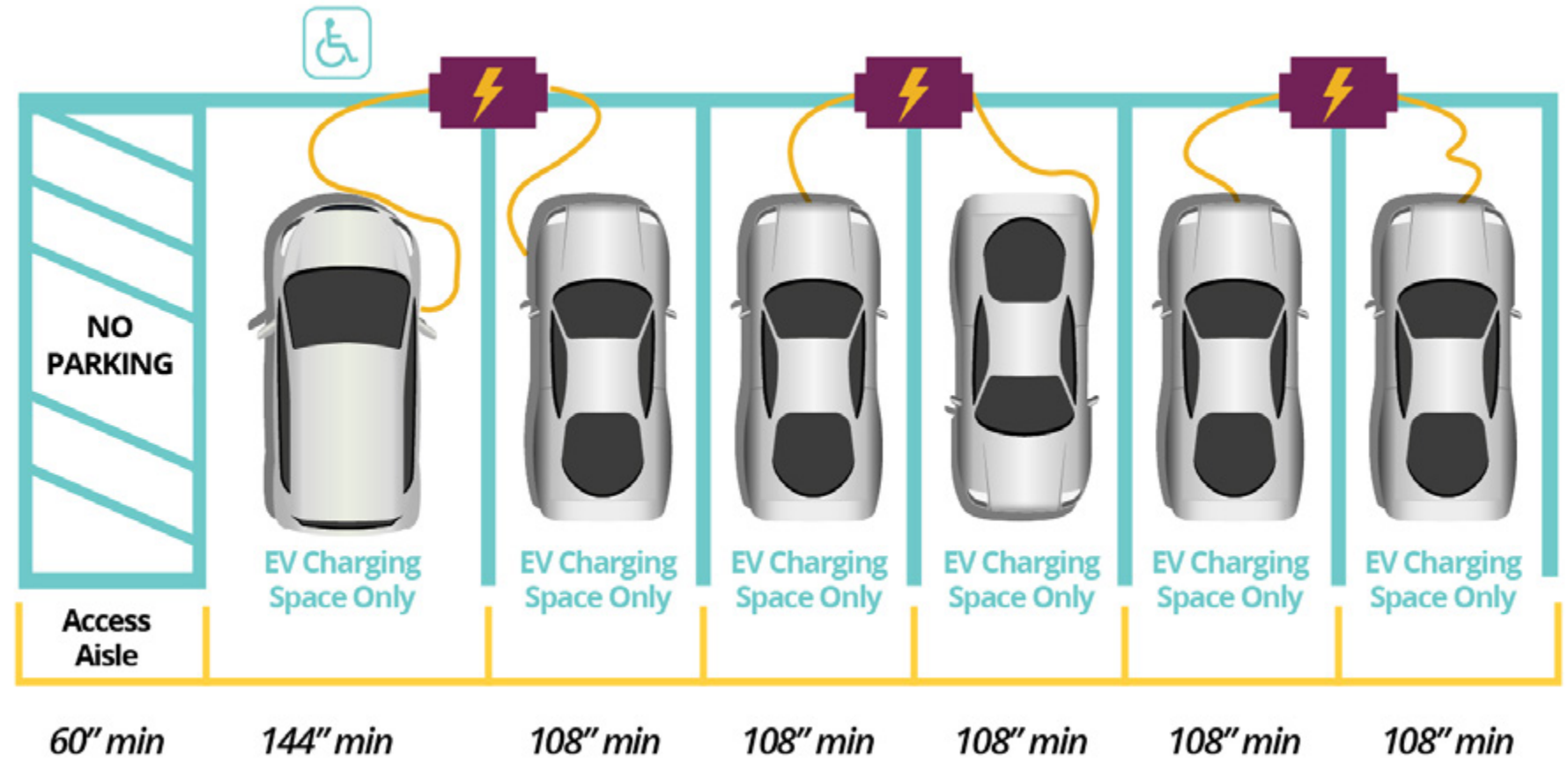
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Selecting Parking Spots for Charging Stations

ADA COMPLIANCE

Standard Parking Lot with Pedestal-Mounted Charging Stations in the Parking Space



Note that these spaces are slightly longer to allow space for the charging stations.

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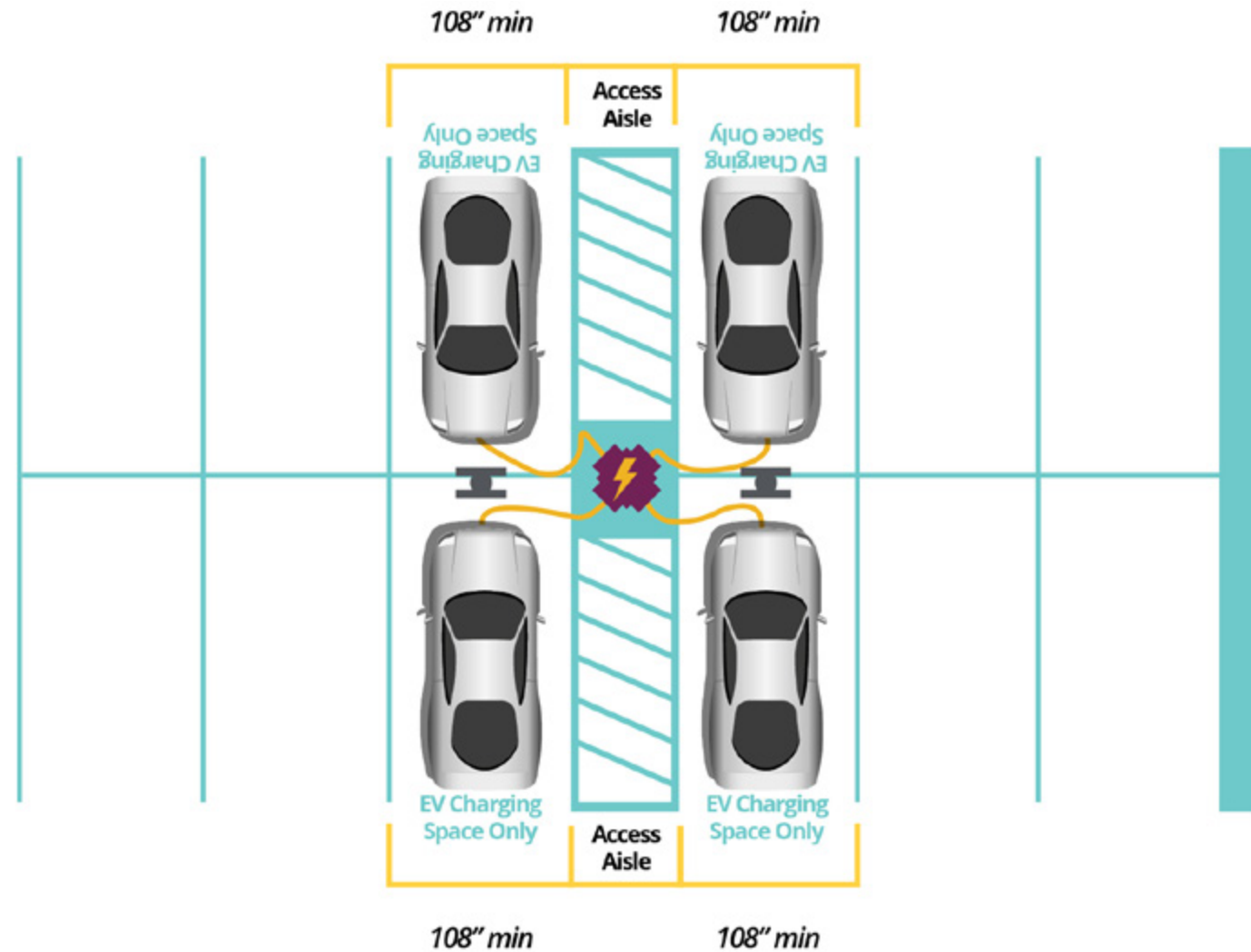
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Selecting Parking Spots for Charging Stations

ADA COMPLIANCE

Parking Lot with EV Charger Installed in Median



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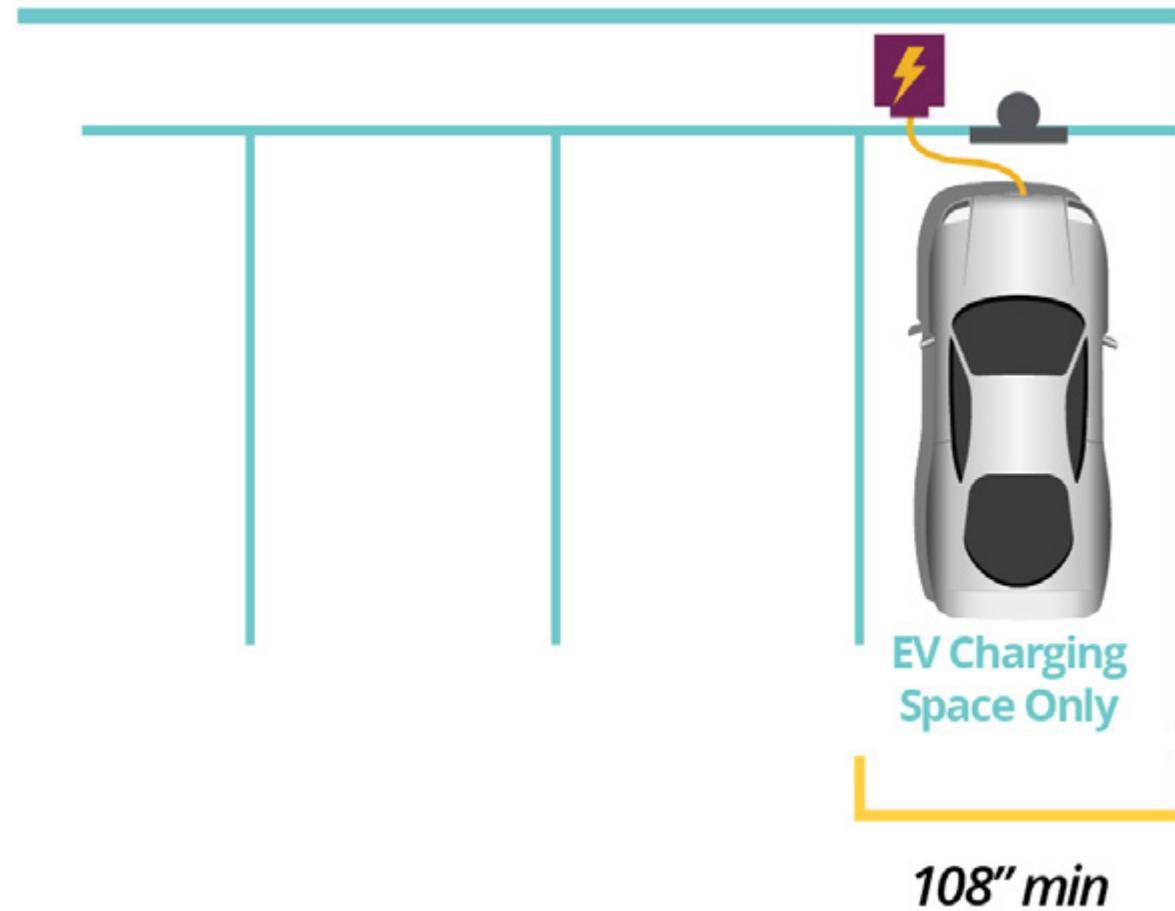
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ADA COMPLIANCE

