



The Electric Revolution Is Here.

Our obsession? Making it easy.

-chargepoint+



Get Plugged In - EV Infrastructure That Benefits Your Community

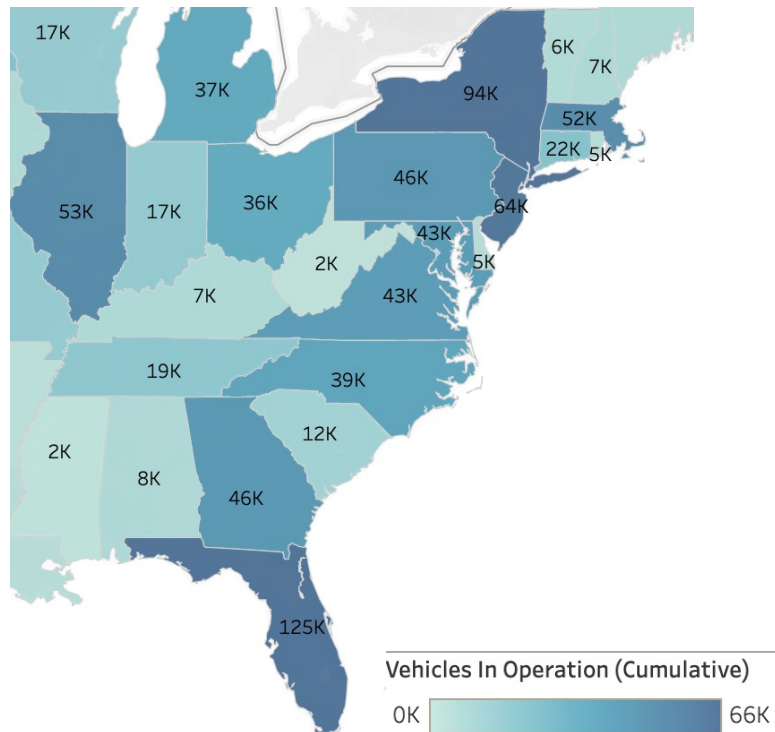
Ben Kessler, Public Policy Manager

10 June 2022

Prepared for



The Future of Mobility Is Electric

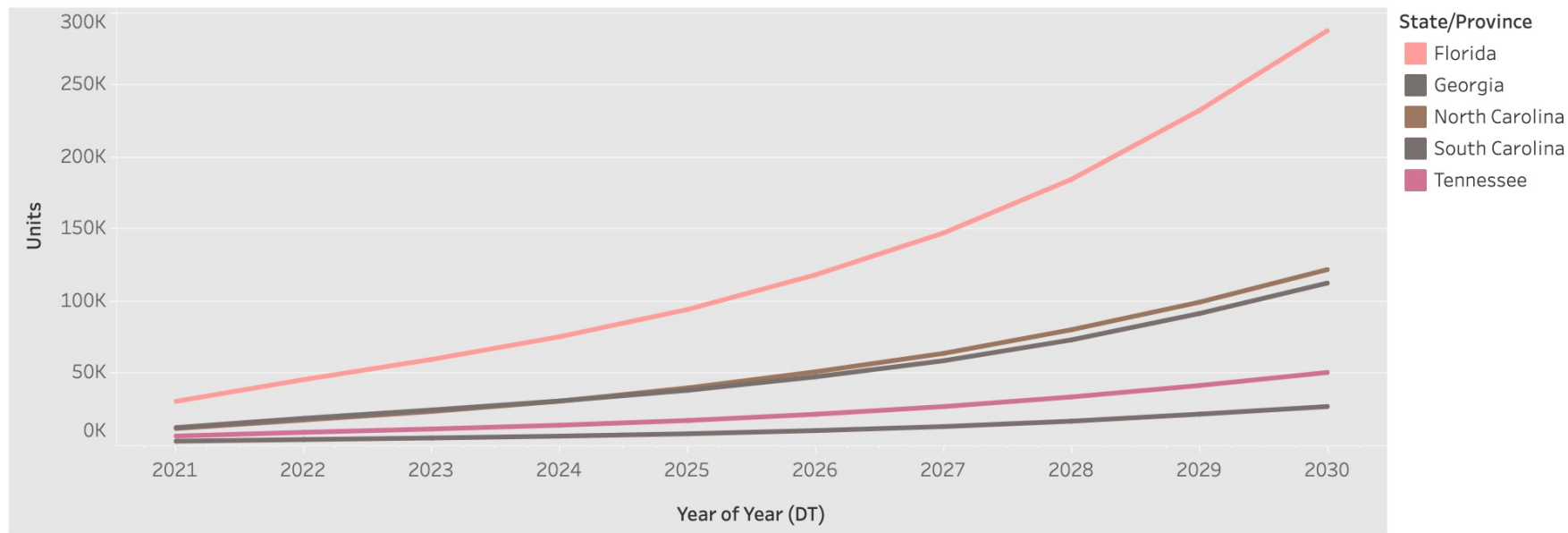


Georgia EV Announcements:

- Rivian: \$5bil, 7,500 jobs
- SK Innovation: \$2.6bil, 2,600 jobs
- Hyundai: \$5.54bil, 8,100 jobs

