Making Charging Work

Mike Waters, Director Utility Solutions

November 16th, 2017

Pop Quiz: What is This?

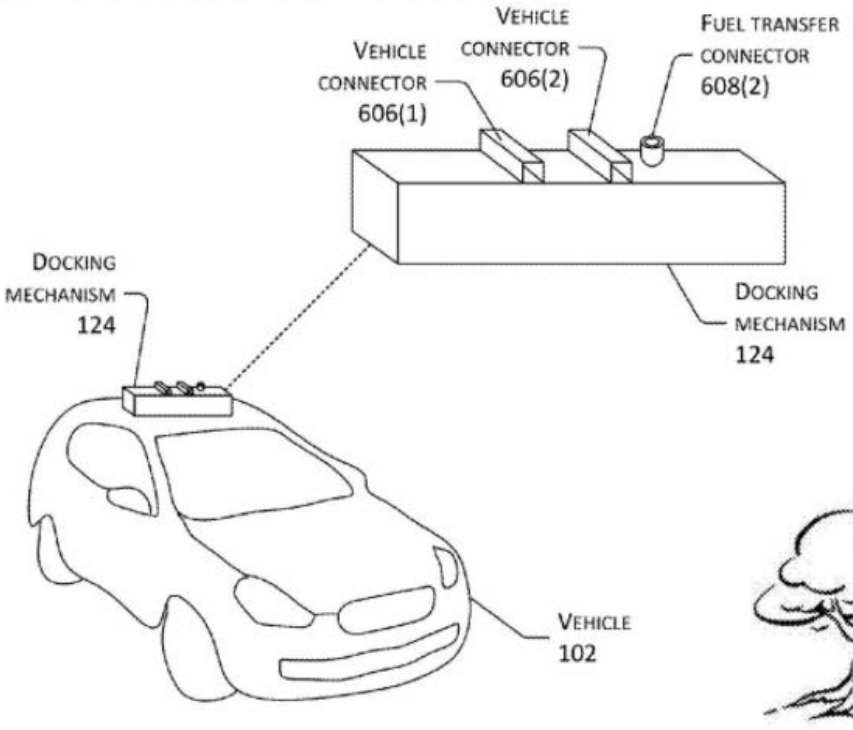


FIG. 6

Enlarge Image

© 2017 ChargePoint,

The Nation’s Largest EV Charging Network

Largest Community of EV drivers

+ 70% of new EV drivers join every month
+ A driver plugs into our network every 2 seconds