Wall-Mounted Charging Station in an Assigned Parking Space



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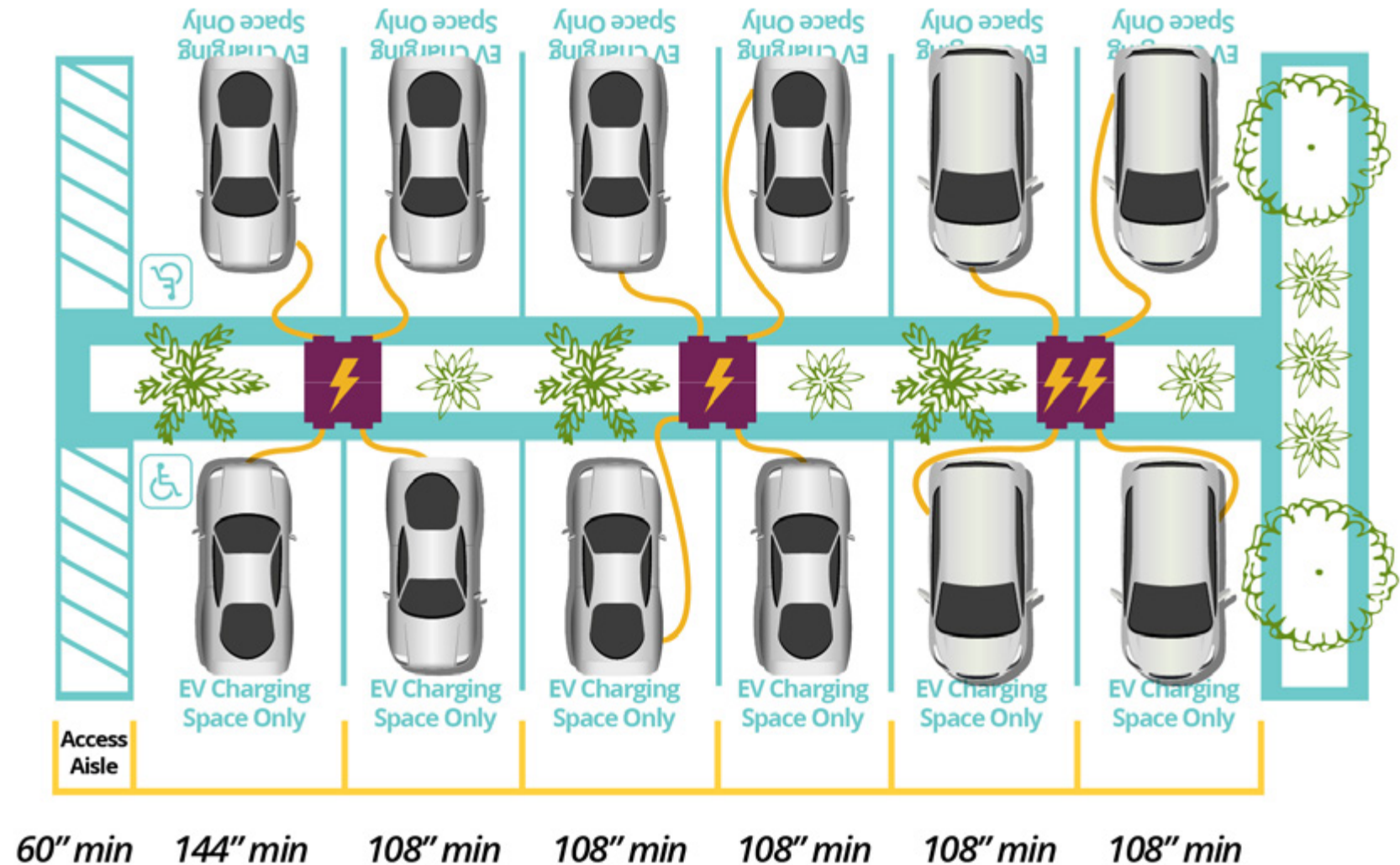
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ADA COMPLIANCE

Parking Lot with EV Charger Installed in Median



Selecting Parking Spots for Charging Stations

LIGHTING AND WEATHER PROTECTION

EV drivers need a minute or two to plug in and unplug their cars at all times of day and in all kinds of weather. Consider choosing parking spaces that have good outdoor lighting and a line of sight from the building or passers-by. If you expect that people will plug in and walk somewhere else — to a restaurant or a nearby apartment building — consider parking spaces that are closest to a walking route or next to a bike-share hub.

Charging stations that face directly into the afternoon sun are likely to take the brunt of the heat, which can make the charging station hot to the touch and the user interface screen fade over time. Charging stations installed in low places in the parking lot could create a pool of water when it rains. Placing charging stations under solar canopies can provide weather protection.

EVs and charging stations are designed to perform in extreme climates, but if your property is in one of these climate zones, you have a few additional considerations.

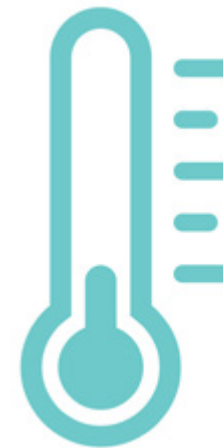
Extreme Heat



Research indicates that sustained temperatures above 95 degrees can decrease EV range by 17%.⁷ Drivers may need to park and charge longer when the temperature is above 95 degrees.

Placing EV charging stations so they are shaded in the afternoon may increase the efficiency of the charger and decrease the “heat island” effect.

Below Freezing



Researchers found that the time to fully charge a battery increases when temperatures dip to 32 degrees. The colder it is, the longer it takes an EV to charge.⁸ Range also decreases when the vehicle's heater is running. Drivers may need to park and charge longer than when the temperature is below freezing.

Placing EV charging stations next to walls that reflect heat or near other equipment that produces exhaust heat may improve charger efficiency in freezing temperatures.

⁷ AAA of Southern California's Automotive Research Center. Tesla disputed the findings, <https://www.theverge.com/2019/2/10/18217041/electric-car-ev-extreme-weather-polar-vortexports>.

⁸ Idaho National Labs, <https://phys.org/news/2018-08-ev-cold-temperatures-pose-drivers.html>, University of Michigan Energy Institute (download)

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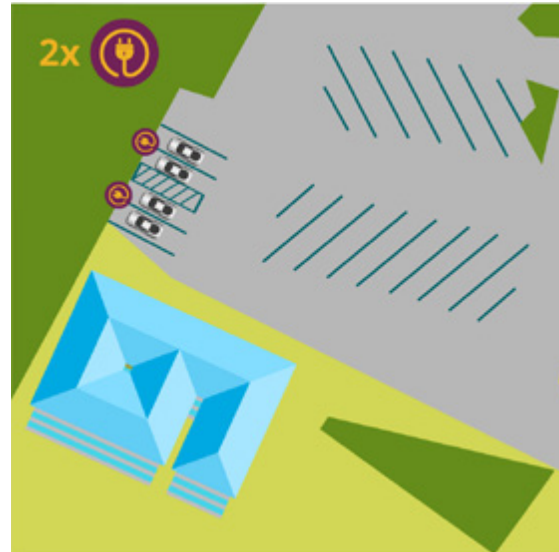
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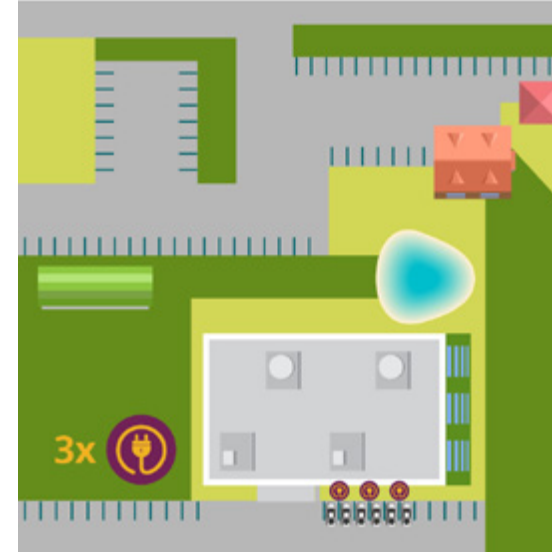
PLACEMENT EXAMPLES

The three illustrations below show different configurations that took placement factors into account when the property owner installed charging stations.



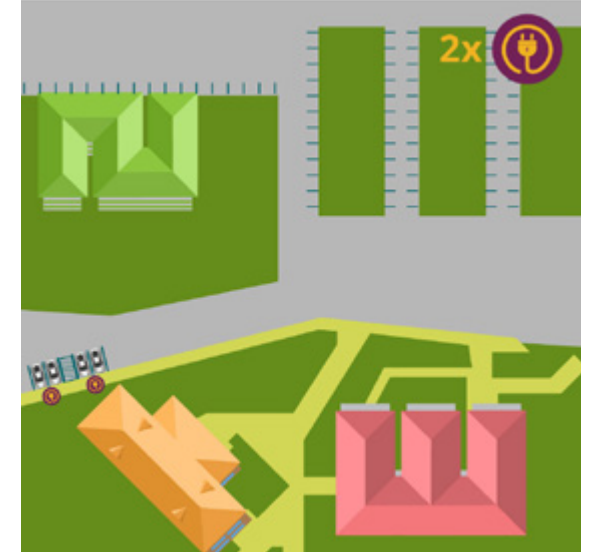
Two-Hour Parking for Customers

At this business, most EV drivers are customers with an average dwell time of two hours. The EV parking spaces were created from a storage area because it was close to the electrical transformer, and it had existing lighting. Charging stations were installed on a grassy curb.



All-Day Parking for Employees

At this business, most drivers are employees with an average dwell time of eight hours. The ADA-accessible parking spaces are at the building's rear entrance. Because the sidewalk is extra wide in this area, it easily accommodated the changing station pedestals. Part of the curb was modified as a wheelchair ramp. The property added a solar canopy over the parking spaces for shading and to provide overhead lighting at night.



Overnight Parking for Nearby Residents

This “business” is a city-owned property that includes a large park, a community center, a preschool program, and a fire station. The city wanted to provide charging for employees and visitors during the day and for residents of a nearby apartment building at night. The driveway was widened, and a loading zone was transformed into four EV parking spaces to create easy access for the residents, ensure line of sight to charging stations from the street, and minimize tripping hazards for people using the park for running and biking.

Preparing for Installation



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Preparing for Installation

For most **Charge Ready** participants, SCE will handle most of the work with design, line drawings, and obtaining permits. If you choose to do the make-ready work, your EVSE vendor may handle installation, they may refer you to a station developer, or you may choose your own C-10 licensed electrician.

Two things to do to prepare for installation:

- 1 If you lease your property or parking lot, you'll need to obtain permission from the property owner to install charging stations. In most instances, property owners want to see a diagram that shows where the charging stations will be installed, that the installation will comply with all codes and standards, and an understanding of any other property upgrades that may be required, like restriping a parking lot or widening a walkway.
- 2 If you haven't done so already, this is the time to engage with SCE. Either you or the station developer should contact SCE's Transportation Electrification Advisory Services team at chargeready@sce.com to ensure that the grid can supply the additional power you need.

Each Level 2 charger must be supplied by a dedicated circuit, meaning that no other electrical load may be connected to the circuit breaker that serves the charger. The electrician will inspect your existing electrical service and then perform a load calculation to determine if your panel and transformer can support the additional load of EV charging.