Recent EV Related Investments in Georgia			
Company	County	Product	Year
Rivian	East Atlanta Megasite	EV OEM	2021
SK Innovation	Jackson	Electric vehicle batteries	2018 & 2020
Aurubis	Augusta-Richmond	Recycling copper for use in EV batteries	2021
Aspen Aerogels	Bulloch	Aerogel thermal barrier solutions	2022
GEDIA	Whitfield	Stamped parts for MBUSA EV	2020
EnChem	Jackson	Battery electrolyte	2020
Ascend Elements	Newton	Lithium-ion battery recycling	2022
Duckyang	Jackson	Modules and storage systems to SK	2021
Hyundai TRANSYS	Troup	Seats for EV manufacturers	2021
TEKLAS	Gordon	Mfg/R&D engine parts for EV	2020
Heliox	Fulton	E-mobility charging stations	2021
EcoPro	Fulton	Battery cathode material	2020
Dongwon Tech	Hall	Duct manufacturing for SK	2020
Plug Power	Camden	Liquid hydrogen for fuel cell EV fleets	2021
Wonbang Tech	Gwinnett	Clean rooms for battery manufacturing	2020
Hyundai Sungwoo Solite	Fulton	Batteries for vehicles	2019

The Future of Mobility Is Electric



2021 Georgia Annual EV Sales: ~12,000

2022: ~18,300

2026: ~50,600

2030: ~112,150

Guidehouse/Navigant

We Make Electric Easy for You

54%

of Fortune 500
companies use
ChargePoint*

-chargepoint-

Separately Owned and Operated
Places to Charge...



Reliable hardware, software and
services designed to work together

Delivered in One
Network for Drivers...

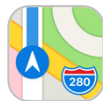


4.5★
13.8K reviews

500K+
Downloads

E
Everyone

Integrated with Ecosystem Platforms
for a Convenient, Seamless Experience



Apple CarPlay



androidauto



WORKS WITH
amazon alexa

VOYAGER



Apple, Google, Amazon, fleet
platforms and more

*2021 Fortune 500 list

Some of Your Peers Participating in the New Fueling Network

Commercial

Workplace & Commercial Properties



Education



Fueling & Convenience



Healthcare



Hospitality & Retail



Multi Family



Parking



Fleet

Delivery & Logistics



Sales Service & Motorpool



Shared Mobility



What type of EVs are there?

+ Plug-in Hybrid Electric Vehicle (PHEV)

- Powered by Internal Combustion Engine (ICE) and/or battery
- Needs to plug-in to charge battery
- Depletes battery before starting ICE



+ Battery Electric Vehicle (BEV or EV)

- No ICE
- Plugs in to charge batteries
- Exceptionally low maintenance/fuels costs
- Average range of MY2020 was 250 miles



What charges an EV?

+ Level 1 “Trickle Charge”

- 110V AC, 1.3kW-1.9kW
- 2-5mi per hour of charging
- Good for extended parking stays (2+ days)



+ Level 2

- 208/240V AC, 3.3kW-19kW
- 10-40mi per hour of charging
- Good for fleet, overnight, destination, workplace, multifamily



+ Level 3 “DC Fast Charging” (DCFC)

- 480V DC, 62.5kW-350kW
- 60-200+mi per 20min of charging
- Good for traffic corridors, community, on-route, bus and truck



ChargePoint® Express Plus Hardware Platform

How fast is fast?

It depends

- + Fast charging output is not linear
- + Vehicle dictates how much (kW & kWh)
 - Batter management system (voltage)
 - State of Charge (SOC)
 - Battery size (range)

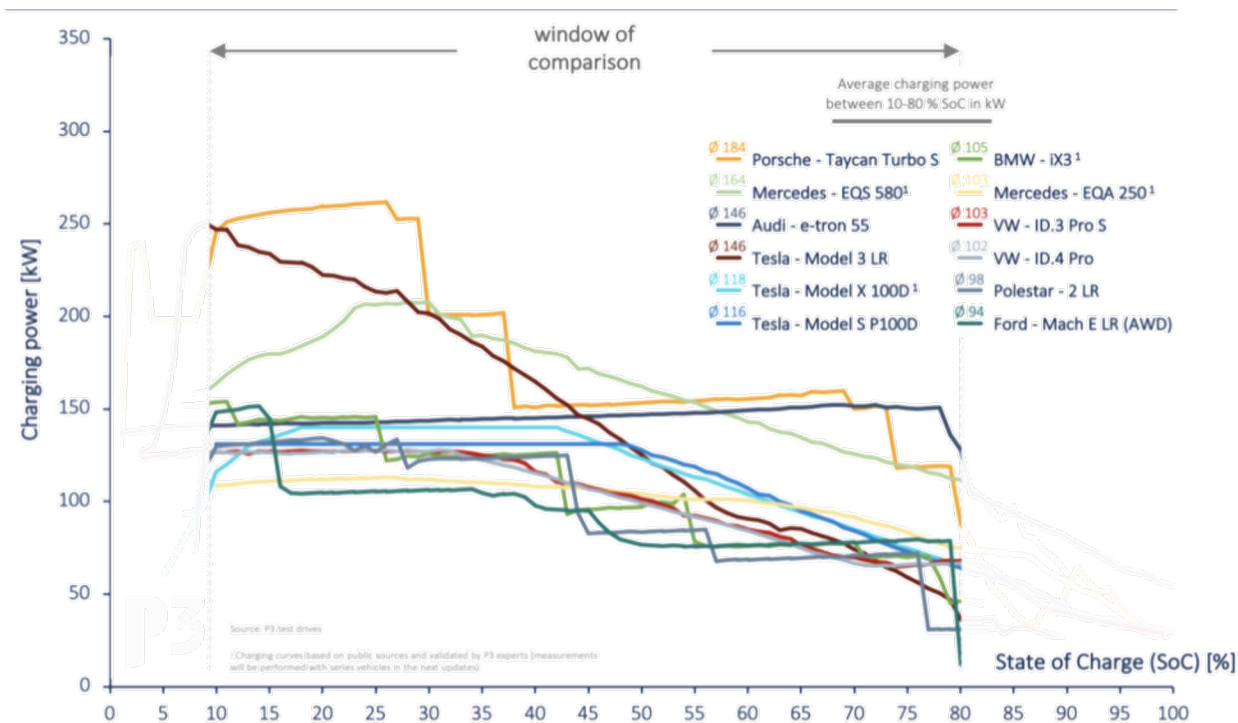
Today's Average Fast Charge Session

- + 22 min avg. 15-45 min min-max
- + Avg of 25kwh per session
 - Drivers typically arrive at 20-30% SOC
 - Drivers typically move-off at 80% SOC

Mitigate stranded Energy and CAPEX

ChargePoint fast charging allows for modular power sharing and power management

Charging Curves for BEV Models



What plug do EVs use?

