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Charging and Incentives for Refuse Trucks

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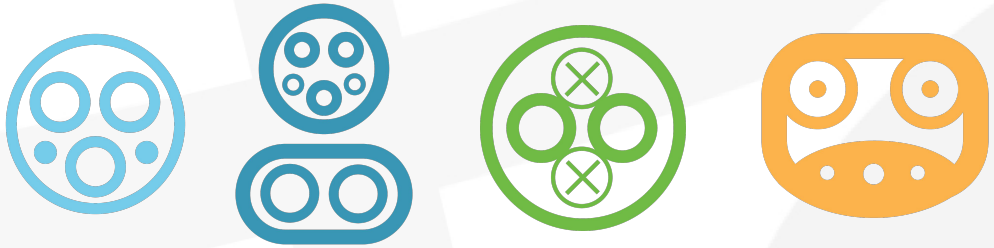
Agenda

- EV Charging Overview
- Matching Chargers to Fleet Profile
- Infrastructure Requirements
- Government & Utility Incentives
- Services Offered by Charging Providers
- About Cleantek

EV Charging Overview

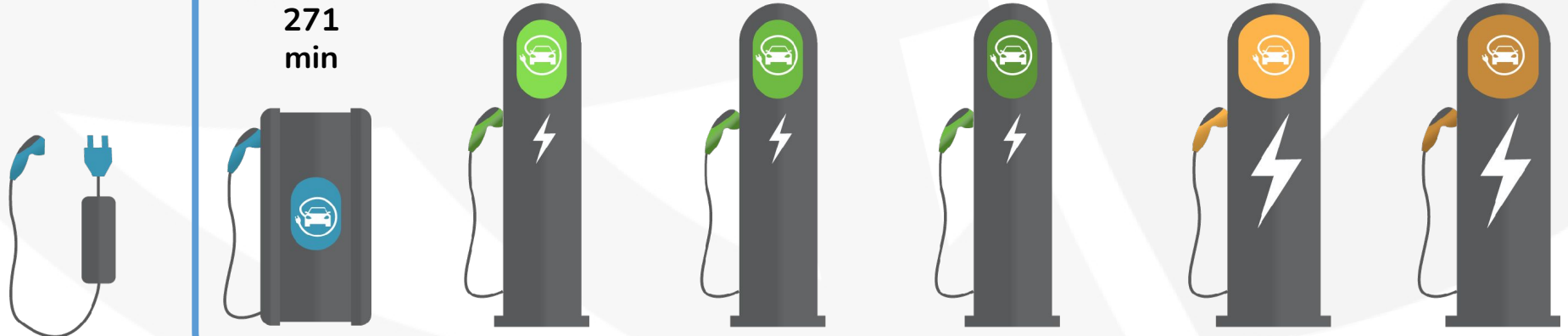
Connector Types



J1775 CCS CHAdeMO Tesla

Types of Charging - Time to Charge for 100 miles of range by kW level

3.6 kW	6.6 kW / 7.2 kW	20 kW	50 kW	150 kW	200 kW	350 kW
542 min	271 min	98 min	39 min	13 min	10 min	6 min



Level 1 Level 2 Level 3 High Power

Matching Chargers to Fleet Profile

What type of trucks are you using?

- Battery pack size
- Connector type: J1772, CCS or CHAdeMO
- Maximum charge rate truck can accept

How quickly do you need to charge the truck?

- Single Shift / "Return to Base" Fleets
- Multi-Shift Fleets

What are the utility rates and demand charges for EV charging?

- Utility rates
- Consider mitigating demand charges by utilizing dynamic load management technologies
- Solar and Battery Energy Storage Systems (BESS) can reduce costs - especially when charging during peak periods.

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Infrastructure Requirements: Existing Panel or New Service?

Existing Panel	New Service
▪ 208/120V or 277/480V? ▪ 208V is suitable for Level 2. ▪ 480V is required for DC fast charging. ▪ Conveniently located? ▪ Is there sufficient capacity in existing panel to add EV chargers?	▪ Identify location for a new metered pan. ▪ Dedicated metered EV panels may allow you to maximize EV incentive utility rates and other credits.

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Infrastructure Requirements: Existing Capacity in Utility Transformer

- Discuss new EV load that you are planning to install with utility.
- Utility rep will determine whether you need to upgrade or install a new utility transformer to service the new load.
- Depending on new load size, you may have options for pole mount or pad mount transformers.

- Pad mount transformers will require additional real estate.
- Co-locating with heavy equipment may require installation of a spill containment tray under the utility transformer.

Government and Utility Incentives

- Utility Rate Incentives
- Utility Hardware/Installation incentives
- CALeVIP
- Local Air Resource Boards (CARB)
- LCFS Credit

Services Offered By Charging Providers

Company Type	Charge Point Operator	Site Acquisition & Financial Analysis	Site Assessment	Site Design, Engineering, Planning & Permitting	Construction Management	In-House Construction	Software / Mobile App	Service & Maintenance	Equipment Manufacturer
Full Service Provider	⚡	⚡	⚡	⚡	⚡	⚡	⚡	⚡	
Charge Point Operator (CPO)	⚡	⚡	⚡	⚡	⚡		⚡		
Engineering & Construction			⚡	⚡	⚡				
Electricians					⚡	⚡			
Equipment Manufacturer								⚡	⚡

- Most ecosystem providers specialize in one or a few areas.
- Engineering, construction, and electrician firms typically don't offer post installation services.
- CPOs outsource construction, don't provide maintenance and services.

Cleantek Services

Financial Modeling
& Site Assessment

Turnkey solution, providing site assessment, design, engineering, planning, and construction services

Complete in-house engineering & construction

Our team has experience with many types of technologies including

Level 2
(up to 20 kW AC)

Direct Current
Fast Charging
(25-100 kW)

High Power
Charging
(100-400 kW)

Battery Energy
Storage Systems

Solar

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Sample Projects

Tesla & Shell Greenlots

Rooftop Marengo Charging Lot
Pasadena, CA

Electrify America

Las Americas Outlet Mall
San Ysidro, CA

Electrify America

Bank of America
San Diego, CA

Recargo

Prunedale Shopping Center
Prunedale, CA

Electrify America

Naiah Hi Sahara Oasis
Essex, CA

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