This typically has one of three outcomes:

- 1 The existing panel has empty slots to add new breakers. (You might hear this referred to as "panel capacity.")
- 2 The existing panel is full, and the electrician needs to add a subpanel.
- 3 The existing panel is old, unsafe, and/or overloaded and needs to be replaced with a panel that meets current building codes.

The **Charging Infrastructure and Rebate** and **Turn-Key Installation** programs require that charging stations be separately metered. If you're participating in one of these programs, the electrician will install a new service panel that will accommodate a new dedicated SCE meter for the charging stations.

SCE will determine the pathway to run the wiring from the panel to the charging stations. Branch circuits leading from the panel to the new charging stations will usually require new electrical conduits. With this information, SCE will complete line drawings that show the charging station installation adheres to all California regulations (safety, ADA, electrical codes, etc.) and prepare the permit application for your city. Some cities may also require design drawings to ensure construction will adhere to local aesthetics (architectural and landscaping guidelines).⁹

⁹ Governor's Office of Business Development Electric Vehicle Charging Station Permitting Guidebook, <https://businessportal.ca.gov/wp-content/uploads/2019/07/GoBIZ-EVCharging-Guidebook.pdf>

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Preparing for Installation

You (or the property owner) will need to grant an easement to SCE. The easement grants SCE reasonable access to their infrastructure if they need to repair or maintain equipment. SCE's Transportation Electrification Project Management team and SCE can determine if you need an easement and complete the required documentation and coordinate the required signatures.

California has regulations that streamline permitting for EV stations (AB 1236), which each jurisdiction implements with its own processes. One example is that some cities might permit the construction and the grid interconnection at the same time, while others might wait until construction is finished before starting the service connection review process.

The installation planning and review process can take up to six months for Level 2 and as much as a year for DCFC.¹⁰ Once SCE has the permit, construction and grid connection can be quickly completed. Extensive construction — rebuilding a sidewalk or trenching through a parking lot — may take longer. During construction, it's likely that your city's building department will conduct multiple inspections for structural and electrical work. SCE handles all of this for you. After passing the final inspection, your station will receive a final sign-off and you'll be ready to operate!



¹⁰ Governor's office of Business Development Electric Vehicle Charging Station Permitting Guidebook, <https://businessportal.ca.gov/wp-content/uploads/2019/07/GoBIZ-EVCharging-Guidebook.pdf> ports

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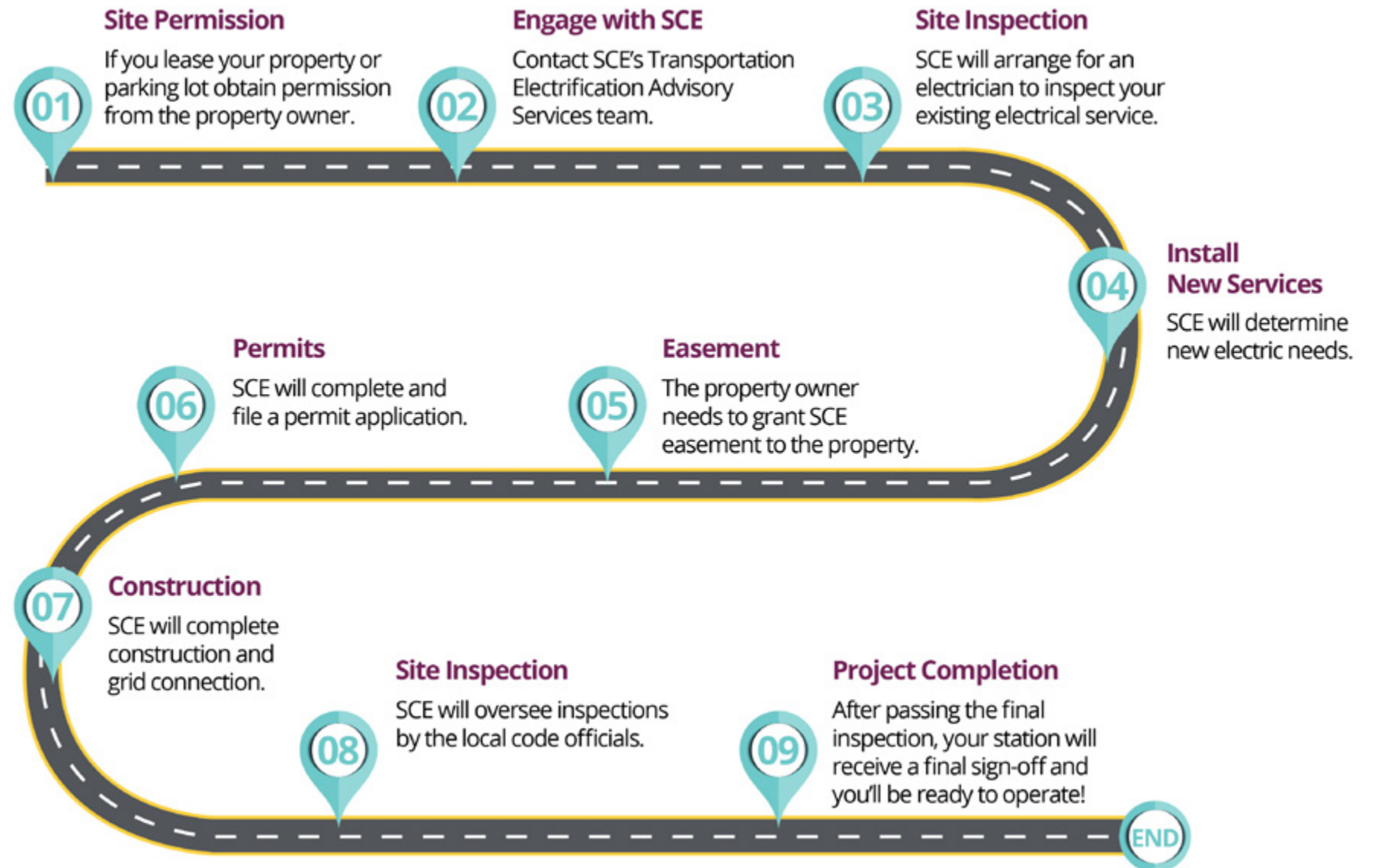
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Preparing for Installation

SCE HANDLES MOST OF THE WORK FOR YOU!



Understanding EV Charging and Your Electric Bill



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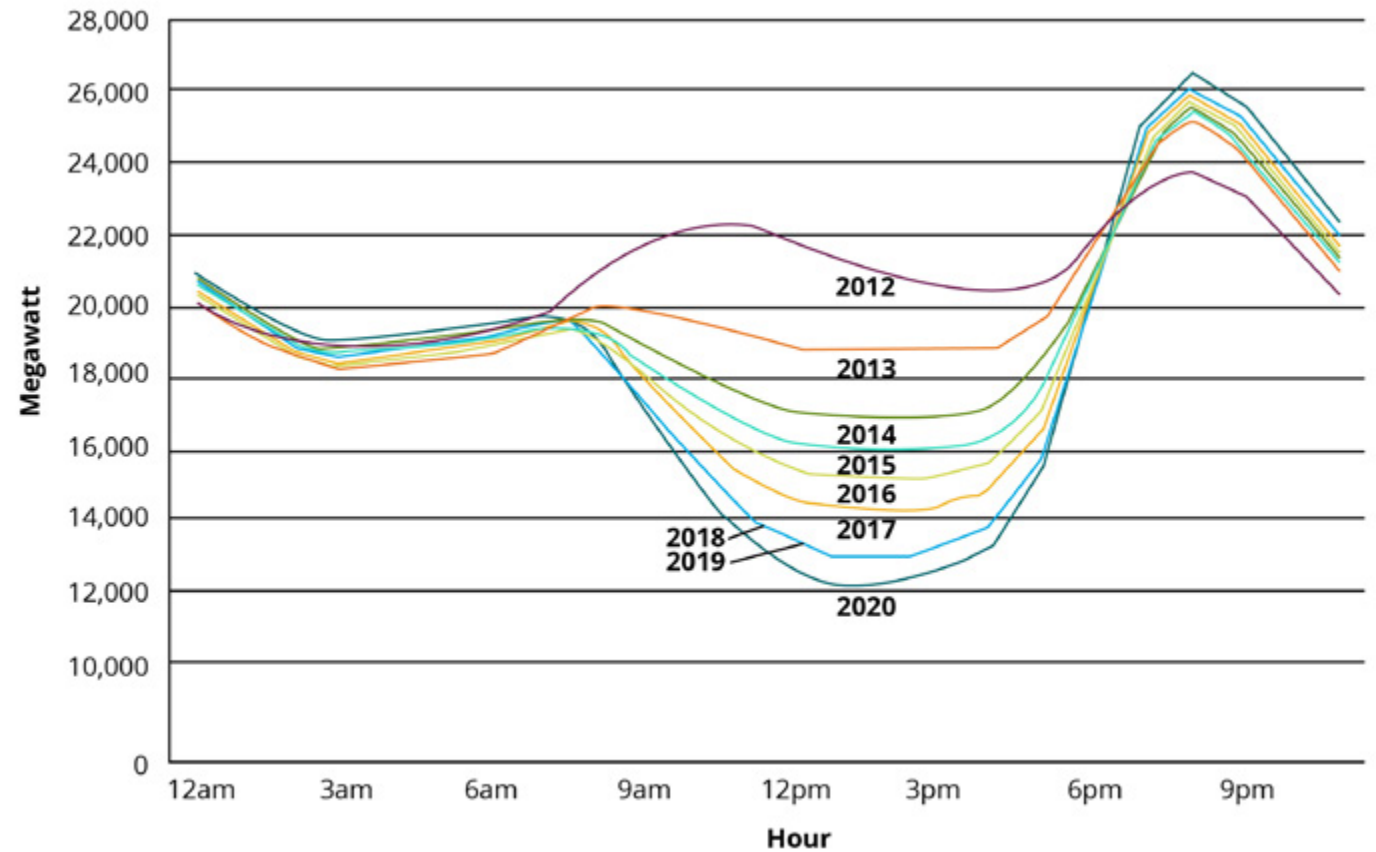
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Understanding EV Charging and Your Electric Bill

To understand how charging EVs can affect your electric bill, you need to understand a little about the duck and the dragon.

THE DUCK CURVE

The California Independent System Operator (CAISO) created a chart to illustrate the amount of energy produced and consumed in an average day. The chart shows that as more solar is deployed across the state, more energy is produced in the middle of the day than is consumed. Around 5 pm, people come home from work and turn on their appliances, spiking electricity demand just as the sun sets and solar energy production declines. The curve, which looks like a duck, shows the importance of conserving energy between 4 pm and 9 pm.



The above curve shows the importance of conserving energy between the hours of 4 pm and 9 pm when demand spikes.