41,000+ Spots

Charging Everywhere

+ 41,000+ charging spots
+ 28M charging sessions
+ 600+ ports added every month

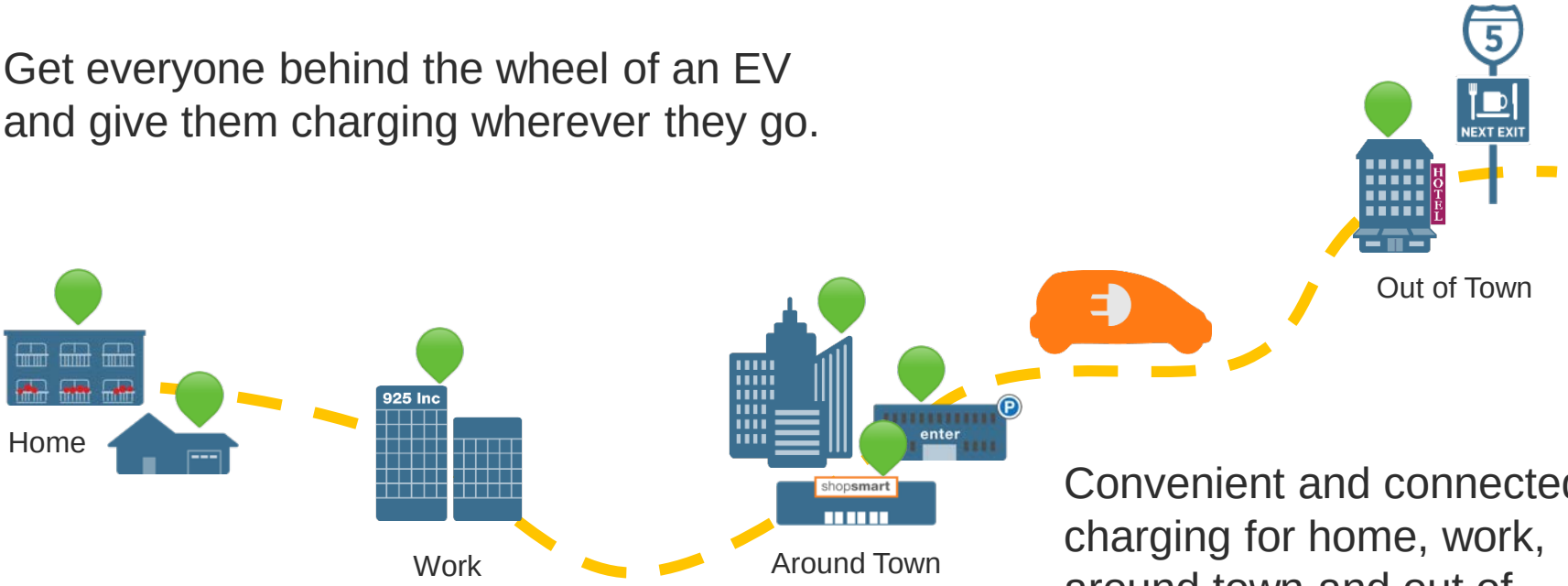
We’re Established and Growing

+ ~$300+ million in funding
+ Recent Daimler, Siemens investment
+ NA market leader plus European expansion

© 2017 ChargePoint, Inc.

Our Mission: EV Charging, Everywhere

Get everyone behind the wheel of an EV and give them charging wherever they go.

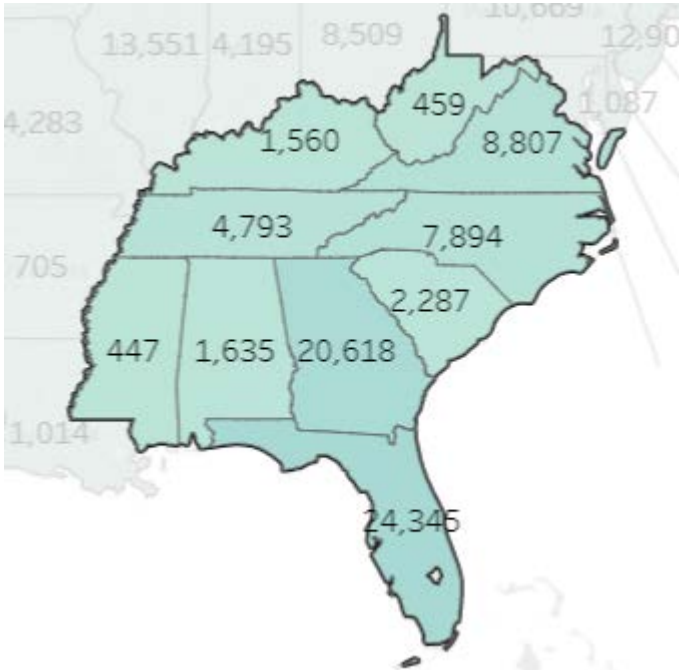


Convenient and connected charging for home, work, around town and out of town.