- In 2011 SAE set CCS and J1772 as the plug standard for OEMs.
- US widely uses CCS and J1772
- Models like the Nissan Leaf use CHAdeMO



What is the electrical hook up?



Level 1 (110V)
8-12amps



Level 2 (208/240V)
16-50amps



DCFC (480V)
100+amps

A decorative graphic on the left side of the slide, consisting of a grid of plus and minus signs in a light blue color. The signs are arranged in a pattern that roughly forms the shape of the ChargePoint logo.

Community Impact

New Fueling Behaviors

Personal Vehicles

Commercial and Residential Businesses



At home, work, around town, on the road

- + Charging every electric passenger vehicle on the market
- + Primarily charging while parked; speed matched to natural parking duration, mostly level 2
- + Fast charging for occasional road trips or in a pinch

Work Vehicles

Fleet Business



Photo: Frito-Lay

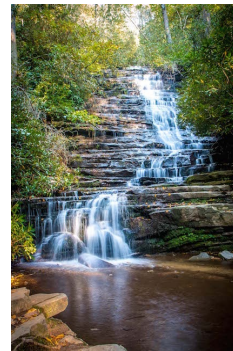
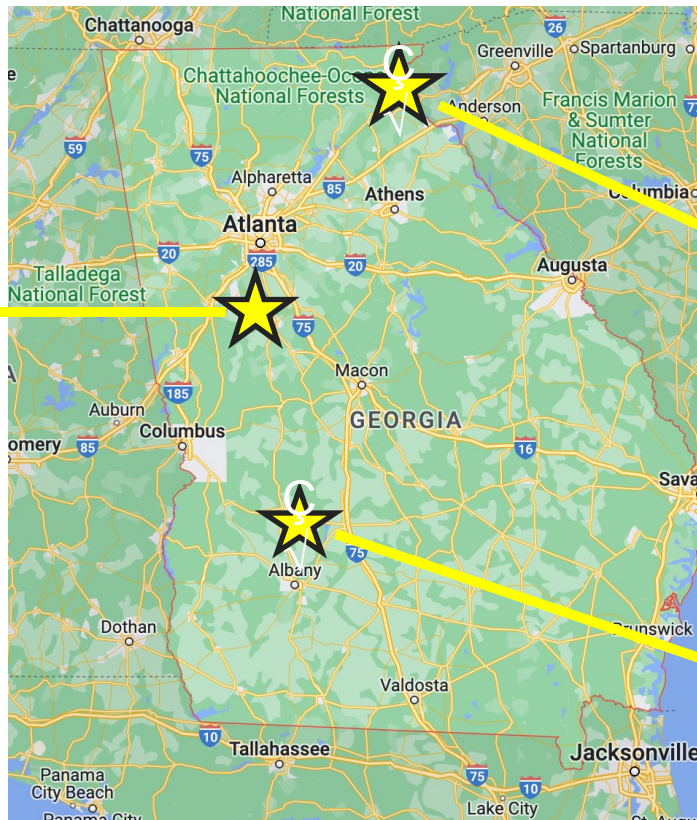
At the depot, on route and at home

- + Charging for light, medium and heavy duty vehicles
- + Software determines optimal charging to get everything fueled, most economically, and on schedule
- + Able to support on-route charging via our commercial network, and residential charging for take-home fleets