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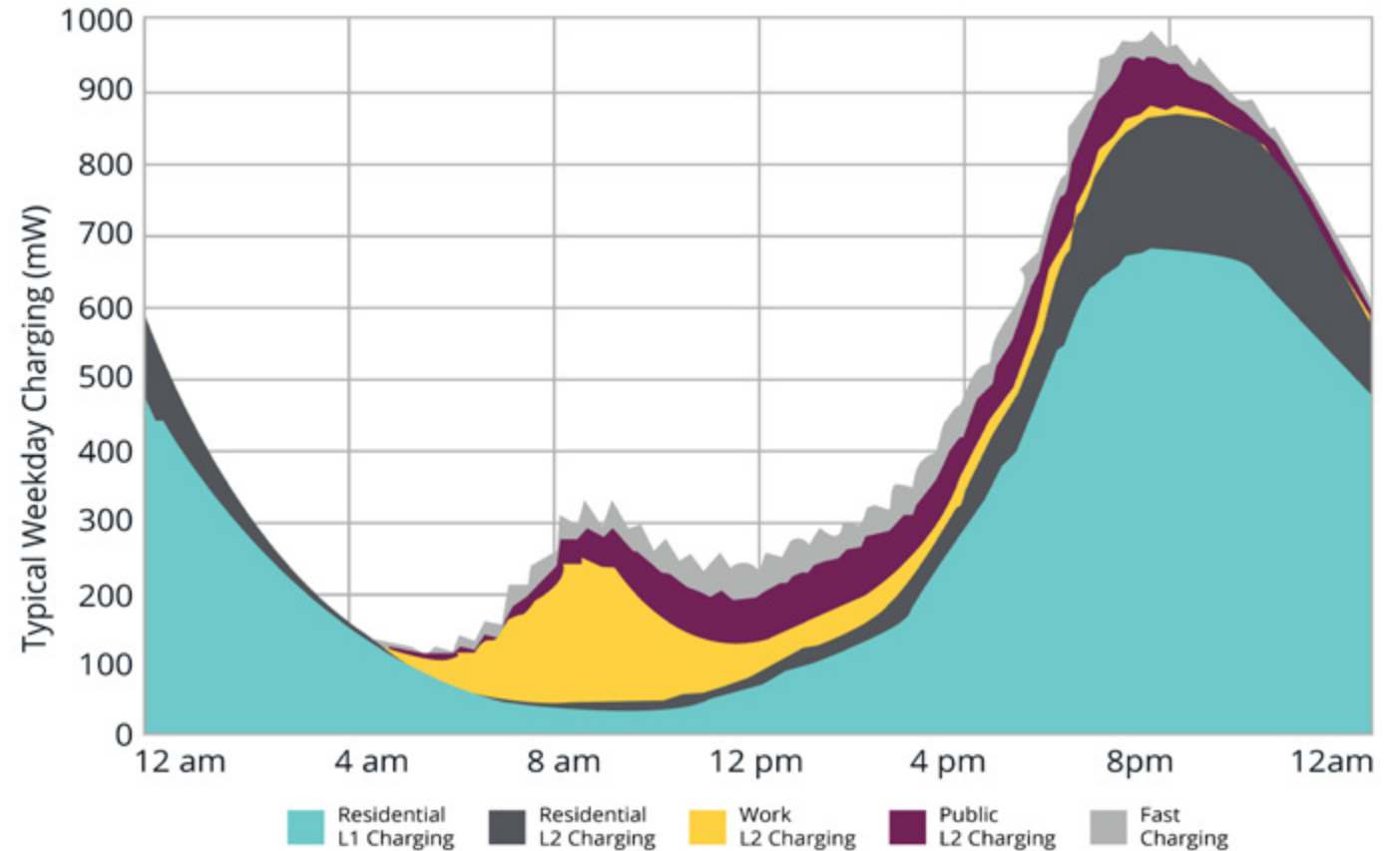
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Understanding EV Charging and Your Electric Bill

THE DRAGON CURVE

Just as utilities were developing ways to store energy during the day and release it later to meet the evening load, along came the dragon. The California Energy Commission projects that large numbers of EVs charging in the morning when they arrive at work and in the evening when they go home will cause two humps at the dragon's "tail" and "back." The jagged spikes on the dragon's "spine" are generated by DCFC, which can consume as much power as a building and can trigger peaks in power demand.

The goal is to encourage EV charging during off-peak hours and smooth the spikes to both reduce the demand on the grid and keep electric costs as low as possible (This is true for all electricity uses in your business and your home, too).



Charging during off-peak hours reduced demand on the grid and keeps electric costs as low as possible.

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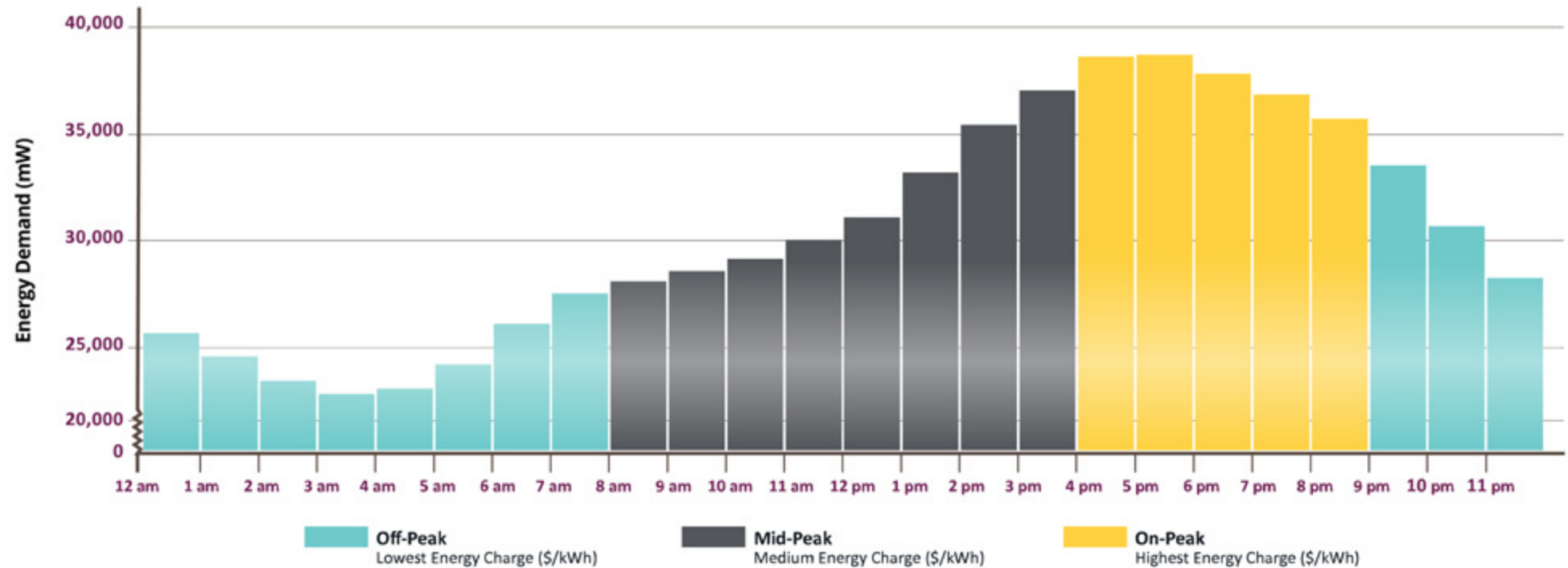
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Understanding EV Charging and Your Electric Bill

ON-PEAK AND OFF-PEAK

Two of the **Charge Ready** programs require that charging stations be separately metered,¹¹ and that meter must enroll in an SCE Time-of-Use (TOU) rate plan and a demand response program. Under a TOU rate plan, you may pay a lower-than-average price per kilowatt-hour (kWh) during off-peak periods and a higher-than-average price per kWh during on-peak periods between 4 pm and 9 pm. SCE offers several **EV TOU rate plans** that many offer additional financial benefits.



¹¹ In the New Construction program, a separate meter is not required, but is strongly recommended. The Charging Station Rebate program does not require a separate meter.

Energy Management Best Practices



Energy Management Best Practices

LOAD MANAGEMENT

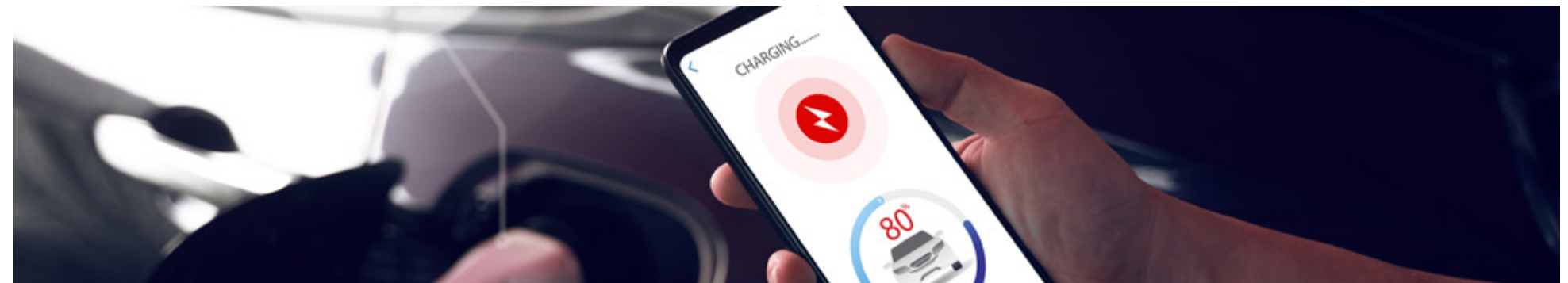
Depending on the functionality of the charging stations you select from the **Approved Product List**, load management software may control the flow of electricity to the cars' batteries. This has two benefits: 1) you may be able to have more ports than panel capacity, and 2) you may be able to control energy use during peak periods.

It's important to note that power delivered to the vehicle batteries cannot exceed the service panel capacity. For example, imagine that you want four 6.6 kW ports at 50 amps each for a total of 200 amps, but your panel only has 100 amps of capacity. **Depending on the way the load management software is implemented and the infrastructure is designed, your stations may be able to charge four cars simultaneously by:**

- **Reducing the flow** of current so that each car gets less than the full 6.6 kW capacity of the charger.
- **Rotating full power at 6.6 kW from one car to another** — each car gets a flow of electrons for up to a few minutes until each battery is charged.
- **Prioritizing charging based on battery status** — the cars with the least amount of charge get 6.6 kW and the most charged battery waits for a turn. Every few minutes, the software will check the status of each car and shift the priority again.
- **Prioritizing charging based on a user-defined status** — a person decides the order of charging. This is especially important for fleet vehicles to ensure that each car is charged overnight and ready for its shift in the morning.

Managing Electricity Use

The combination of load management, TOU rates, and demand response will help you manage electricity use and minimize your electric bill. Your SCE account manager can help you with these plans and additional energy efficiency measures for your property.



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Energy Management Best Practices

Controlling Charging

To control energy (reduce the spikes on the dragon's back), some charging stations can respond to a signal from SCE to stop charging or slow the charging speed for a few minutes or up to an hour, and then resume charging when the peak has passed. Software in some charging stations also allows the owner to schedule charging sessions so that current flows only during off-peak hours.

DC Fast Chargers

DC Fast Chargers will soon be included as an option in the **Charging Infrastructure and Rebate program**, pending approval by the California Public Utilities Commission, and some DCFCs have additional controls for load management and "peak shaving." Commercial TOU rate plans often have a "peak fee" (also referred to as a demand charge), which is determined by the maximum power drawn for a portion of an hour during the customer's routine billing cycle. Peak shaving software included with some DCFCs can reduce the flow of electricity to the car to avoid the 15-minute spike that creates a peak. This can, however, turn a 20-minute charging session into a 60-minute session because the current isn't flowing as fast. (Think of filling a bucket with water while turning the hose off and on.)

Demand Response

The suite of **Charge Ready** programs also requires that the meter recording usage for the charging stations be enrolled in a demand response (DR) program. DR programs are typically structured to offer incentives for reducing electricity use when the demand for electricity is high. Depending on the DR program, notifications may be sent the day before or the day of the event. Customer notification options include phone, text, email, or through the SCE DR Alerts app, depending on the DR program selected. You are not required to reduce your demand during a DR event, but you may receive bill credits, a reduced rate, or other forms of compensation if you do reduce demand. Some DR programs also include higher prices during events or penalties for not reducing load.