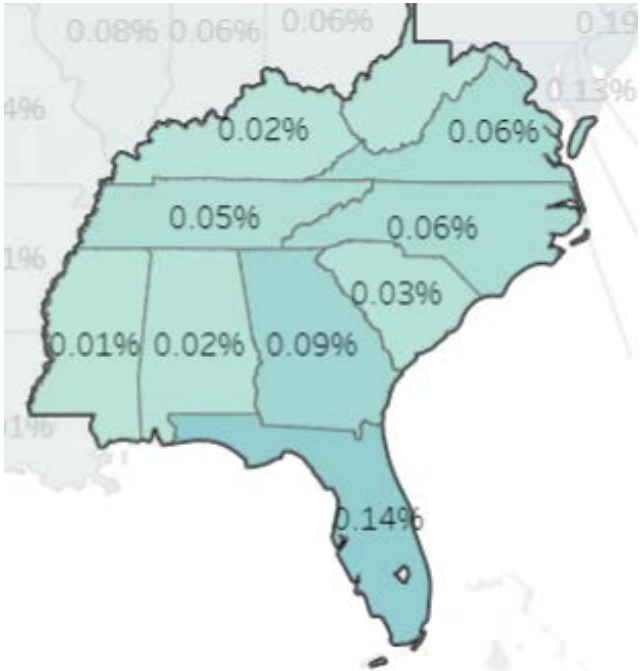
© 2017 ChargePoint, Inc.

