

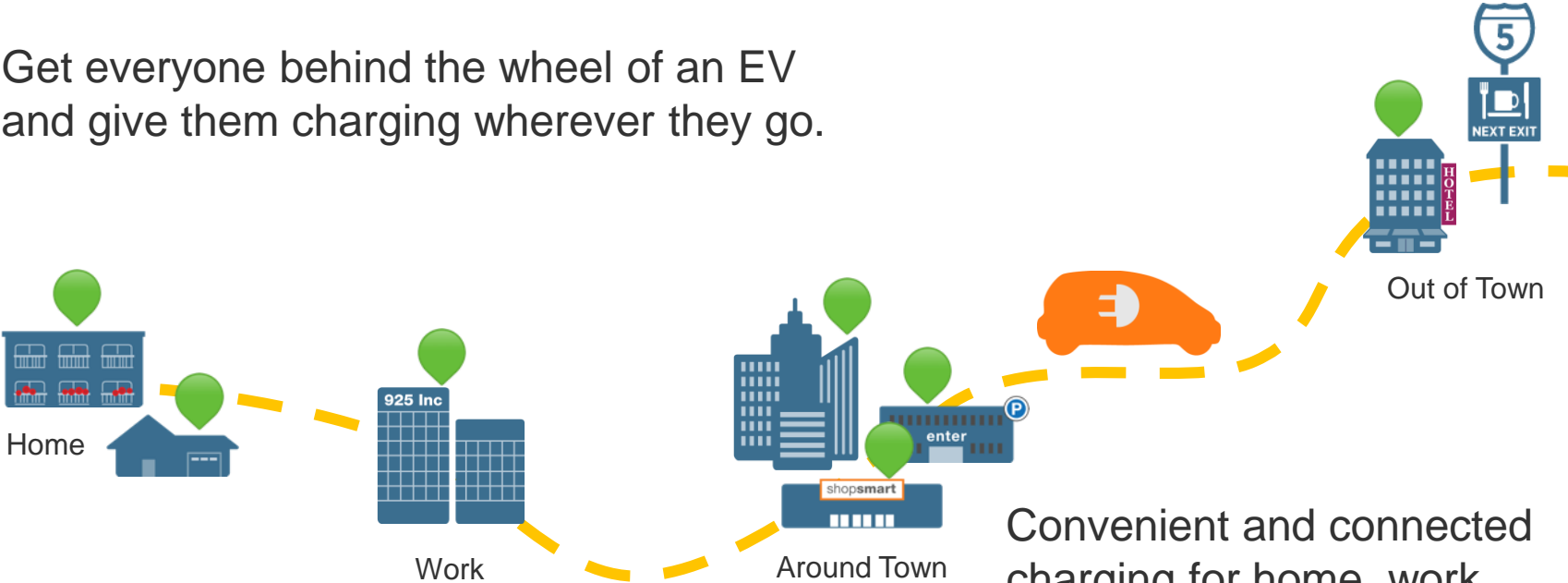


High Speed DC Network Considerations

Rich Quattrini

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.

The World's Largest and Most Open EV Charging Network



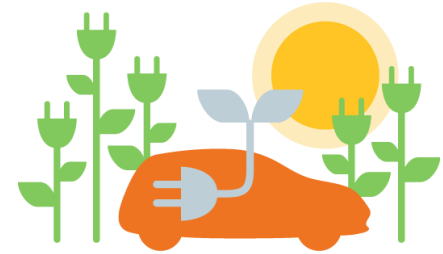
Largest Community of EV drivers

- + 70% of new EV drivers join every month
- + A driver plugs into our network every 4 seconds