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Energy Management Best Practices

COST RECOVERY: CHARGING FEES FOR EV CHARGING

Some businesses offer EV charging for free as an amenity for employees, customers, tenants, and residents.

California's Division of Measurement Standards (DMS) is the regulatory body that verifies everything that is sold by a unit of measure, from a gallon of gasoline to a pound of lunchmeat to the amount of talc in talcum powder. DMS established the Electric Vehicle Fueling Systems regulation¹² that applies to all new Level 1 and Level 2 public charging stations that accept payment as of January 1, 2021. It will take effect for new DCFCs installed as of January 1, 2023.

The regulation requires that charging stations:

- Have a safety certification issued by a nationally recognized testing lab
- Include an easy-to-read user display
- Clearly display pricing and the unit of measurement
- Display voltage rating, type of current, and max power
- Display the quantity of electricity delivered
- Display temperature limits, if narrower than and within -40 °C to + 85 °C (-40 °F to 185 °F)
- Be tested by County Weights and Measures to a certain accuracy of 1% for Level 1 and 2; and 2.5% for DCFC

¹² Electricity as a Motor Fuel, https://www.cdfa.ca.gov/dms/pdfs/regulations/EVSE-OAL_EndorsedLetter-and-FinalText.pdf

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Energy Management Best Practices

COST RECOVERY: CHARGING FEES FOR EV CHARGING

Under these rules, charging stations cannot accept payment based on time or as a flat fee. Payment is based on electricity used with the unit of measured as megajoules (MJ) or kilowatt-hours (kWh), which can be priced in whole cents (e.g., \$0.12) or tenths of a cent (e.g., \$0.119). EVSEs must accept credit cards for payment and/or let customers access a payment system, like an app, on the spot.

Charging stations that are owned and operated by a government agency are exempt from the rules. Stations that are not open to the public or do not require payment do not need to comply with the rule.

This information is provided as a reference only. Please work with the vendor you select from the Approved Product List to better understand your cost recovery options and regulatory compliance requirements that are applicable to your situation.



Choosing a Charge Ready Program



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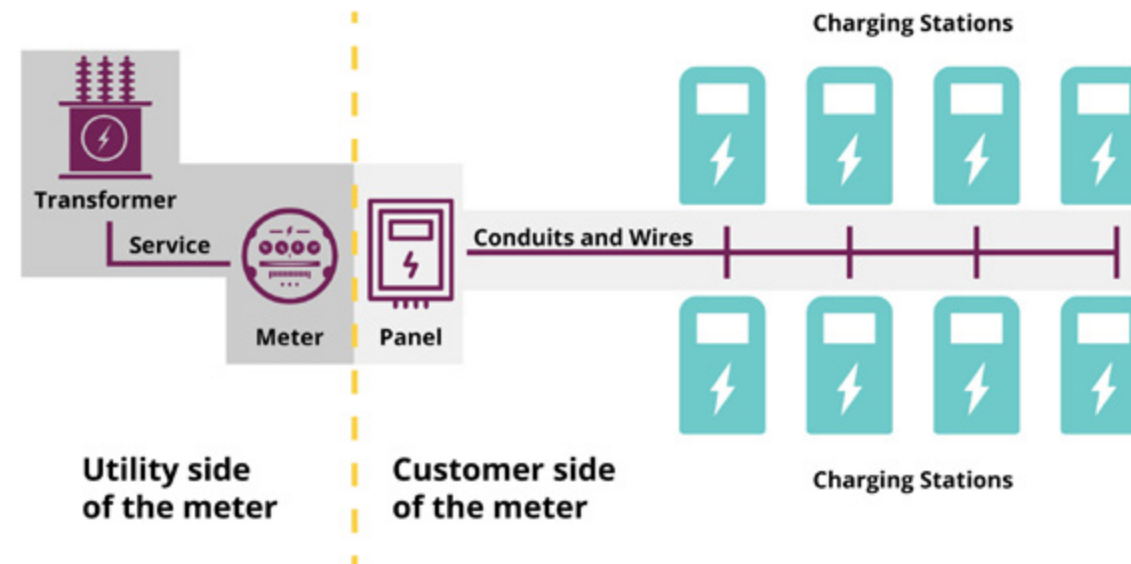
SCE has three **Charge Ready** programs to help Southern California businesses, workplaces, and multi-family properties install EV charging stations for light-duty vehicles at low- to no-cost.

COMMERCIAL AND PUBLIC-SECTOR CUSTOMERS

Every non-residential customer in the SCE territory can take advantage of the **Make-Ready Option** or the **Charging Infrastructure and Rebate** programs.

The **Charging Infrastructure and Rebate** is for customers who want to install four or more charging ports from the **Approved Product List** and SCE will provide program-funded make-ready upgrades. The maximum rebate per port varies and is determined by site type and geographic location.

Options for Make-Ready Infrastructure



Make-Ready Options

SCE will perform all the utility-side of the meter infrastructure work. You can choose to have SCE also perform the customer-side of the meter infrastructure work, or alternatively, you can have the work performed by your contractor. If you choose to use your contractor, you will qualify to receive a rebate of up to 80% of SCE's-estimated construction costs, or up to 80% of costs incurred by the contractor, whichever is lesser.

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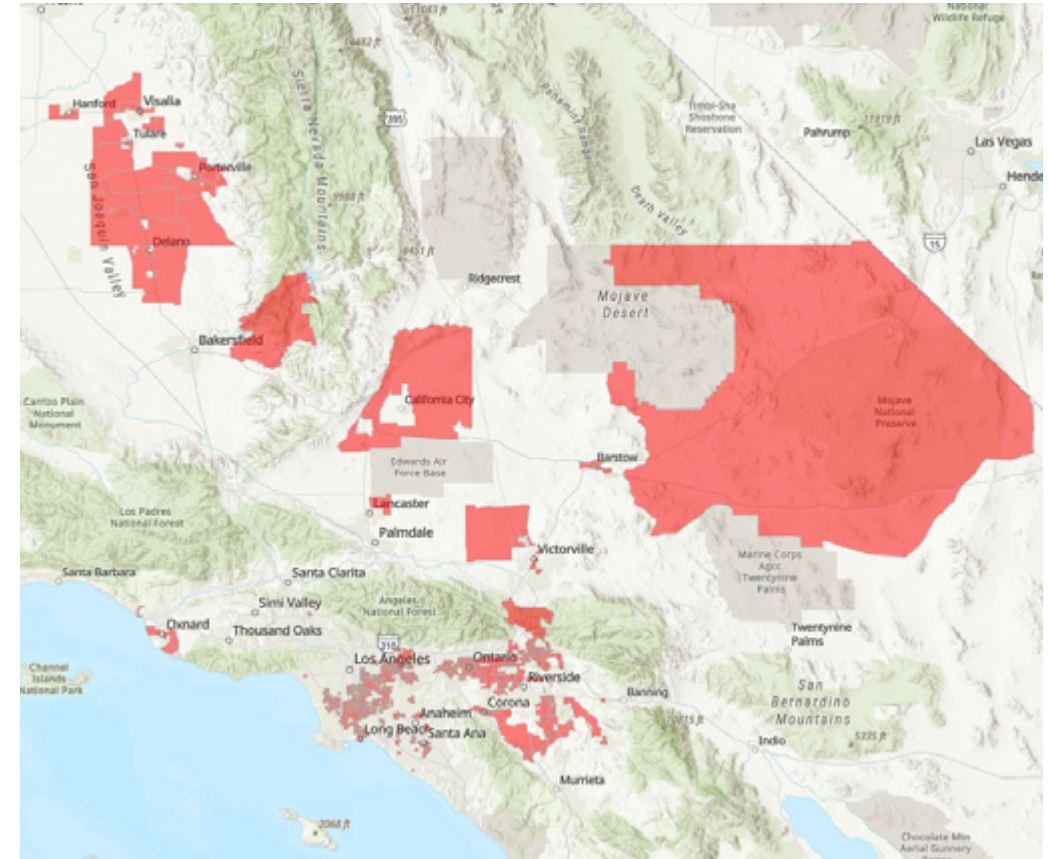
COMMERCIAL AND PUBLIC-SECTOR CUSTOMERS

The Charging Infrastructure and Rebate program requires that the participant:

- Purchases and installs Level 1 or Level 2 charging stations with a minimum of four ports from the Approved Product List
- Contracts with a service provider to establish and maintain network communications
- Shares data about charger use, pricing, and other related information with SCE
- Operates the charging stations and maintains them in working order for 10 years
- Enrolls in a qualifying demand response program
- Enrolls in an eligible TOU rate
- Pays all charging station energy costs

The charging station rebate amount depends on the charging equipment selected, installation site type, and geographic location. Those sites located in the top quartile of disadvantage communities (DAC)¹⁴ (the areas in red on the map) will qualify for the largest rebate.

Disadvantaged Communities (DACs) in SCE Service Area



■ Sites located in the top quartile of disadvantage communities (DACs) qualify for the largest rebate.

¹⁴ Interactive DAC map show in the image, <https://www.arcgis.com/apps/webappviewer/index.html?id=4ccbb9649eac4a47ba75baf9cf5f41d5>

Choosing a Charge Ready Program

COMMERCIAL AND PUBLIC-SECTOR CUSTOMERS

Maximum Rebates under the Charging Infrastructure and Rebate Programs¹⁵

	Commercial, Public, and Multifamily in a DAC*	Multifamily not in a DAC	Commercial and Public not in a DAC, including all Fortune 1000
Charging Infrastructure and Rebate (Level 1)	\$2,200 per port	\$1,100	\$550
Charging Infrastructure and Rebate (Level 2)	\$2,900 per port	\$1,450	\$725
Charging Infrastructure and Rebate (DCFC 50kW and above)¹⁵	\$40,200	\$20,100	\$10,500

*Excludes Fortune 1000 companies or equivalent international companies.

¹⁵ Pending approval by the California Public Utilities Commission. When approved, SCE will install make-ready to support up to 150 kW for all DCFC installations.

Choosing a Charge Ready Program

MULTI-FAMILY PROPERTIES

As an option to the **Charging Infrastructure and Rebate Program**, **Charge Ready** includes two first-of-their-kind programs for existing multi-family properties that enable you to become EV-ready while staying focused on keeping your property running successfully.

Turn-Key Installation:

SCE will design, install, operate, and maintain four or more Level 2 charging station ports for 10 years. SCE will choose the vendor and equipment to install, and contract directly with the vendor for network services. SCE will facilitate the collection of charging station user fees and remit payments to the program participant.

The program requires that the participant:

- Pays all EV charging station energy costs
- Sets any pricing associated with the use of the charging equipment
- Enrolls in an eligible TOU rate
- Enrolls in a qualifying demand response program
- Registers publicly accessible charging stations with the U.S. Department of Energy's EV Charging **Station Locations mapping tool**

Maintenance and Networking Rebate

Multi-family properties in the top quartile of DACs that take advantage of the Charging Infrastructure and Rebate program are also eligible for the **Maintenance and Networking Rebate**. This is a one-time rebate that will cover most of the costs associated with 10 years of operating smart charging stations.

New Construction Rebate:

SCE will provide a one-time rebate of up to \$3,500 per port to offset the costs associated with the purchase and installation of EV charging equipment at properties required to comply with CALGreen and local code requirements.

