



The Electric Revolution Is Here.

Our obsession? Making it easy.

-chargepoint+

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Introductions

A Bit About Me



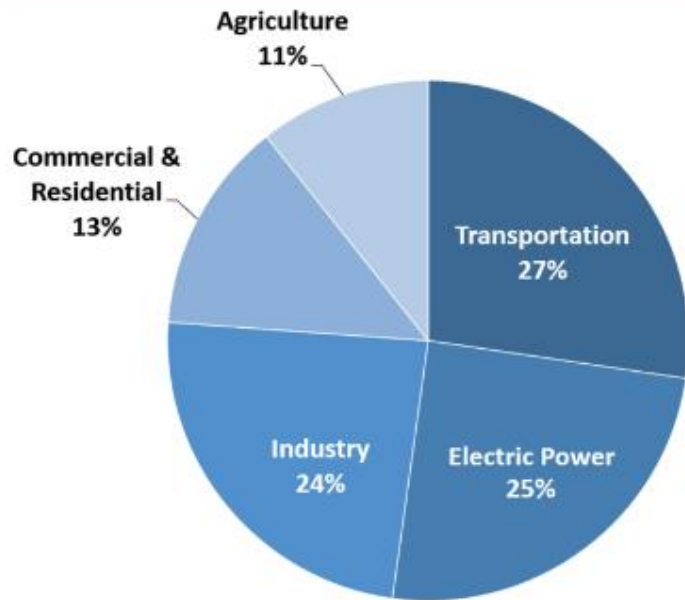
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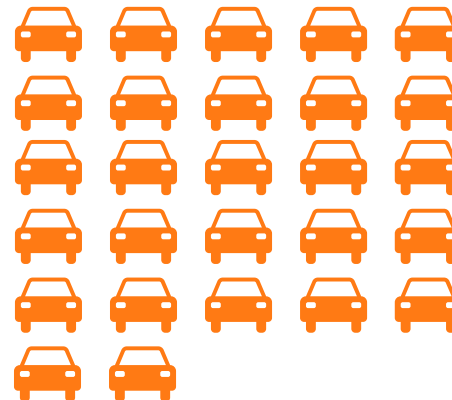
Why Zero Emission in the First Place?

ZEB's Are Cleaner

Total U.S. Greenhouse Gas Emissions
by Economic Sector in 2020



=







What Challenges are New ZE Fleets Facing?

Considerations for Depot Electrification



System
Design



Engineering
Consulting



Spare Parts
Field Service



Technical
Support



Charging
Equipment



Energy
Mgmt



Procurement
Construction



Commission
Train



Charge
Mgmt



Yard
Dispatch
Mgmt

Top Challenges for EV Fleet Deployment

1. Understanding Your New Assets

- + Energy/fuel management
- + Diagnostic Information
- + Data Gathering & Reporting