3 Georgia Communities



Fayette County, GA
Population ~105,000

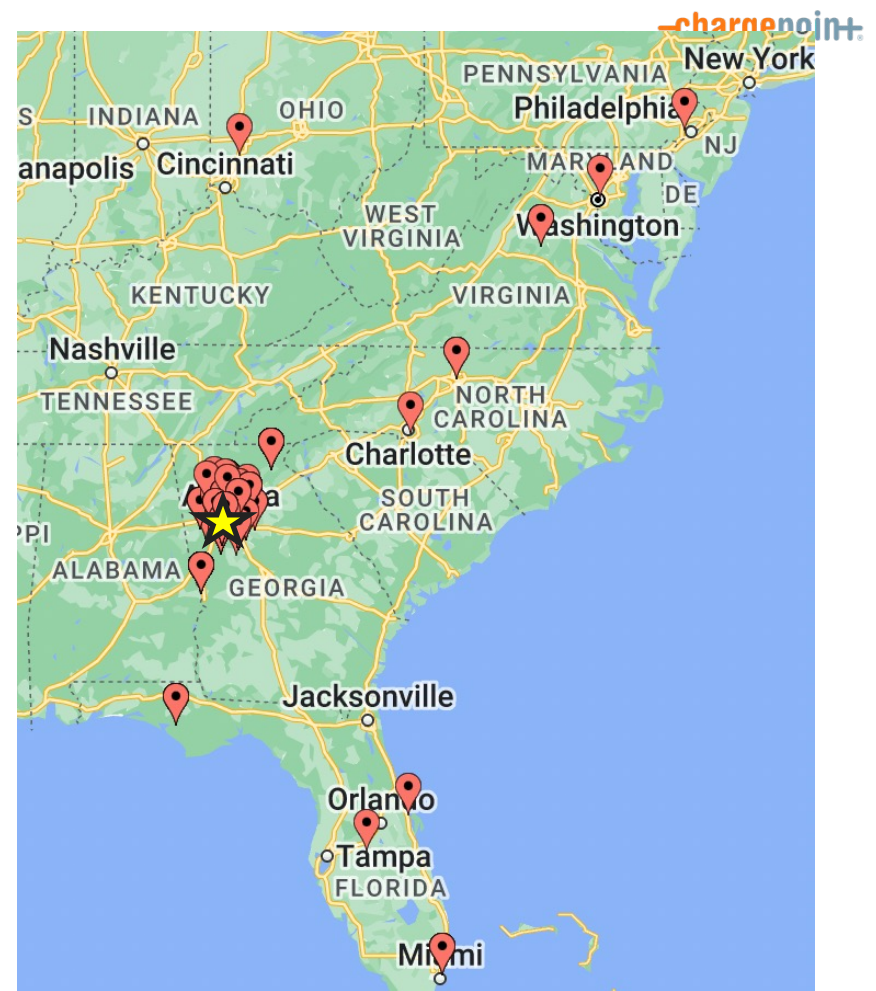
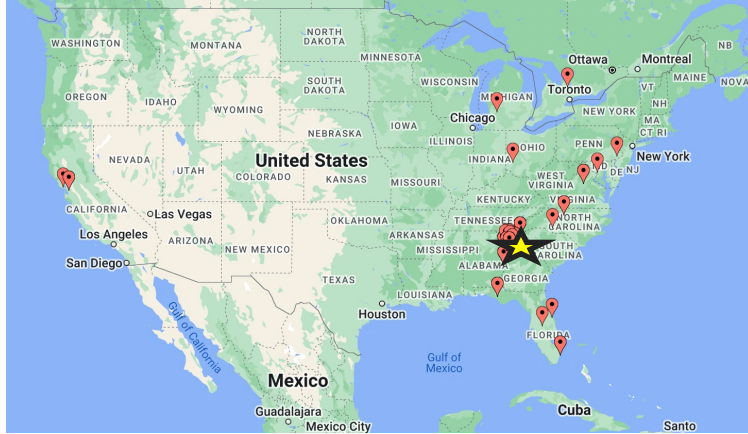


Clayton, GA
Population ~2,003

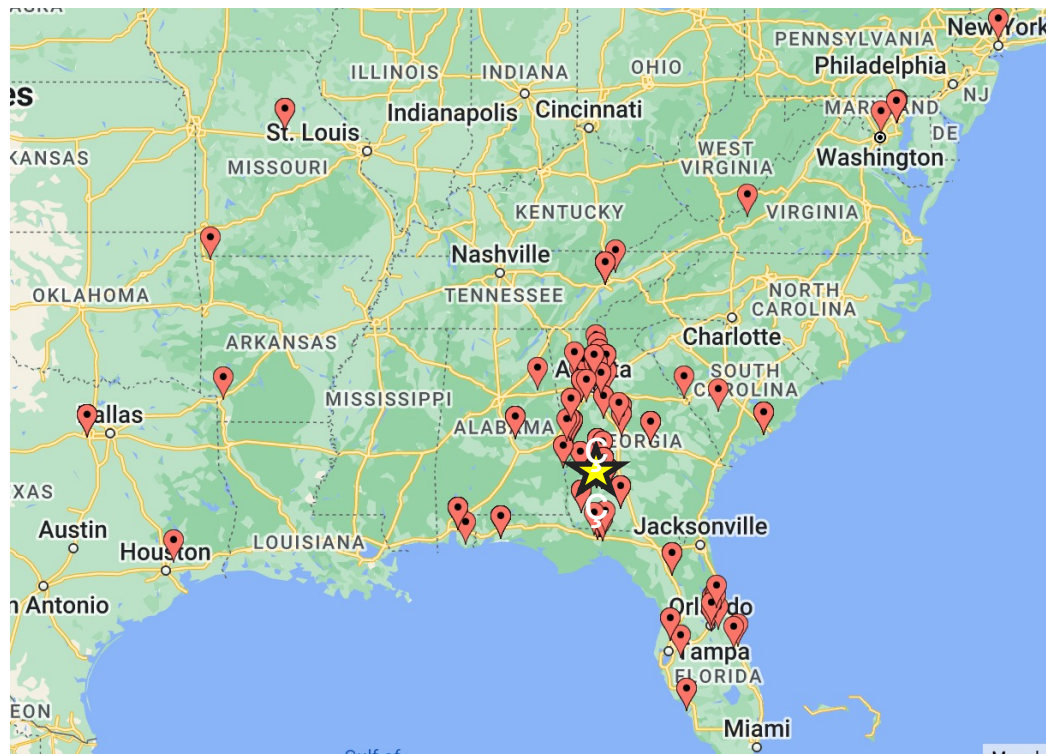
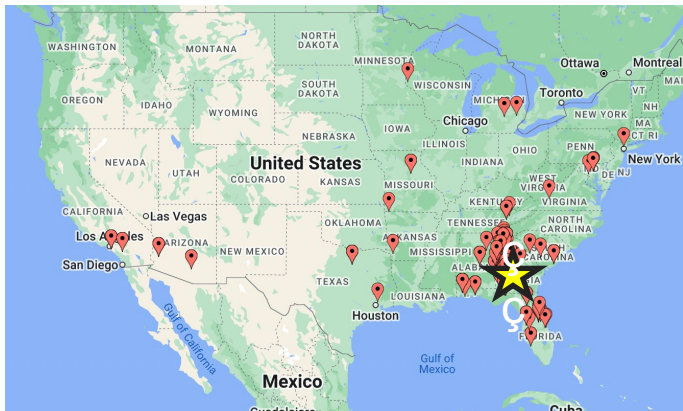