The program requires that the participant:

- Purchases charging stations included on SCE's Approved Product List
- Contracts with a service provider to establish and maintain network communications
- Shares data about charger use, pricing, and other related information with SCE
- Operates the charging stations and maintains them in working order for 10 years
- Enrolls in an eligible TOU rate
- Enrolls in a qualifying demand response program
- Pays all charging station energy costs
- See the **New Construction Rebate Program Guidelines** for more information

INTERESTED IN THE CHARGE READY PROGRAM?



Ready to be a part of California's clean transportation future?

Install EV charging stations at your location for little- to no-cost. Start your application today at sce.com/chargeready or contact SCE's team at chargeready@sce.com.



Resources

Customer Infrastructure Planning

Eligibility Checklist

Toolkit for Offices and Light Industrial Spaces

Toolkit for Multi-Family Properties

Toolkit for Public Parking

Toolkit for Consumer-Facing Businesses

Customer Infrastructure Planning

To determine which Charge Ready program you may be eligible for, follow the graphic below.



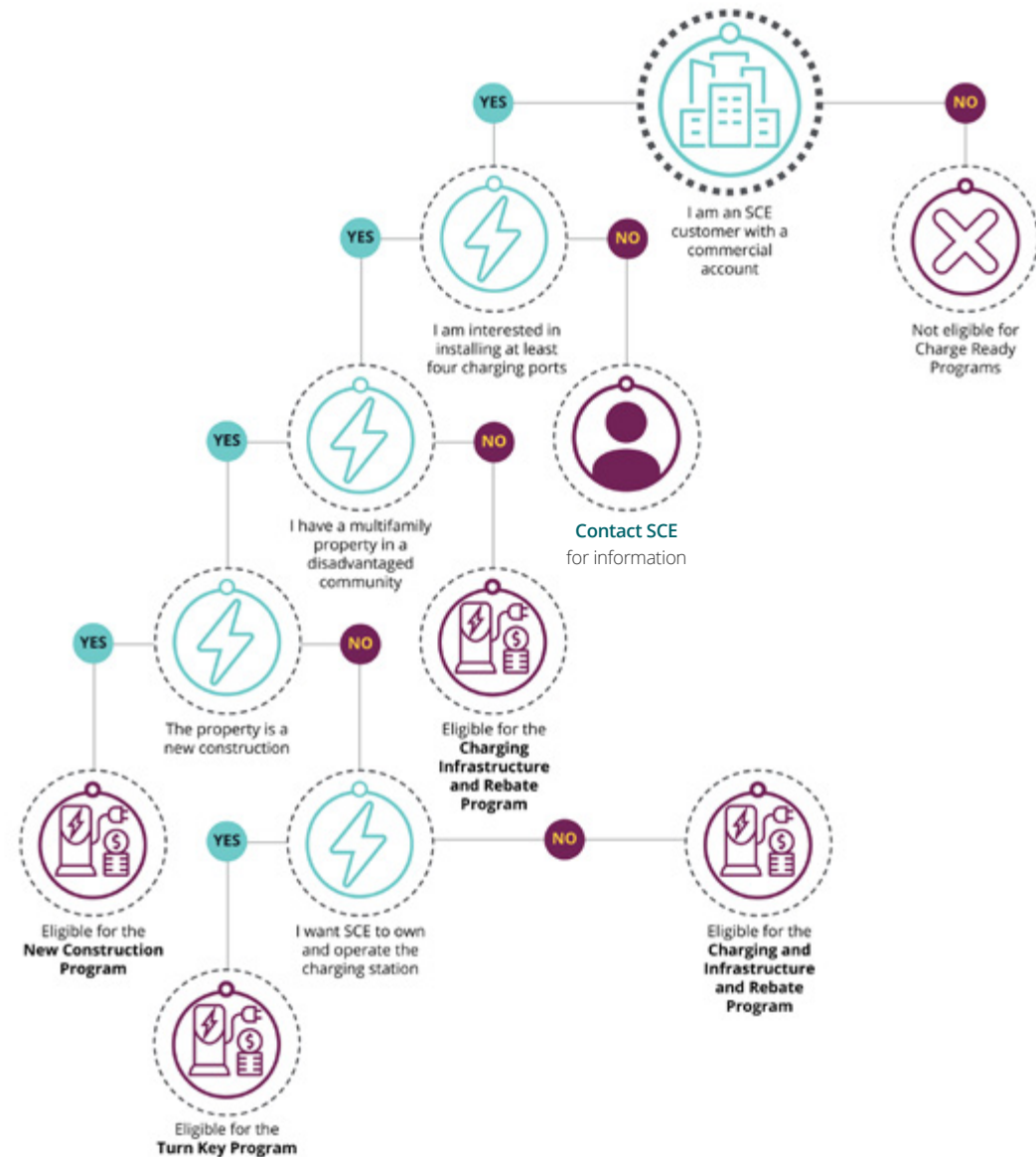
Lightning Icon

These prompts indicate a decision that helps determine your infrastructure path.



Charger Icon

These icons indicate the specific **Charge Ready** rebate or infrastructure program you may be eligible for.



Eligibility Checklist

Eligibility Checklist

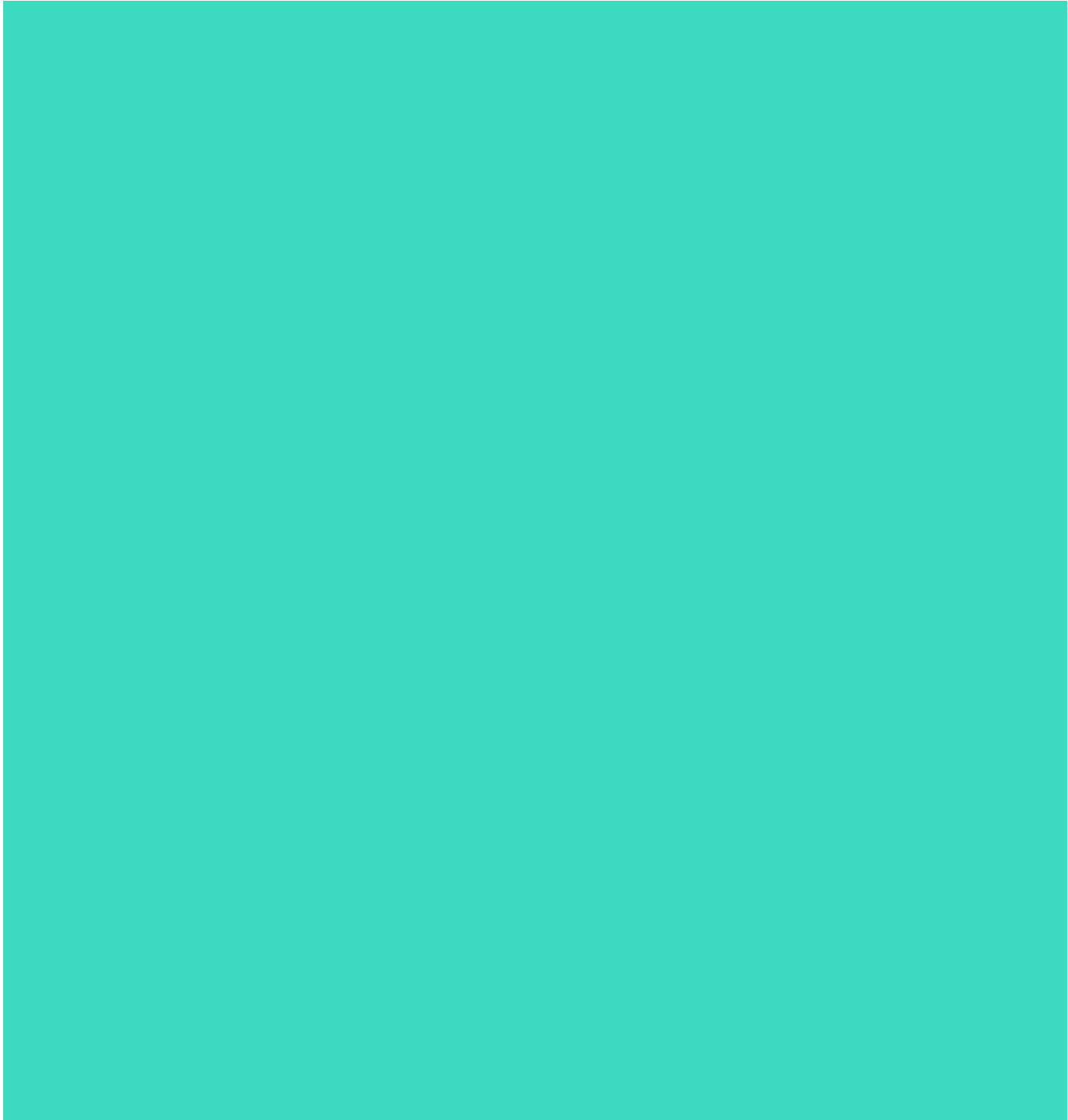
The basic criteria below will help you to determine if you are eligible for Charge Ready.

- The property is in SCE territory.
- The applicant is the SCE commercial account holder.
- The applicant is one of the following types of businesses:
 - Multi-family property
 - Retail location
 - Business office
 - Industrial complex
 - Hospitality location
 - Sport and entertainment facility
 - Light-duty fleet
 - Public institution
 - Government institution
 - Agriculture and water
- The applicant owns the property or has consent from the property owner to install the equipment and agreement that the property owner will grant any required easements.
- Four or more charging ports will be available to the public, fleet vehicles, employees, customers, or any combination of these.



If you're ready to be part of California's clean transportation future and install EV charging stations at your locations for little to no cost, visit sce.com/chargeready to start your application or contact SCE's team at chargeready@sce.com.

Toolkit for Offices and Light Industrial Spaces



Toolkit for Offices and Light Industrial Spaces

These resources are useful for businesses that want to provide charging mainly for their employees. It applies to any business with four or more off-street parking spaces, whether those spaces are shared or assigned. If your parking lot is open to the public or serves retail businesses, one of the other guides may be a better reference.

EMPLOYEE SURVEY QUESTIONS

If you drive to work, what's your typical commute distance (one-way) to work?

- Less than 10 miles
- 10-25 miles
- 26-50 miles
- More than 50 miles

During the workday, what is your usual travel pattern?

- I stay at the worksite until the end of the day
- I leave the work site at least once a day at least two days a week
- I leave the work site more than once a day at least two days a week
- I regularly leave the work site throughout the day
- Other: _____

Do you own a plug-in hybrid electric vehicle or battery-electric vehicle? If so, what model? _____

If not, would you consider buying or leasing one?

If so, would that be:

- This year
- Next year
- Within two years
- Longer than two years

Do you have or could you install a charging station at home?

YES NO

Would you consider the ability to charge your vehicle at work a perk?

YES NO

If workplace charging were an option, would you be willing to pay for it?

YES NO

Toolkit for Offices and Light Industrial Spaces

POLICIES

Policies for Offices and Light Industrial Spaces should address:

Maintaining employee safety (cord management, reporting visible damage, etc.)

User registration:

Will you require EV drivers to register their cars with the employer? If so, how and with whom? Will you use issue parking permits to authorized vehicles?

Charging times:

Options can include:

- o Allowing workplace charging at certain times (e.g., normal business hours only)
- o Setting daily charging time limits (typically four hours per day per employee when using Level 2 chargers)
- o Giving priority to battery EVs over plug-in hybrid EV
- o Requiring that EVs be actively charging when parked at a charging station (and moved thereafter)
- o Are employees permitted to unplug each other's cars?