2. Maximizing Your New Assets

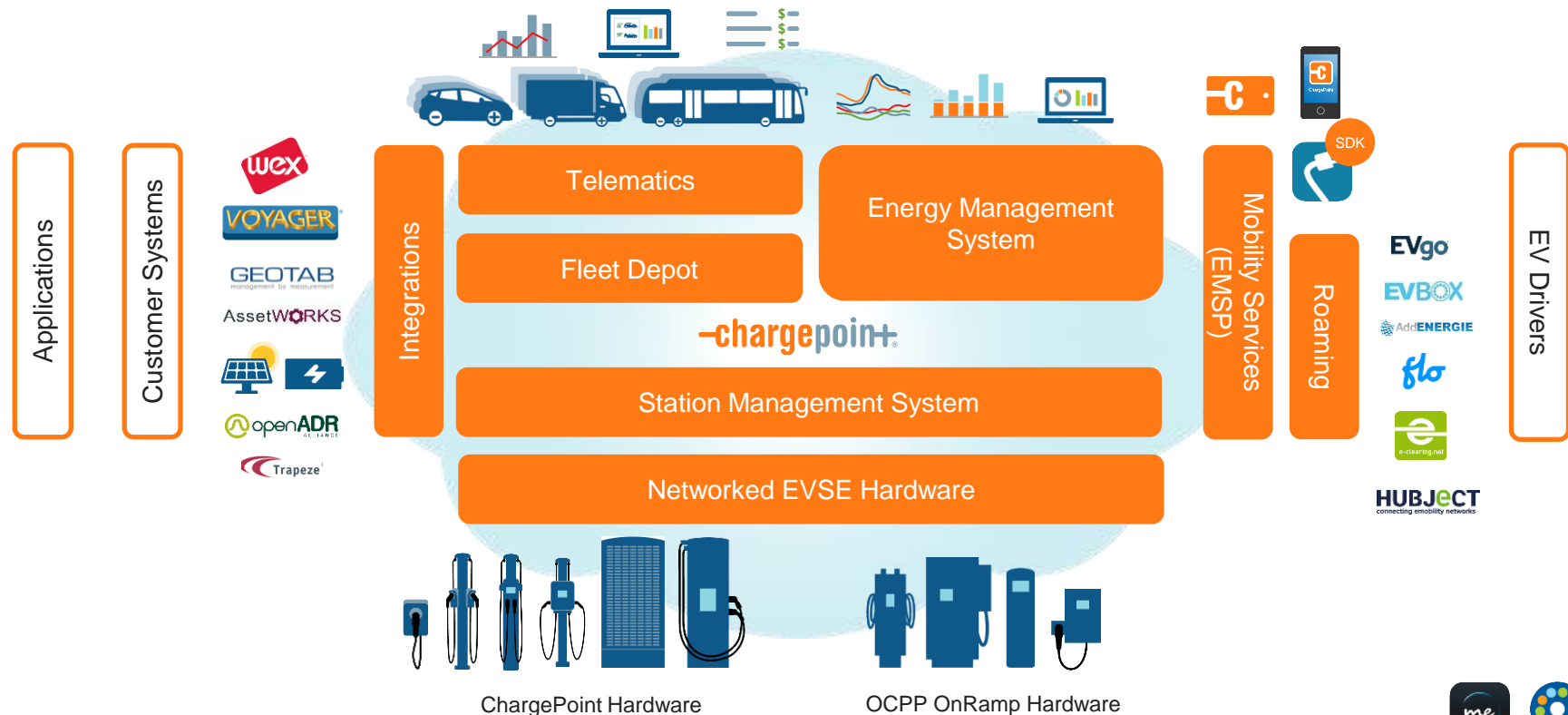
- + Infrastructure/Deployment
- + Utilization and uptime
- + Operational Readiness



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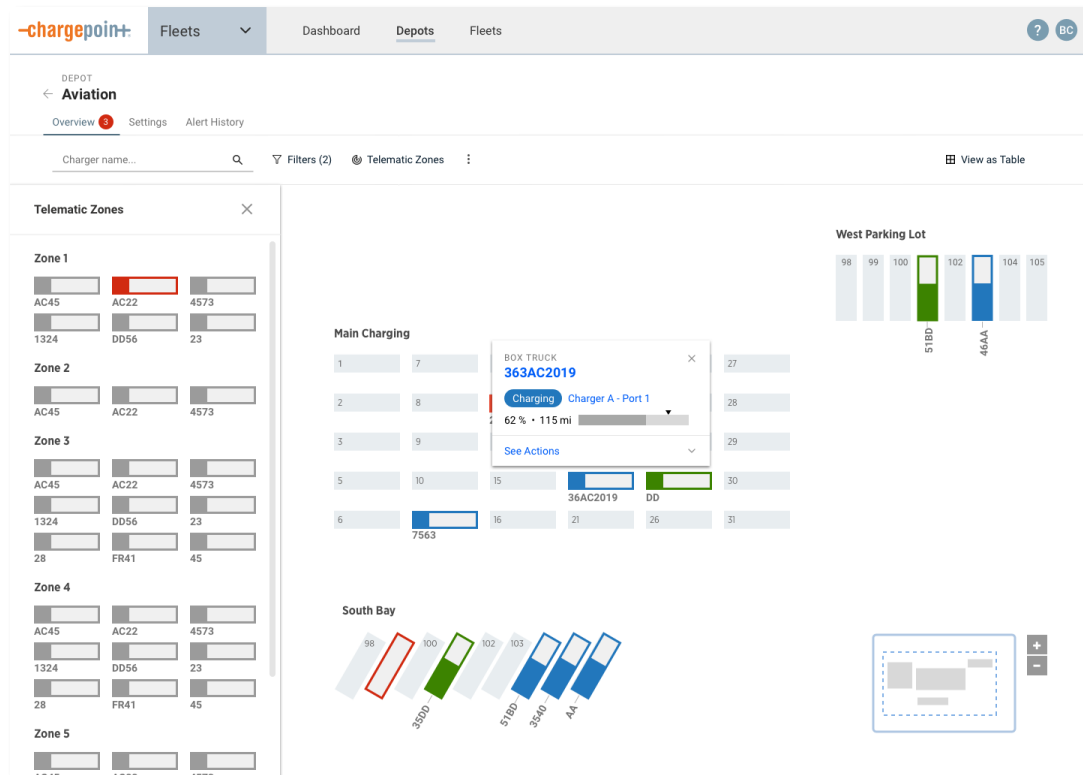
Software Solutions