EV Market in the Southeast

EVs in Operation 2017Q2



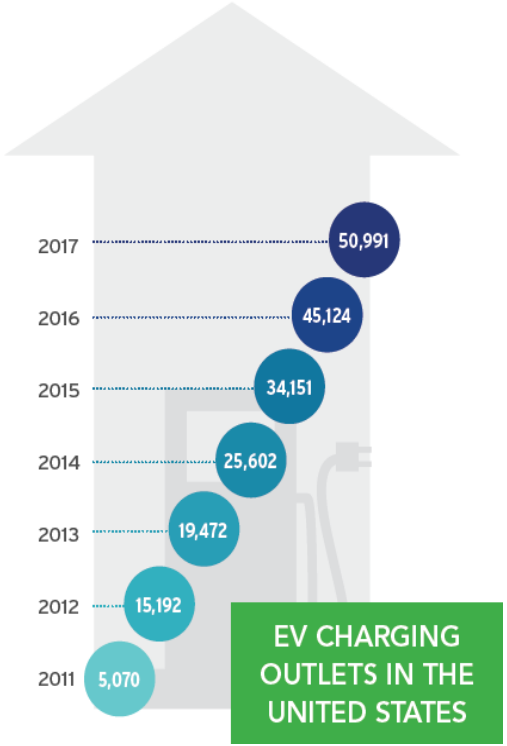
EV Penetration 2017Q2

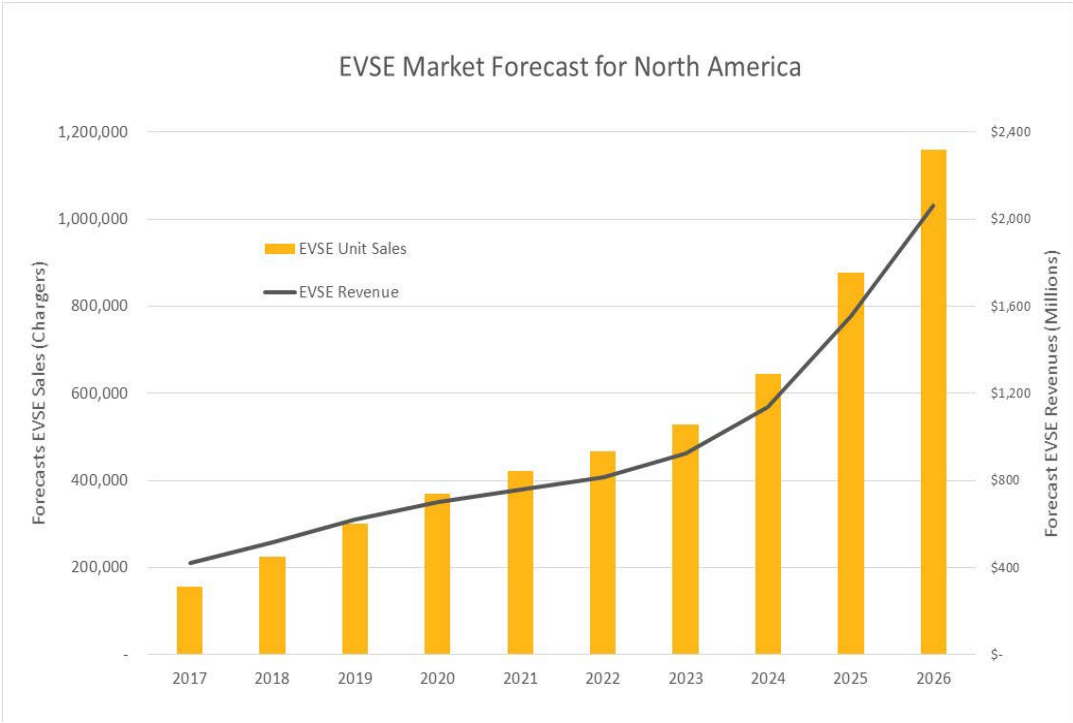


Source: Data from IHS Markit

© 2017 ChargePoint, Inc.