Grievance:

How to file a grievance, who is the arbitrator, what are the consequences for abusing the policies

Payment:

Will you charge employees? If so, how much and who collects the fees. If charging is free, is it part of a benefits package? Do you have similar benefits for employees that carpool, take transit, roll, or walk?

Access to customers and visitors

Access to the public:

What do you do if a car is charging when your employees come to work?

Toolkit for Offices and Light Industrial Spaces

CHECKLIST FOR PLANNING

- Do you have permission from the property owner?
- Do you have assigned parking or shared parking?
- Do you want the charging stations available to the public or only certain drivers?
- How long do the drivers typically stay? Less than two hours, more than four, or more than eight?
- How many ports do you want to install? (Charge Ready requires a minimum of four.)
- Will the charging stations be wall-mounted or on pedestals?
- Are the parking spaces close to an existing electrical supply?
- Will at least one port be adjacent to an ADA parking space?
- If a two-foot-square pedestal is installed, is the route from the parking spot to the door at least 48-inches wide?¹⁶
- Can maintenance vehicles like street sweepers and snowplows navigate around the charging station?
- When a car is charging, will the cord extend over a walkway and create a tripping hazard?
- Do the parking spaces have lighting? Will drivers feel safe plugging in and unplugging at night?
- Are the parking spaces in the line of sight of a building, the street, or a parking lot attendant?
- Are the parking spaces level and well-drained, or will drivers stand in a puddle after a storm?
- Are the EVSEs in the direct path of the afternoon sun?



If you're ready to be part of California's clean transportation future and install EV charging stations at your locations for little to no cost, visit sce.com/chargeready to start your application or contact SCE's team at chargeready@sce.com.

¹⁶ California Building Code exceeds ADA requirements.

Toolkit for Multi-Family Properties

Toolkit for Multi-Family Properties

These resources are useful for multifamily properties, which are residential properties with two or more tenant units and shared parking areas. Shared parking may be managed by the property manager or an HOA or equivalent.

RESIDENT SURVEY QUESTIONS

Do you own a plug-in hybrid electric vehicle or battery-electric vehicle? If so, what model?

If not, would you consider buying or leasing one? If so, would that be:

- This year
- Next year
- Within two years
- Longer than two years

During the workday, what is your usual travel pattern?

- Less than 10 miles
- 10-25 miles
- 26-50 miles
- More than 50 miles

Do you have access to a charging station at work or school?

- YES NO

Would you consider the ability to charge your vehicle at _____ an amenity?

If _____ installed charging, would you be willing to pay for it?

- Yes, a flat monthly fee added to my rent
- Yes, through a credit card or phone app
- No

What type of charging would work for your schedule?

- Overnight charging that starts at 9:00 pm and is finished by early morning
- Evening charging that starts around 6:00 pm and is finished by midnight
- Morning charging that starts around 5:00 am and is finished mid-morning
- A fast charge that takes about 30 minutes at a central location

Toolkit for Multi-Family Properties

POLICIES

Policies for Multi-Family Properties should address:

Maintaining safety (cord management, reporting visible damage, etc.)

User registration:

Will you require EV drivers to register their cars with the office? If so, how and with whom? Will you use issue parking permits to authorized vehicles?

Charging times:

Options can include:

- o Allowing resident charging at certain times (e.g., off-peak hours only)
- o Requiring that EVs be actively charging when parked at a charging station (and moved thereafter)
- o Are residents permitted to unplug each other's cars?
- o Employee use of the chargers

Grievance:

How to file a grievance, who is the arbitrator, what are the consequences for abusing the policies

Payment:

Will you charge residents? If so, how much and who collects the fees. If charging is free, is it part of an amenities package?

Access to visitors and guests

Toolkit for Multi-Family Properties

CHECKLIST FOR PLANNING

- Do you have permission from the property owner?
- Do rental agreements, covenants, and restrictions influence charging station location? For example, do CC&Rs allow installation on an exterior wall?
- Do you have assigned, deeded, or shared parking?
- Do you want the charging stations available to the public, employees, or only residents?
- How will a resident walk from an EV parking space to their residence?
- How many ports do you want to install? (Charge Ready requires a minimum of four.)
- Will the charging stations be wall mounted or on pedestals?
- Are the parking spaces close to an existing electrical supply?
- If you have shared parking, will at least one port be adjacent to an ADA parking space?
- If a two-foot-square pedestal is installed, is the route from the parking spot to the door at least 48-inches wide?¹⁷
- Can maintenance vehicles navigate around the charging stations?
- When a car is charging, will the cord extend over a walkway and create a tripping hazard?
- Do the parking spaces have lighting? Will drivers feel safe plugging in and unplugging at night?
- Are the parking spaces in the line of sight of a building, the street, or a security guard?
- Are the parking spaces level and well drained, or will drivers stand in a puddle after a storm?
- Are the EVSEs in the direct path of the afternoon sun?



If you're ready to be part of California's clean transportation future and install EV charging stations at your locations for little to no cost, visit sce.com/chargeready to start your application or contact SCE's team at chargeready@sce.com.

¹⁷ California Building Code exceeds ADA requirements.

Toolkit for Public Parking

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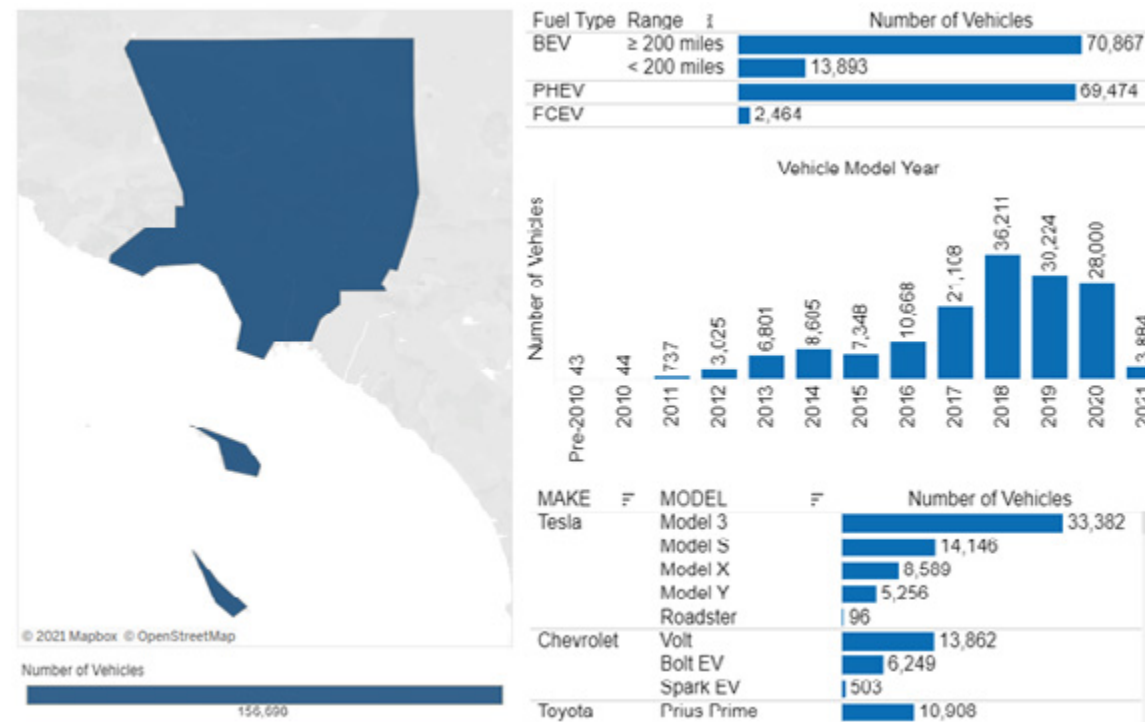
These resources are useful for organizations that own and/or operate public parking lots and parking structures, which is defined as “an off-street facility that contains parking spaces available to all members of the public on a free or for-fee basis, for purposes of temporarily parking a motor vehicle while accessing other areas.”

ESTIMATE CURRENT AND FUTURE DEMAND

The [California Energy Commission](#) provides county-level information about the number of EVs registered with the DMV and the number of public charging stations.

As the image below illustrates, the website shows the number of EVs (including fuel cell electric vehicles) registered each year, and then provides further detail about vehicle's makes and models. This helps you see the number of EVs on the road in your county.

EV Registrations in Los Angeles County



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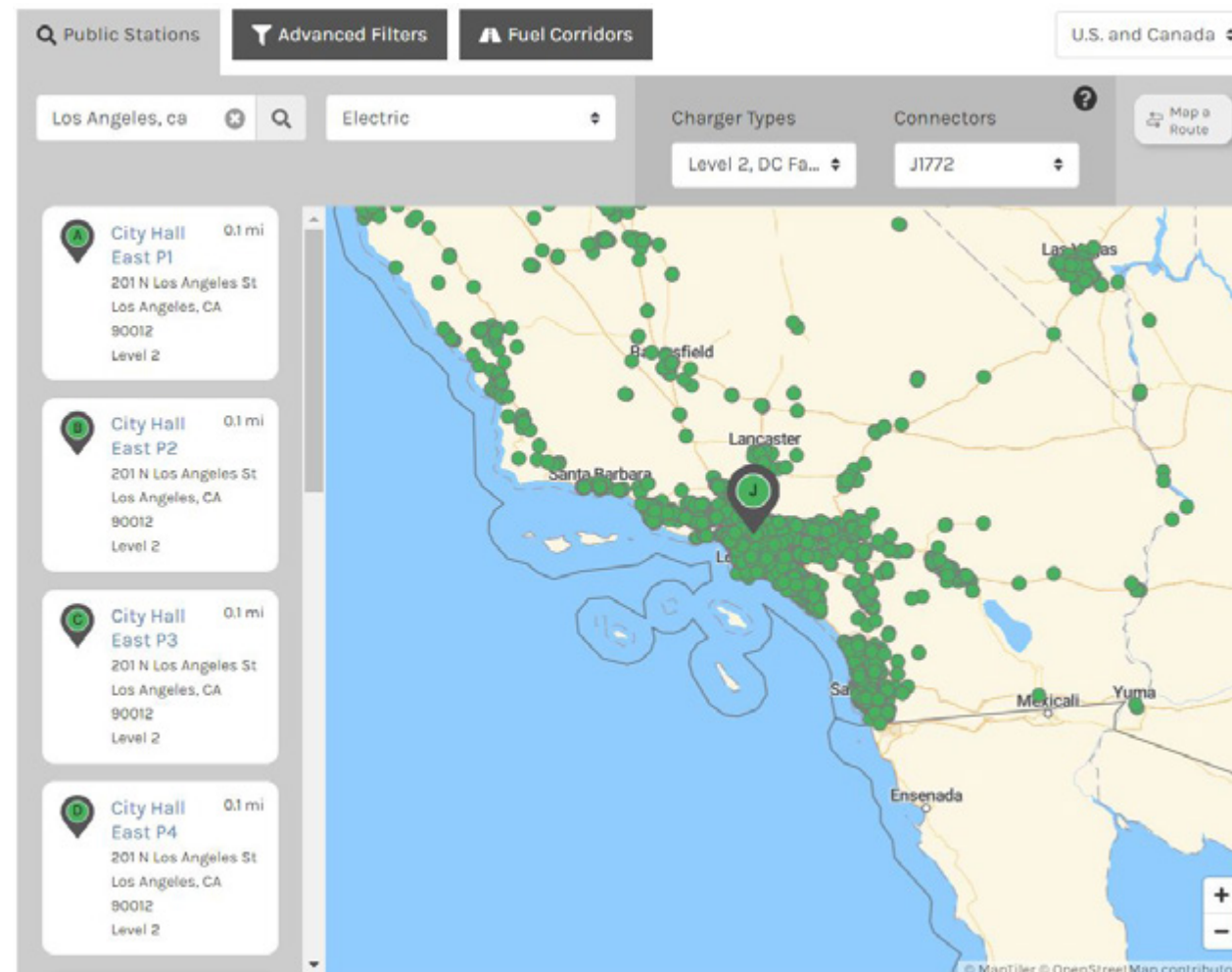
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ESTIMATE CURRENT AND FUTURE DEMAND

You can then compare the number of vehicles to the number of charging stations by looking at the U.S. Department of Energy's [EV Charging Station Locations](#) mapping tool. As you zoom in, you'll see just how great the need is for public charging stations.