Start Thinking Software!



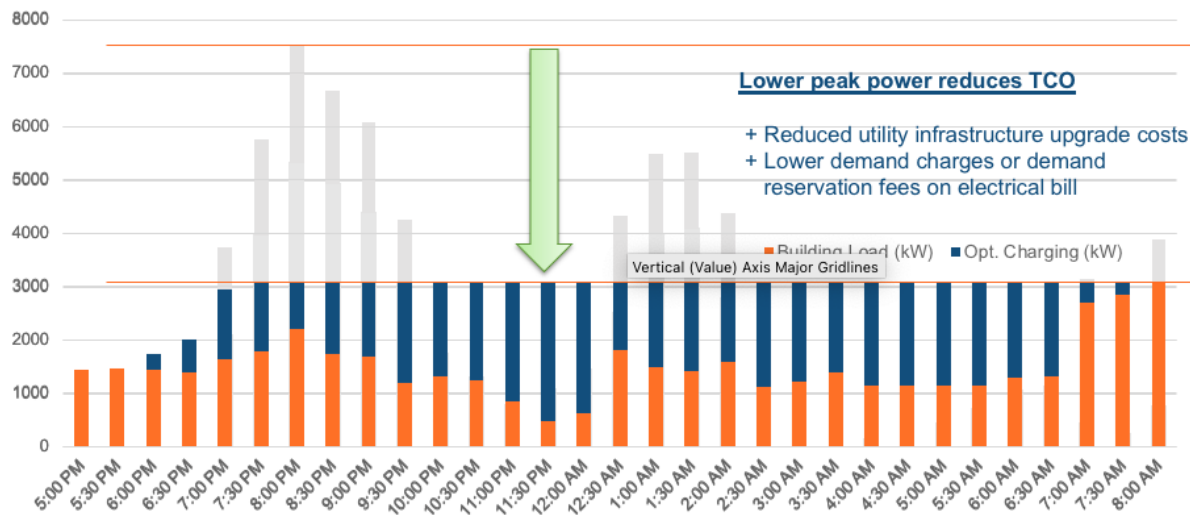
Visualizing Your Depot

- + Allows for variable depot setups (First in First out, First in Last out, etc)
- + At a Glance view of buses that are charging/not charging
- + Alerts for vehicles that dwell too long (without being plugged in)
- + Linking vehicles to charging sessions