EV Charging Infrastructure Market



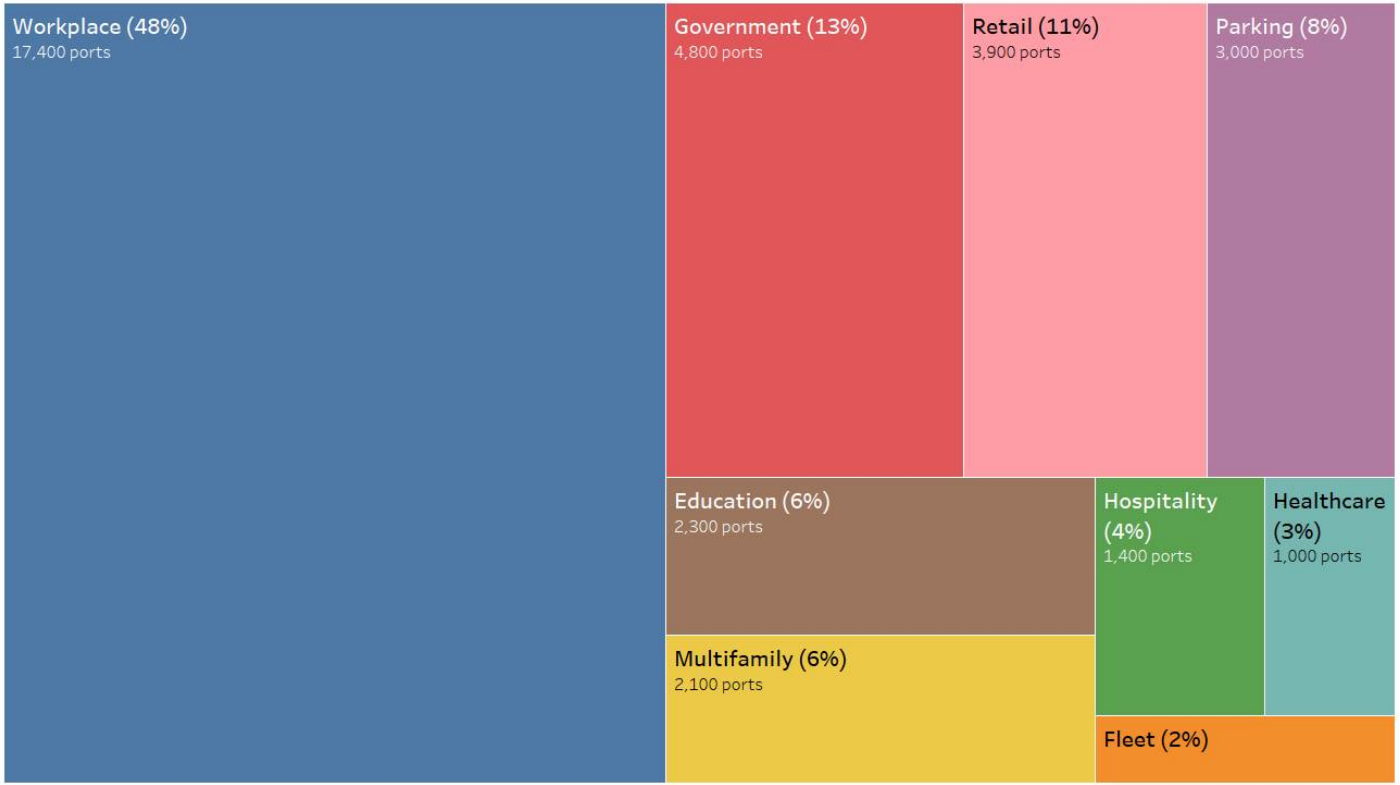


© 2017 ChargePoint, Inc.

Graph Source: The State of Charge 2017 Report, EVCA
Data Source: U.S. Department of Energy, Alternative Fuels

Data Source: Navigant

ChargePoint - Serving the Entire EV Ecosystem



© 2017 ChargePoint, Inc.

Case Study: Raytheon and Workplace Charging

Raytheon Requirements

- Maximize investment and let more drivers charge
- Keep stations neat, functional and safe
- Make it simple for employees to sign up and manage charging
- Get easy access to metrics on program outcomes

Results

- Doubled the number of stations and locations
- Attracted new employees and retained staff
- Simplified pricing and station management with smart tools
- Saved 117,145 kg of GHG emissions and 35,000 gallons of gasoline

“ A major attraction of the ChargePoint network was its nationwide reach, robust metrics collection process from the online dashboard and the fact that all firmware updates are automatically pushed out to all stations, nationwide.”

— Frank Marino, Senior Corporate Environment, Health, Safety and Sustainability Manager, Raytheon

© 2017 ChargePoint, Inc.

Connected EV Charging – Value for All

EV Drivers

- Availability
- Information
- Convenience
- Seamless payment
- Consistent user experience

Site Hosts

- Maximize utilization
- Customizable tools
- Simple operation
- Limited administration
- Continuous upgrades
- Ensure uptime

Utilities

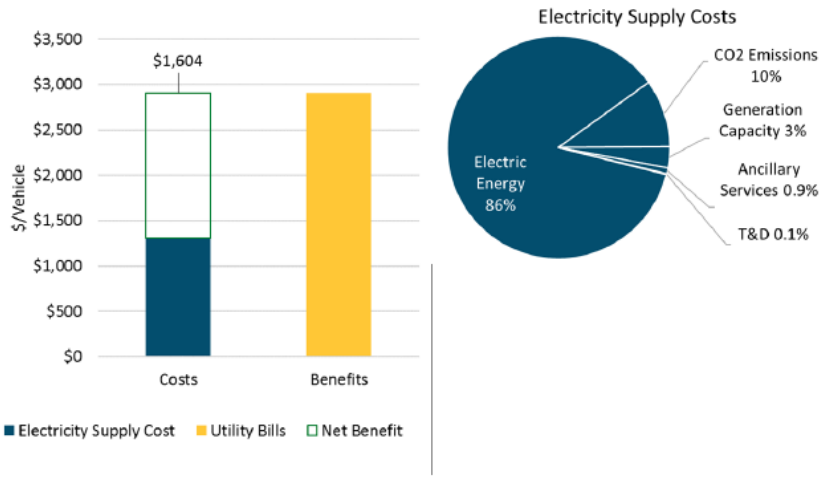
- Support EV adoption
- Visibility into load pockets
- Data for load forecasting
- Load Management
- Flexible “DER” lever
- Seamless integration

© 2017 ChargePoint, Inc.