Locations of Public Level 2 and DCFC in Los Angeles County



Toolkit for Public Parking

CODES AND REGULATIONS

Many cities have local codes that address improvements to surface parking lots and parking structures. Be sure to explore your city code.

Some owners (private companies or local government) contract with a concessionaire or operator for paid parking. Make sure you coordinate EV charger plans with the operator. They may have specific questions related to risk and liability insurance.

POLICIES

Policies for public parking should address:

- Maximum time for active EV charging during the day, during the night, and on weekends**
- Discounted parking rates for EV drivers (e.g., first hour free, reduced rate on a monthly pass)**
- Consequences for violations**
- Internal process inspecting stations to ensure good working order**
- Process for reporting time limit violations**
- Internal process for maintenance and repairs**

Toolkit for Public Parking

CHECKLIST FOR PLANNING

- Do you have permission from the property owner?
- Do city codes affect the placement of the charging station?
- How many ports do you want to install? (Charge Ready requires a minimum of four.)
- Will the charging stations be wall-mounted or on pedestals?
- Are the parking spaces close to an existing electrical supply?
- Will at least one port be adjacent to an ADA parking space?
- If a two-foot-square pedestal is installed, is the route from the parking spot to the exit at least 48-inches wide?¹⁸
- Can maintenance vehicles navigate around the charging stations?
- When a car is charging, will the cord extend over a walkway and create a tripping hazard?
- Do the parking spaces have lighting? Will drivers feel safe plugging in and unplugging at night?
- Are the parking spaces in a visible area?
- Are the parking spaces level and well-drained, or will drivers stand in a puddle after a storm?
- Are the EVSEs in the direct path of the afternoon sun?



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Toolkit for Consumer-Facing Businesses

Toolkit for Consumer-Facing Businesses

These resources are useful for consumer-facing businesses that include retail stores, restaurants, fitness centers, healthcare offices, and entertainment centers. These businesses typically have off-street parking for employees and customers/clients.

EMPLOYEE SURVEY QUESTIONS

If you drive to work, what's your typical commute distance (one-way) to work?

- Less than 10 miles
- 10-25 miles
- 26-50 miles
- More than 50 miles

When you are "on the clock" would you be able to leave your station and move your car after three or four hours?

- YES NO

Do you own a plug-in hybrid electric vehicle or battery-electric vehicle?

- YES NO

If so, what model?

If not, would you consider buying or leasing one? If so, would that be:

- This year
- Next year
- Within two years
- Longer than two years

Do you have or could you install a charging station at home?

- YES NO

Would you consider the ability to charge your vehicle at _____ a reason to work here?

- YES NO

If charging were an option, would you be willing to pay for it?

- YES NO

Toolkit for Consumer-Facing Businesses

CUSTOMER/CLIENT SURVEY QUESTIONS

Do you own a plug-in electric vehicle? If so, what model?

If not, would you consider buying or leasing one? If so, would that be:

- This year
- Next year
- Within two years
- Longer than two years

When you are at _____, do you park a car here?

About how long is your average visit to _____?

If _____ installed charging stations, would it change how often you (shopped, dined, played) here?

If _____ installed charging, would you be willing to pay for it?

Toolkit for Consumer-Facing Businesses

POLICIES

Policies for consumer-facing businesses should address:

Maintaining safety (cord management, reporting visible damage, etc.)

User registration:

Will you require employee EV drivers to register their cars with the office? If so, how and with whom? Will you use issue parking permits to authorized vehicles?

Employee charging:

- o Available hours
- o Requiring that EVs be actively charging when parked at a charging station (and moved thereafter)
- o Available spaces
- o Active charging only

Customer charging:

- o Available hours
- o Requiring that EVs be actively charging when parked at a charging station (and moved thereafter)
- o Available spaces
- o Active charging only
- o Overnight parking

Grievance:

How to file a grievance, who is the arbitrator, what are the consequences for abusing the policies

Internal process inspecting stations to ensure good working order

Internal process for maintenance and repairs

Toolkit for Consumer-Facing Businesses

CHECKLIST FOR CHARGING STATION PLANNING

- Do you have permission from the property owner?
- Do city codes affect the placement?
- Is your parking segmented between employees and customers? Are employee spaces assigned?
- How many ports do you want to install? (Charge Ready requires a minimum of four.)
- Will the charging stations be wall-mounted or on pedestals?
- Are the parking spaces close to an existing electrical supply?
- If you have shared parking, will at least one port be adjacent to an ADA parking space?
- If a two-foot-square pedestal is installed, is the route from the parking spot to the door at least 48-inches wide?¹⁹
- Can maintenance vehicles navigate around the charging stations?
- When a car is charging, will the cord extend over a walkway and create a tripping hazard?
- Do the parking spaces have lighting? Will drivers feel safe plugging in and unplugging at night?
- Are the parking spaces in the line of sight of a building, the street, or a security guard?
- Are the parking spaces level and well-drained, or will drivers stand in a puddle after a storm?
- Are the EVSEs in the direct path of the afternoon sun?



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ADA: Americans with Disabilities Act

Amperage: A measure of the flow of electrical charge.

Amps: Short for amperes, it is the flow of current (like water through a faucet).

APL: See Approved Product List.

Approved Product List: Also referred to as the APL, the list of charging equipment approved by SCE and meeting SCE's technical requirements. Eligible Participants must select charging equipment from the APL in order to participate in this program. SCE does not provide any expressed, implied, or prospective warranty, including any warranty of merchantability or fitness for any particular use or application, of any EV charging equipment. The APL can be found at www.sce.com/APL. SCE reserves the right to modify the list at any time.

BEV: Battery-electric vehicle: Refers to full battery powered electric vehicle (EV), also known as a battery-powered electric vehicle (BEV).

Charge or Acceptance Rate: The rate at which a battery can charge, measured in kW.

Circuit: The path along which electricity flows.

DCFC: Direct Current Fast Charge: Also called DC Fast Charge. Charging equipment that provides a high-power direct current to the electric vehicle's battery without passing through any onboard AC/DC converter, which means the current is connected directly to the battery.

Demand: The amount of power that a site requires to charge at a given time, also referred to as "load."

Demand Charge: A peak fee determined by the maximum power drawn for a portion of an hour during the customer's routine billing cycle.

Demand Response (DR): DR programs encourage a reduction of electricity use during certain time periods, typically during on-peak hours or when demand for electricity is high, and/or can provide incentives to use electricity during periods of excess generation or when demand for electricity is lower.

Disadvantaged Community (DAC): The areas throughout California that most suffer from a combination of economic, health, and environmental burdens

Distribution: The process of delivering power from transmission lines to the customer.

Dwell Time: The length of time a car sits still before moving to a different destination.

Easement: The right for the utility to access land near utility poles, transformers, and electrical lines.

EV: Electric vehicle.

EVSE: Electric vehicle supply equipment, or the charger unit.

kW: Kilowatt: The unit of measure for electricity. 1 kilowatt is equal to 1,000 watts. This is the rate of speed at which something consumes power, similar to a speedometer. How much energy an electric appliance consumes, for example.

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kWh: Kilowatt-Hour: The number of kW a device uses in an hour, similar to the miles per gallon a car uses to travel. This can be likened to a car's odometer.

Level 1: Charging station equipment that adds 5-6 miles of range per hour of charging.

Level 2: Charging station equipment that adds 10-20 miles of range per hour of charging.

Load Management: The ability of a charging station to control the flow of electrons to cars that are charging.

Make-Ready Infrastructure: Includes all infrastructure work on both the utility-side of the meter, and the customer-side of the meter, from SCE's distribution system up to the first point of interconnection with the participant's EV charging equipment. The segment of infrastructure work on the utility-side of the meter is also referred to as utility-side infrastructure. SCE will always be responsible for designing, procuring, installing, and maintaining the necessary infrastructure located on the utility-side of the meter.

The segment of infrastructure work on the customer-side of the meter includes all infrastructure from the new panel that will be set as part of the utility-side infrastructure work, up to the first point of interconnection with the Participant's EV charging equipment. Charge Ready Program participants will have the option to have SCE perform the customer-side infrastructure work or customers may choose to perform the work themselves.

Meter: A device that records the amount of power flowing through a circuit.

Multi-Family Site: Qualifying multi-family sites are defined as:

- 1 Residential properties** – Structures that are designed to accommodate two or more tenants with shared parking areas.
- 2 Apartment Buildings** – Structure(s) containing two or more dwelling units that may also include common areas and facilities, e.g., entrances, lobby, elevators or stairs, mechanical space, walks, grounds, recreational facilities, and parking both covered and open.
- 3 Retirement Communities, Townhomes, Condominiums** – Residential communities with shared parking areas managed by an HOA or an equivalent association.
- 4 Mobile Home Parks** – Residential mobile home communities with shared parking areas.
- 5 University & Military Housing** – Student or military housing units or apartments with individual cooking facilities (except conventional dormitories and barracks with cafeteria-type kitchens).
- 6 Timeshares** – Vacation property communities with shared parking areas managed by an HOA or an equivalent association.
- 7 Public Parking with Dedicated Overnight Resident Passes** – Public parking lots designated for nearby multi-family residents for overnight parking. Stations can be open for public use during daytime hours.

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Networking Service: A cloud-based service that allows data connection and communication.

Panel: The service box that connects a facility's power to the main power line and distributes energy to various circuits.

On-Peak and Off-Peak: The times of day when electricity cost is highest (on-peak) and lowest (off-peak). These time periods are typically associated with time-of-use (TOU) rate plans.

Peak Shaving: A strategy to reduce power consumption during periods of high demand.

PHEV: Plug-in hybrid electric vehicle.

Ports: The number of handles or connectors on a charging station.

Smart Charger: A charging station that can connect to a network service to accept payment and respond to grid signals.

Substation: A set of electric equipment that reduces high-voltage power to a voltage suitable for the transmission and distribution of electricity.

TOU Rates: (Time-of-use rates): All TOU rate plans feature energy charges that vary based on the time of day, the day of the week, and the season. Some plans also include demand charges that are based on the maximum amount of electricity (kW) your business uses within any 15-minute period within your routine billing cycle. For more information about TOU rate plan options, please visit <https://www.sce.com/business/rates/time-of-use>, or <https://www.sce.com/business/rates/electric-car-business-rates> on TOU-EV rates.

Transformer: An electric device that changes the voltage level of electricity.

Transmission: The process of moving power in large quantities across long distances.

Voltage: Electrical pressure created by a difference in electrical potential.

Watt: The speed at which power is consumed, measured as energy per second.