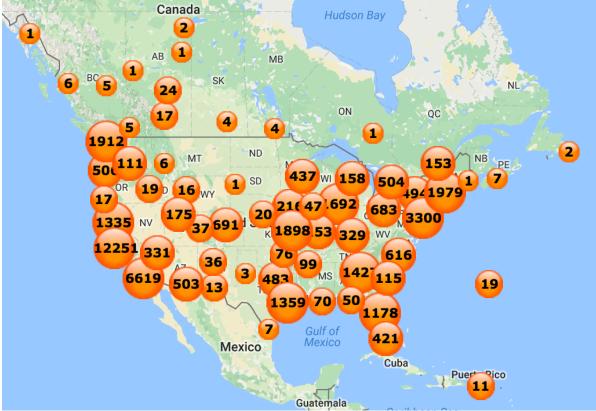
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A Sustainable Role for Regulated Utilities in the Competitive EV Charging Market Kevin George Miller – June 6, 2017

The ChargePoint Network



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Stations for Every Situation

Single Family Home Multi-Family, Fleet Commercial/Municipal, Mixed Use

On-Route, Commercial

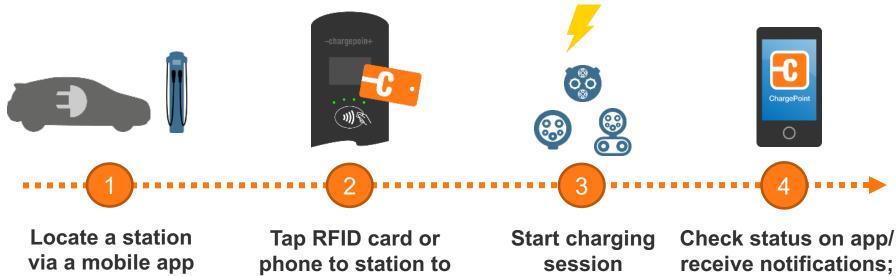






Ð **CPE100 CPE200 CPE250** Express Plus 24kW 50kW 62.5kW 400kW Fast DC Chargers Ultra-fast DC Chargers

A "Connected" Charging Session



link to account

True up drivers fee (if needed)

Connected EV Charging – Value for All

EV Drivers



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

Site Hosts (Commercial)



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

Utilities



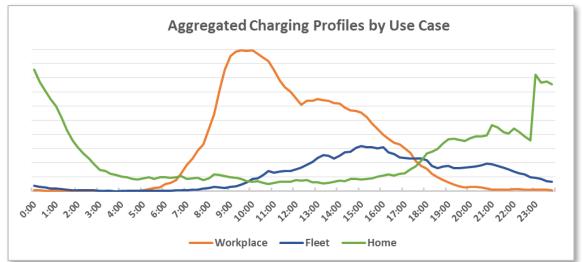
- Support EV adoption
- Visibility into load pockets
- Data for load forecasting
- Load Management
- Flexible "DER" lever
- Seamless integration

Electric Utilities & EVs



Why are utilities seeking to expand into EV

+ Opportunity to incentivize benefits for the utility, customers, and all ratepayers



- + Utilities are positioned to engage with EV charging in many positive ways
- + Investing ratepayer funds "beyond the meter" can impact the market; need to manage how.

Potential Impacts of Regulated Utility Investment

What are the central challenges that utility investment may solve?

- Lower barriers for EV charging station deployment
- Greater visibility into associated EV load growth
- Unlocking grid benefits associated with optimized EV charging
- + Rate design considerations
- Including considerations for grid constraints and capacity

What are important considerations associated with utility investment?

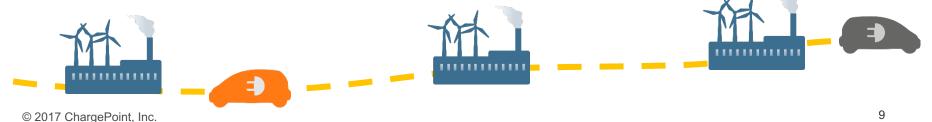
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- EV charging industry is a competitive and dynamic market space
- + EV charging technology is rapidly evolving with ongoing innovation
- Charging stations are consumer facing and transactional
- Site hosts must be invested and have input on station operations
- Driver experience extends to multiple use cases and beyond any one territory

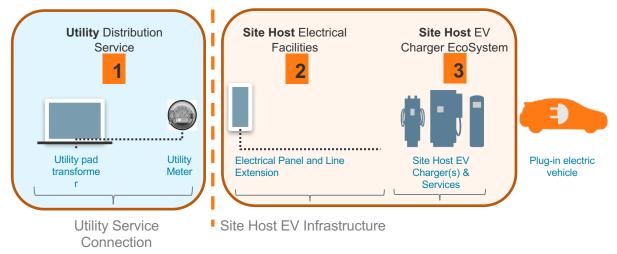


Principles for Utility Program Design

- Enable **customer choice** in charging equipment and services ÷
- Allow for **continuing innovation** by avoiding a single RFP or customized + utility requirements; provide for "rolling" vendor certification
- Leverage available private funding and make sure site hosts have "skin in + the game"
- Support flexibility for site host to control access and pricing for charging services on their property
- **Avoid island networks** or regulatory boundaries for EV drivers
- Encourage **smart charging** behaviors and enable grid benefits