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

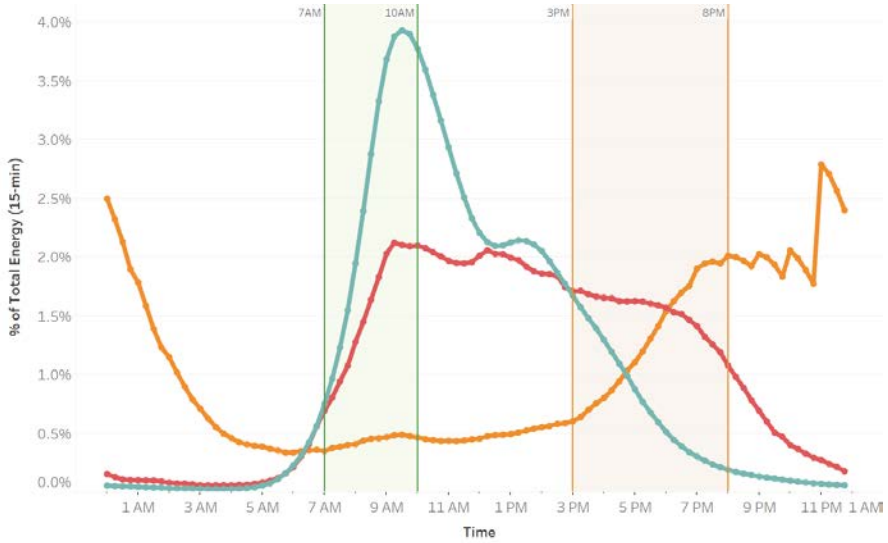


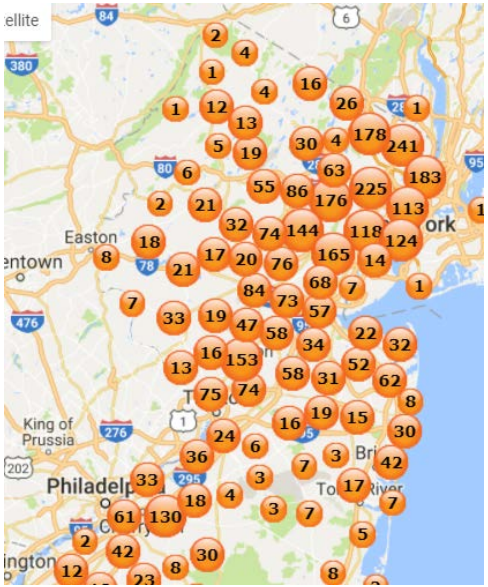
Source: E3 (2017). "Cost-Benefit Analysis of Plug-in Electric Vehicle Adoption in the AEP Ohio Service Territory"

© 2017 ChargePoint, Inc.

Core Role: Grid Planning & Customer Support

- Using data to better understand where load pockets are occurring and to improve load forecasting/distribution planning



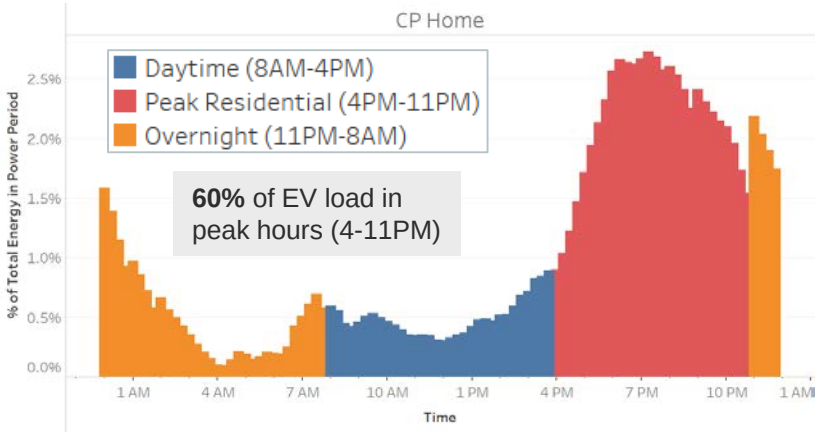


© 2017 ChargePoint, Inc.