Leesburg, GA
Population ~ 3,035

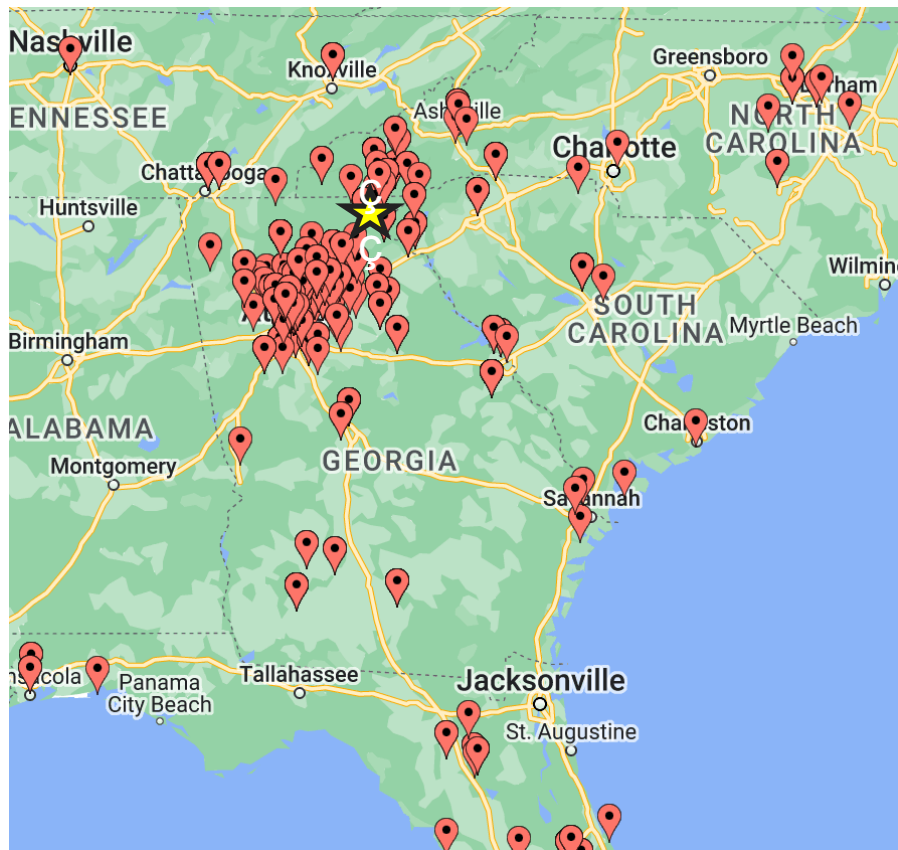
Fayette County, GA



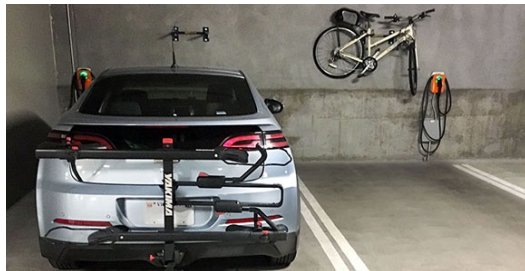
Leesburg, GA



Clayton, GA



Snapshot: Multi-Family and Single Family



~80% of EV charging happens at home

Opportunity for Make-Ready Programs and Building Codes

Capabilities to power share at the circuit, panel, or charger

Home Charging enables confidence

Snapshot: Light Duty Fleets



Use Behavior: Construction, Administration, Police, Parking/Code Enforcement, Delivery. Range of around 250-300+mi.

User: Contractors, Cities & Counties, Private Businesses

Charging Behavior: Behind the Gate, Public Charging, Opportunity Charging.

Solutions: Fleet Chargers – CPF50, CPE250, Express Power Plus
Energy Management and Fleet Services

Snapshot: Medium and Heavy-Duty Fleets



Use Behavior: Range ~250-300mi: Drayage, Urban Routes, Industrial/Port Delivery, Logistics Movers, Transit and School

User: Suppliers for Manufacturers, Warehouse/Terminal Movers, Urban Delivery Operators, Government Fleets, Refuse

Charging Behavior: Behind the Gate Charging – Opportunity Charging.

Solutions: Fleet Chargers – CPF50, CPE250, Express Power Plus
Energy Management and Fleet Services

A decorative pattern of plus and minus signs in a light blue color, scattered across the left side of the slide.

Infrastructure Impact

Why Utilities Are Proactively Supporting EVs

- + **Overall load growth is flat to declining in many regions, putting upward pressure on rates**
- + **Transportation electrification is a rare win/win/win providing benefits for the utility, customers, and society**
- + Provide new products and services for customers
- + Greater customer satisfaction
- + **EVs are a key element of the distributed energy future**
- + Potential for partial investment in charging infrastructure, leading to improved data, planning and load management
- + Set smart charging habits today to support future wide scale adoption

EVs Provide a Beneficial Load for the Grid

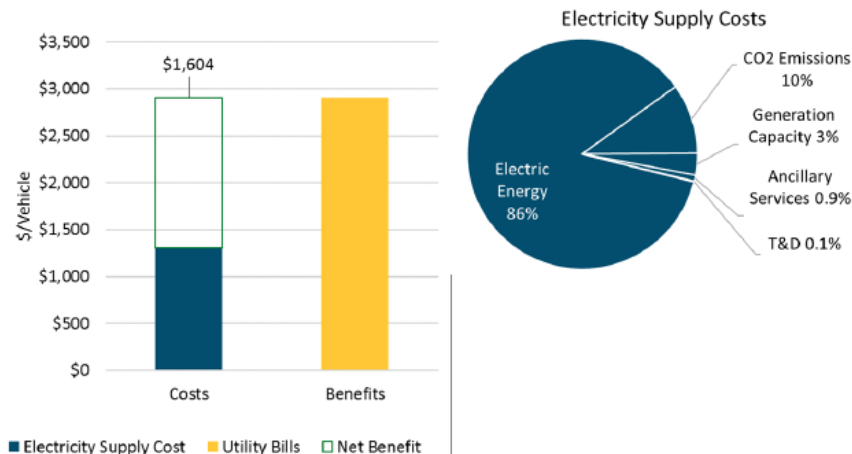
+ Smart EV load growth can provide many utility benefits including:

- Increased system utilization
- Flexible load
- Smart-grid/micro-grid enabler
- Support renewables integration
- New customer touch point
- Downward pressure on rates

+ As well as societal benefits:

- Improved air quality
- Reduced GHG emissions
- Support local economic development
- Improve energy security and resiliency

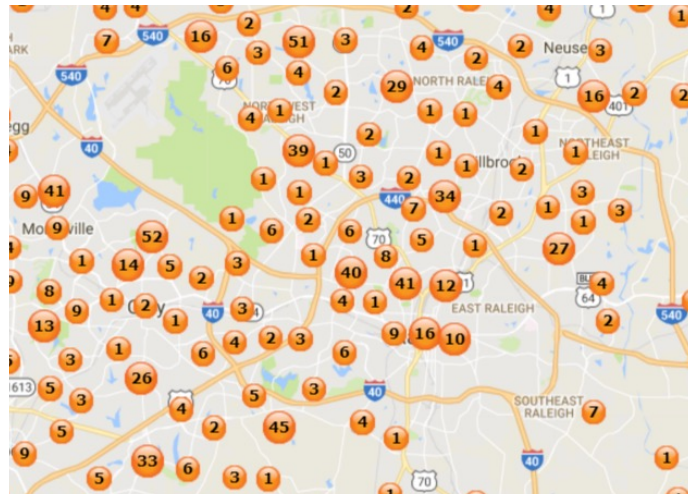
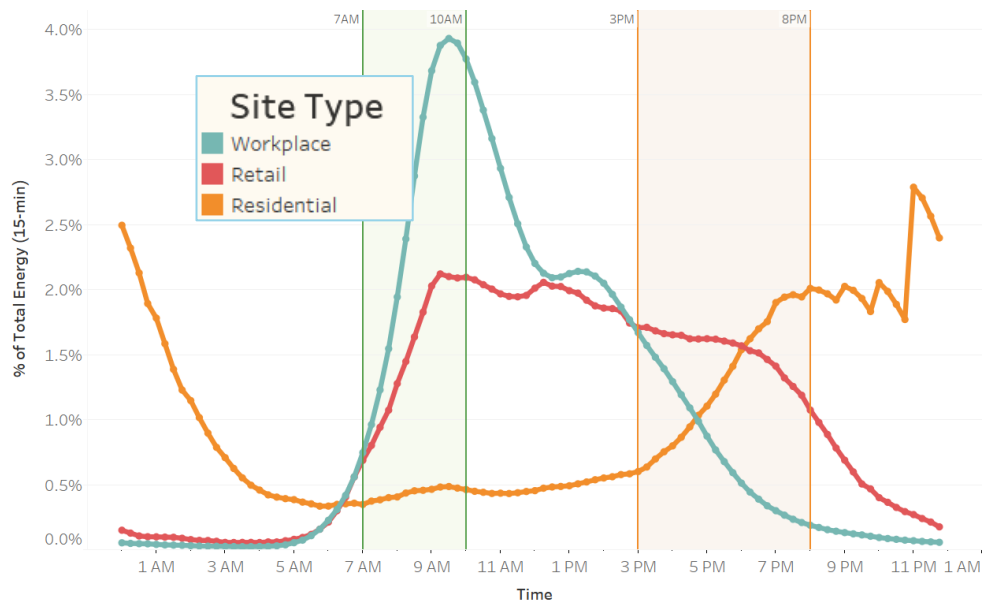
Figure 20. Ratepayer Perspective costs and benefits, per vehicle. Managed Charging scenario, High PEV Adoption case



Source: E3 (2017). "Cost-Benefit Analysis of Plug-in Electric Vehicle Adoption in the AEP Ohio Service Territory"

Grid Planning & Customer Support

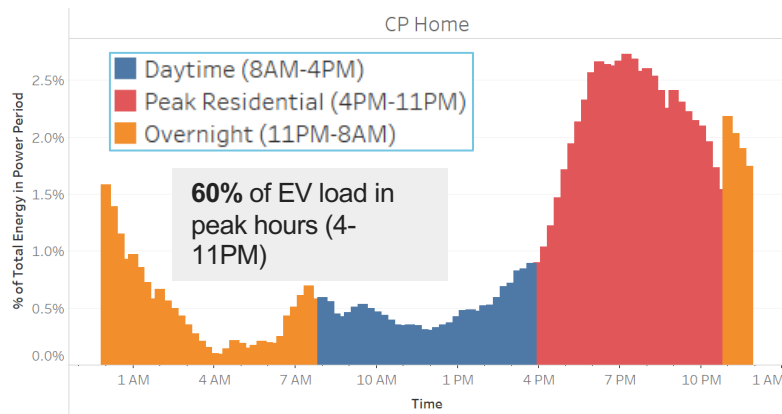
- + Smart charging station data can enable utilities to better understand the shape, growth, and location of EV load in order to support forecasting and distribution planning
- + EV load varies in magnitude, time, and geography by use case