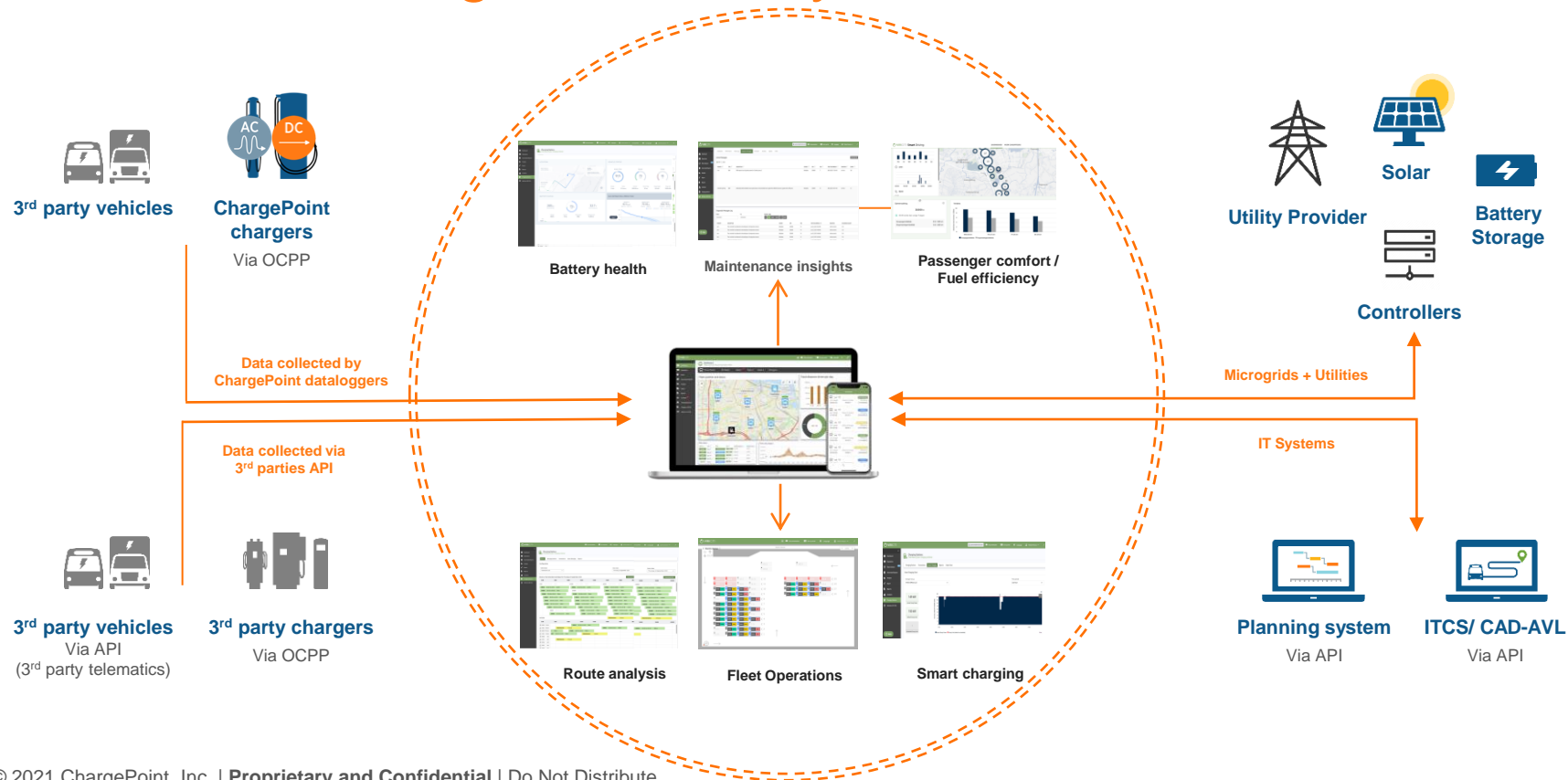


Energy Management

- + “Smart Charging” – limiting power peaks by creating a power ceiling
 - Set limits based on utility rate
- + Session history & utilization rate
- + Prioritize vehicles by fleet/type to ensure readiness
- + Spread charging load out over the dwell time of the vehicle