Proactive: Demand Side Management and Education

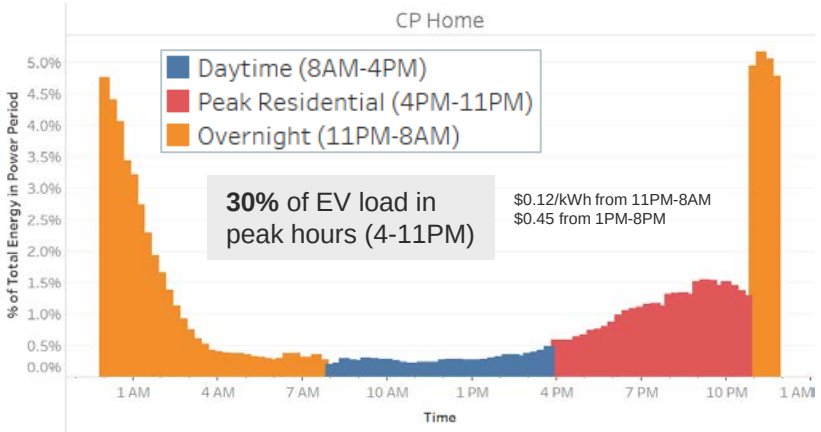
+ Utilizing EV TOU rates or DR capabilities in the home to encourage off peak charging
+ Evaluating commercial rates tailored to support DC fast charging applications

King County, WA



SCL and PSE customers charge when they get home. Peak charging at 6pm.

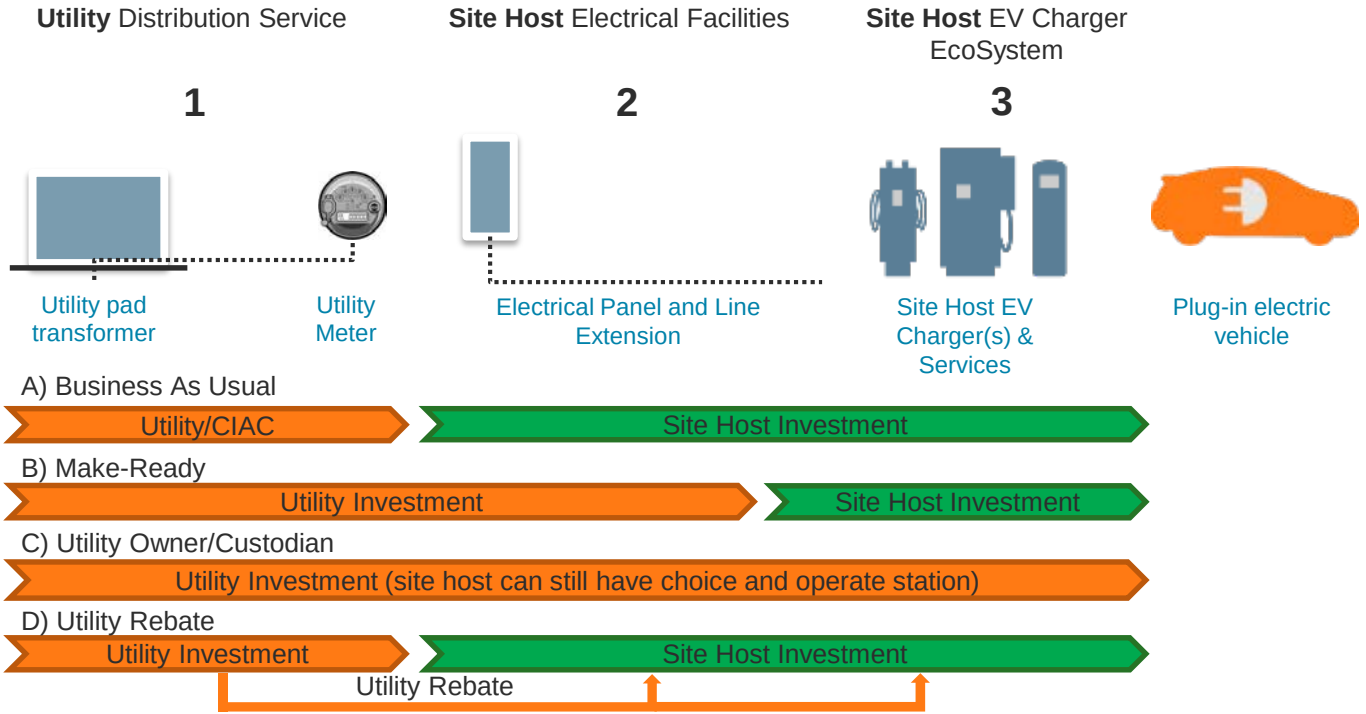
Santa Clara County, CA



PG&E EV TOU rates delay peak charging until 11pm.