Load Management

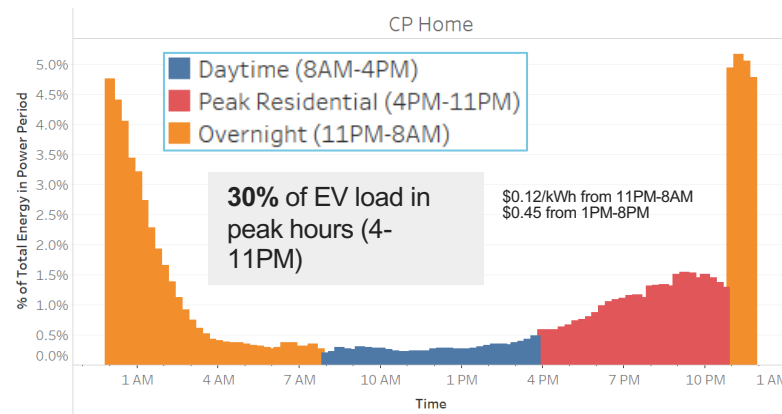
- + Evaluating commercial rates tailored to support DC fast charging applications
- + Utilizing EV TOU rates or DR capabilities in the home to encourage off peak charging

King County, WA



Customers charge when they arrive home.
Peak charging at 6 – 8 pm.

Santa Clara County, CA

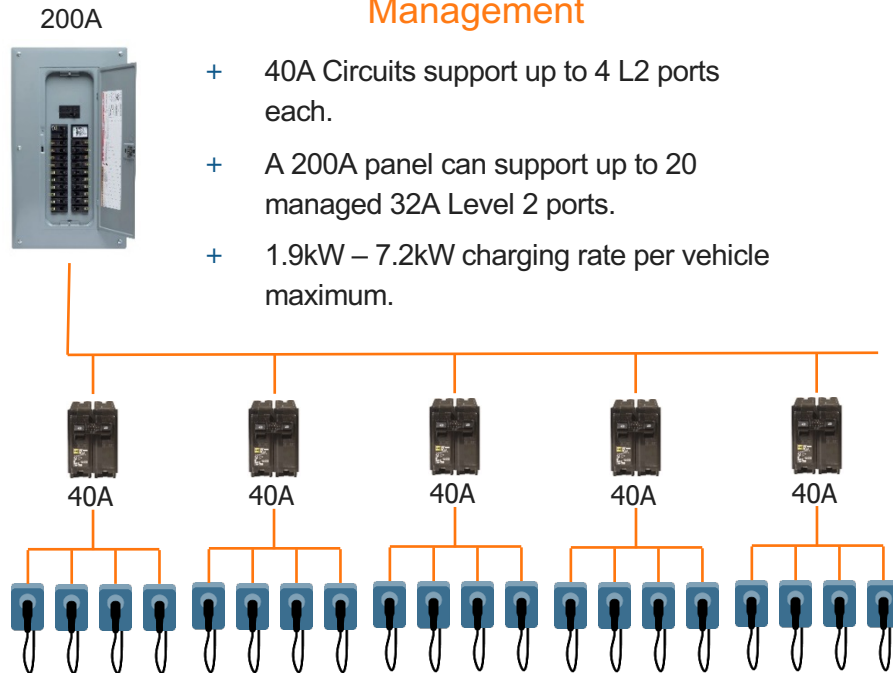


EV TOU rates delay peak charging until 11pm.

Power Management Enables Personal Charging at Scale

- + Power Management maximizes the number of ports while avoiding costly upgrades
- + Power sharing dynamically adjusts charging rates in real time to not exceed power limit
- + Long dwell time for overnight personal charging allows power flexibility while ensuring resident gets a full charge

With Network-Based Power Management



Siting Charging Stations

Keep Driver Experience in Mind

- Amenities
- Safety & Security
- Points of Interest/Traffic Corridors
- Restrooms

<ul style="list-style-type: none"> + County - CANYON + Parcel - RXXXXXXXXXXXX + Owner - XXXXX XXXX LLC + Utility - IDAHO POWER 	<p>Equipment: 4x Express Plus Power Link Chargers</p> <ol style="list-style-type: none"> Existing Utility 208V xfrmr Proposed NEW Utility 480V xfrmr - Chargers New Meter, 1400amp Secondary + (4) Power Blocks 5 Parking Stalls / 4 Dispensers w/ 12'8 ADA accessible Stall & 5' Access Aisle Tie in Path of travel accessibility
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Think of ways you can support your community with economic engagement

- Main Street
- Parks and Tourism
- Mixed Use Developments

Keeping stations up and customers happy

- ✓ We're the **only** company with an advanced in-house test facility
- ✓ Proactive monitoring with ChargePoint Assure
 - ✓ 98% Charging Uptime
- ✓ 24/7 driver and site-host support in multiple languages
- ✓ All products are UL-listed, ENERGY STAR® and CE (EU) certified



Eyes on the Road

Internal

- Knowledge is Power
 - Develop an EV Point Person
 - Provide EV Learning Opportunities for your Community

Funding

- Clean Cities Georgia
- National Electric Vehicle Infrastructure (NEVI) Formula Program
- Community Charging
- EPA School Bus Rebate Program

One Network, Many Branding Opportunities



Products designed with brandability in mind

Most Advanced Charging Software and Services



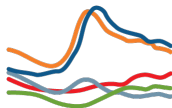
Dashboard & Analytics

Station owners see how stations are being used and when it's time to add capacity.



Waitlist

Drivers can get in line and get notified when a station is available, improving utilization.



Energy Management

Efficiently and automatically utilize power available for charging vehicles. Save money on costly upgrades and avoid demand charges.



Flexible Pricing

Price by hour, kWh, time of day, customer type or any combination.



Access Control

Limit who can use the charging stations and when. Station owners can disable charging during "closed" times.



Fleet Services

Fleet managers can track vehicle charging and pay for electricity if the vehicles need to charge at other stations.



Driver Services

Automatically notify drivers of a full charge, available station, changes in power and more.