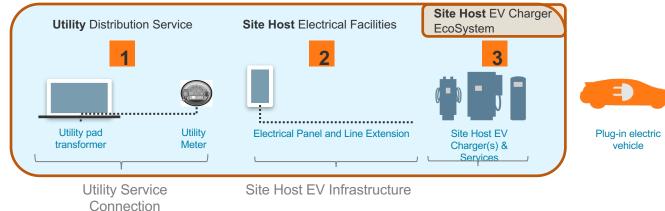


-chargepoin-Pros and Cons: Typical Site Host Investment



- + Does not lower barrier for EV charging deployment
- + Maintains site host choice and control of equipment
- + Supports **competitive** market for EV equipment

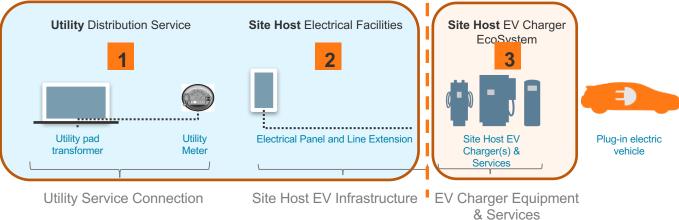
Pros and Cons: Utility Own & Operate



- + Does addresses barrier for EV charging deployment
- + May not maintain **site host choice and control** of equipment
- + May not support **competitive** market for EV equipment
- + Utility takes on unique **administrative burden** of EV charging
- + Ambiguous on pricing to drivers

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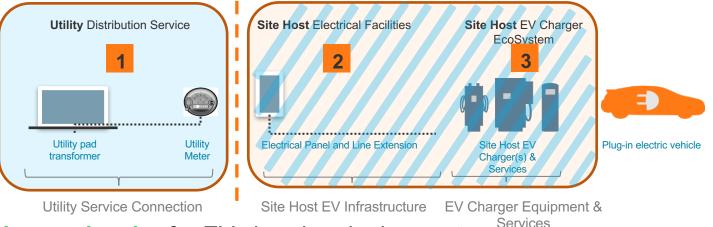
Pros and Cons: Make-Ready Model



- + Does lowers barrier for EV charging deployment
- + Maintains site host choice and control of equipment
- + Supports competitive market for EV equipment
- + Keeps site host skin in the game
- + May be slower than other models in deploying infrastructure

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Pros and Cons: Make-Ready Rebate Model

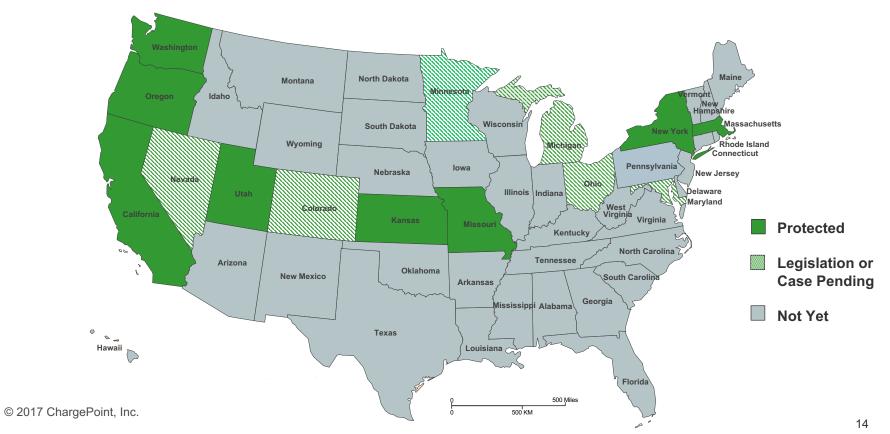


- + Does lowers barrier for EV charging deployment
- + Maintains site host choice and control of equipment
- + Supports competitive market for EV equipment
- + Keeps site host skin in the game
- + Represents **fastest deployment model** of EV charging

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States with Customer Choice and Competition -chargepoint. Protections Codified In Law





Support Innovation Through Pricing

- + Utilization can be optimized through flexible pricing
- + Pricing influences driver behavior in different ways
- + kWh pricing lets site hosts account for different EV capabilities



Exemptions on "Sale for Resale" Restrictions (kWh Pricing)

Allowed Matter Washington Pending TBD Maine North Dakota Montana Minnesota Oregon Idaho Haroushire Massachusetts Wisconsin South Dakota New York Rhode Island Wyoming Connecticut Pennsylvania Iowa Nebraska New Jersey Nevada Ohio Dolaware Illinois Indiana Utah Marylan **District of Columbia** West Colorado California Virginia Kansas Missouri Maryland Kentucky North Carolina 🥎 Tennessee Arizona Oklahoma ١. South Carolin Arkansas **New Mexico** Georgia Mississippi Alabama Texas ۰ Hawaii Louistana Florida 500 Miles 500 KM

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Thank You

For more information, please visit http://chargepoint.com