© 2017 ChargePoint, Inc.

Assertive: Accelerate EV Adoption and/or Charging Infrastructure Deployment



© 2017 ChargePoint, Inc.

Data and Load Management Tools Exist in All Cases

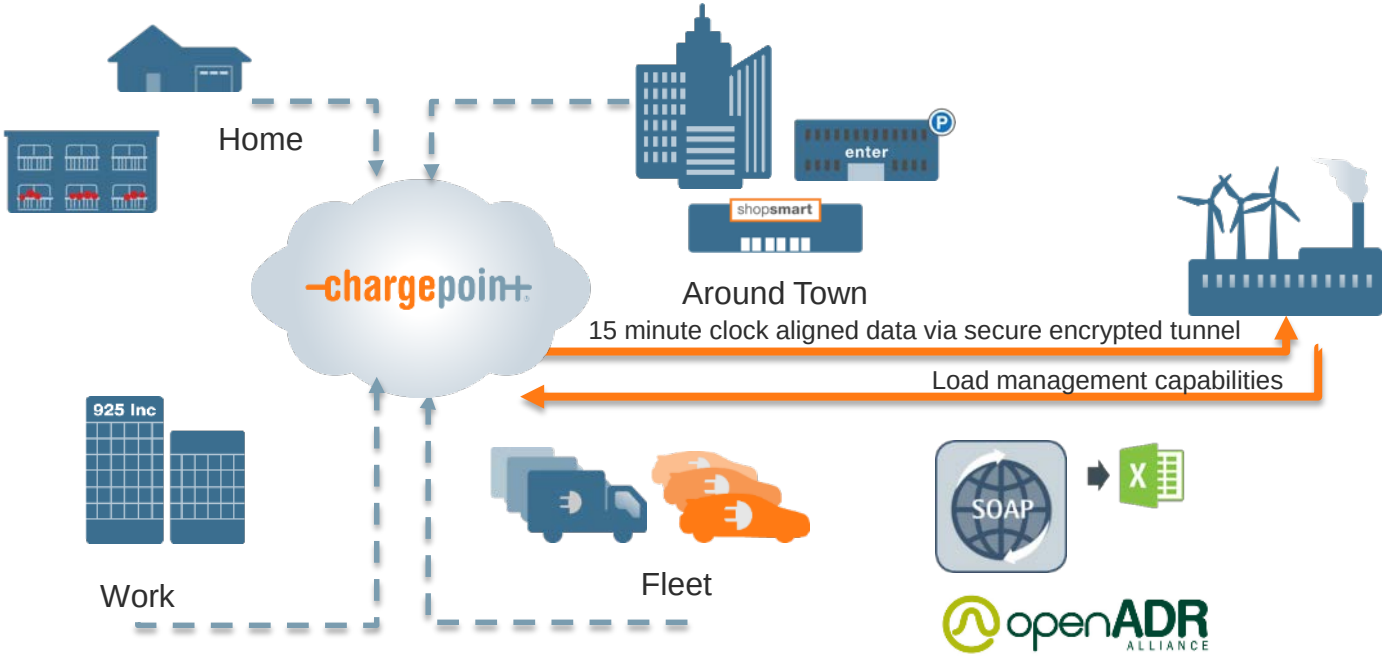
SMART CHARGING

Provides 360° view of charger utilization

Interval Level Data

Manage load via demand response or power sharing

Automate load management and data retrieval via standards based interfaces



© 2017 ChargePoint, Inc.

Utility Program Highlights

© 2017 ChargePoint, Inc.


chargepoint
THANK YOU!