APIs

Most functions are also available through SOAP/XML and REST APIs that follow the same data access rules as the UI.

Thank You

Ben Kessler

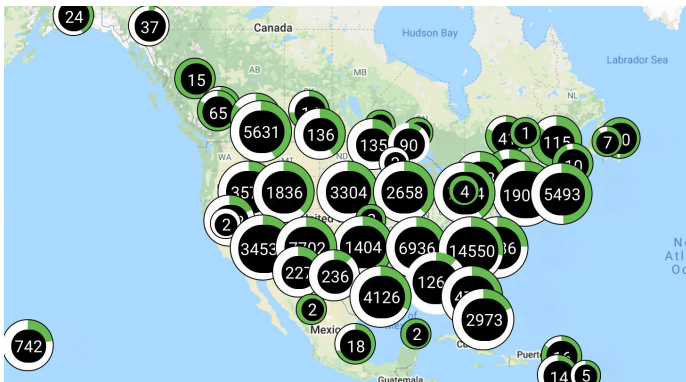
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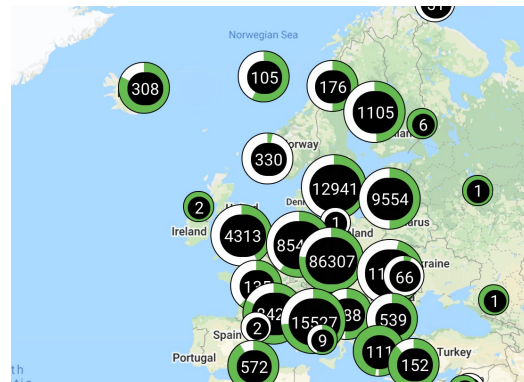
+1.803.766.6527

Unrivaled Network Reach

180,000+ activated ports | **11,500+** activated DC ports
300,000+ ports accessible via roaming integrations



- A leader in North America all-purpose charging
- + Operating across verticals
 - + Integrated into where people live, work, play



- Operating in 16 European markets
- + Support in 9 languages
 - + Partnerships with energy retailers and leasing solution providers

*As of June, 2022. "Activated" ports are installed and activated on our network.

Integrated to the EV Ecosystem

Automotive Platforms



- + Android Auto
- + Apple CarPlay
- + Audi
- + Mercedes-Benz
- + Pininfarina
- + Polestar
- + Porsche
- + Seat
- + Skoda
- + Volkswagen
- + Volvo
- + Xpeng



Consumer Platforms



- + Apple Wallet
- + Apple Maps
- + Google Maps
- + Google Pay
- + Amazon Alexa



Fleet Platforms



Roaming Integrations with Other Charging Networks



Services for Planning, Installation and Ongoing Support

+ Site Assessment, Scoping and Project Management

- Accurate site qualification, quality site preparation and professional installation
- Nationwide network of O&M partners who provide setup services
- Initial Activation and Configuration service provides a specialist to consult directly with station setup and activation



+ Ongoing Service Support

- Standard warranty coverage for one year; includes parts only when installed by ChargePoint dealer
- ChargePoint Assure is the industry's most comprehensive EV charging station maintenance and management program
- Station owner phone support during business hours
- 24/7 driver support in multiple languages



Open, Secure and Privacy Compliant

+ Open Network

- Compliant with industry-standard protocols for managing 3rd party chargers and roaming
- Enables direct vehicle-to-station and vehicle-to-grid communications
- Integrates with OEM in-car navigation, leading mapping providers and preferred consumer platforms like iOS, Android and Alexa

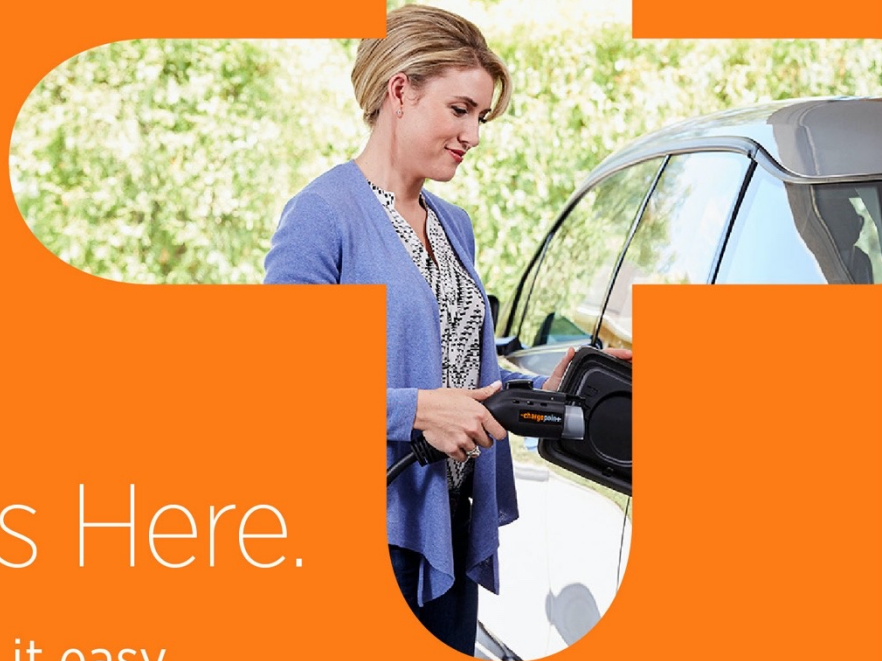
+ Secure Solutions

- Safety and security of our networks, data and hardware are integral
- GDPR compliant from Day 1 of enforcement

+ Single Global Cloud Service

- Quickly and easily deployed in new regions to address local market needs and regulations
- Extensive integration with 3rd party systems through proven APIs

152
patents
across all aspects
of EV charging



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