For A CMS, Integration is Key

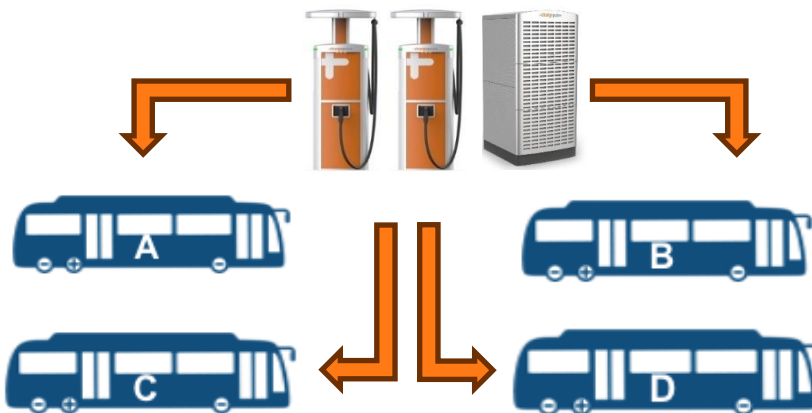
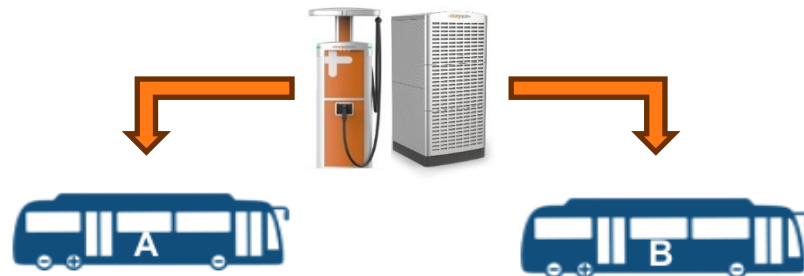


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Hardware Solutions

Bus to Charger Ratio

- + Leading questions:
 - How many vehicles?
 - How long is their dwell time?
 - How much power do you have?
- + Generally shoot for a 1:2 charger to bus ratio
- + Scalable infrastructure allows for more individualistic solutions
- + Utilize fleet modeling services to help reduce infrastructure costs



Charger Installation & Make Ready

- + Network of local Electrical Engineers and Contractors ready for:
 - In person site evaluations
 - Site make-ready
 - Charger installation and commissioning
- + Want to work with a specific EC? Have them become an Installation Partner
- + Full Turn Key Solutions available



Mission Critical SLA + Engineering Consulting Services + Construction Services

ChargePoint Workforce Development

- + Send your maintenance personnel to ChargePoint HQ for a week of charging classes
- + Attendees will focus on:
 - ChargePoint HW + SW Solution
 - How to operate/maintain chargers
 - On-site fixes to common charger problems
- + Recommended for organizations looking to do their own maintenance





Considerations

How to Get Your Data

From OEM's

- + Request Telematics & Vehicle Monitoring in RFP
 - + Telematics partners (like ChargePoint) will provide a guide to necessary parameters
- + Make sure **you own the data**

From Charging Station Providers

- + Ensure stations are networked and communicate over OCPP

From Utilities

- + Bring utility partners in early when planning depot electrification
- + Fully understand their rate structure (EV rates, demand charges)

Things to Think About

Include Charge Management/Fleet Operations software in your grant applications

Opex vs Capex

- + Lots of grants currently limit operating expenses, and many software services qualify as opex because they are recurring yearly licenses
- + Buying multiple yearly licenses at a time can qualify as a capital expense (especially if it's for the lifetime of the charger/vehicle) so try to include multiple years in your applications!

According to the FTA (transit.dot.gov)

- + "Data collection could qualify as incidental project management expenses associated with a Low-No partnership. Applicants would need to define how these expenses are a part of the project implementation strategy and are directly associated with acquiring these vehicles and deploying them in regular service."
- + Lean on your vendors to help define these expenses!

Speaking of Grants

Start asking about grant funding available to public entities for electrification

FTA Low No

- + \$1.7B in FY23
- + Funding just announced, and applications will reopen with more funding in 2024!

EPA Clean School Bus

- + \$5 billion over five years (FY 2022-2026) to replace existing school buses with zero-emission and low-emission models. Funding is inclusive of other infrastructure costs, like EV charging equipment and software
- + Round 1 of 2023 funding closes Aug 22!

California Energy Commission (CEC) EnergIZE Jump Start

- + \$25MM in 2023 for Disadvantaged/Low Income communities to install EV infrastructure
- + Application window closes Aug 18

ChargePoint has a team of grant experts and writers to help you apply, and even apply on your behalf!

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Thank You!

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