Charging Everywhere

- + 29,000+ charging spots
- + 600+ ports added every month



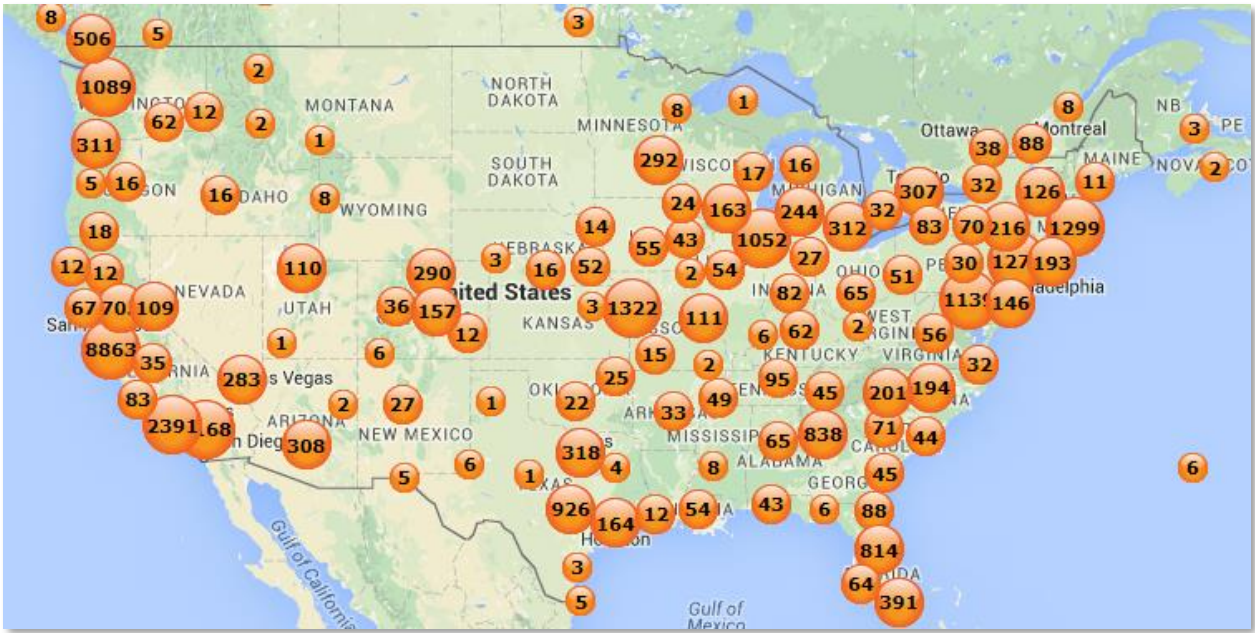
We're Established and Growing

- + \$165 million in funding
- + 70%+ share of commercial smart charging

Recognized as Industry Leader

According to Time, Bloomberg, CNBC, Navigant Research and many others

The ChargePoint Network



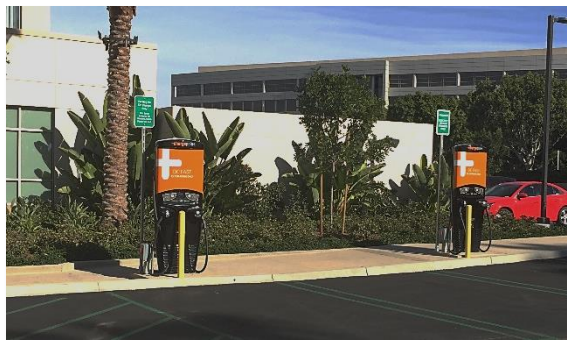
Over 29,000 L2 and DC ports

> 330 ChargePoint Networked DC Fast Chargers



Deliberate and “natural” corridors are emerging

Examples of DC Fast “Corridor” Locations



Who Pays to Build and Operate Fast Charging?

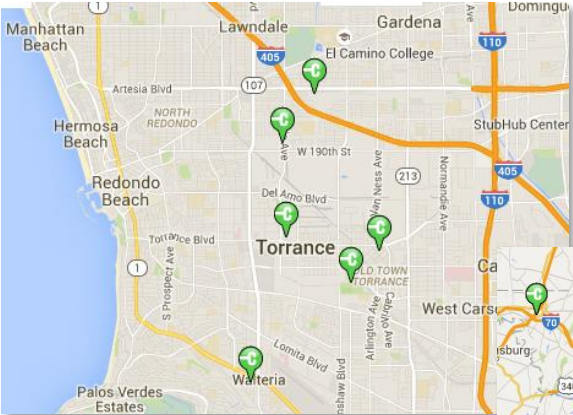
- + Difficult to build a business case for building corridor locations that are not subsidized
 - Even difficult in some areas if they are subsidized!
- + Outside funding is needed to seed business before utilization can support it
 - Government grants
 - Auto OEM funding
 - Business funded (i.e. workplace, retail, hospitality seeking amenity value)
 - Utility funded
 - Jointly owned asset companies

State and Local Funded Examples

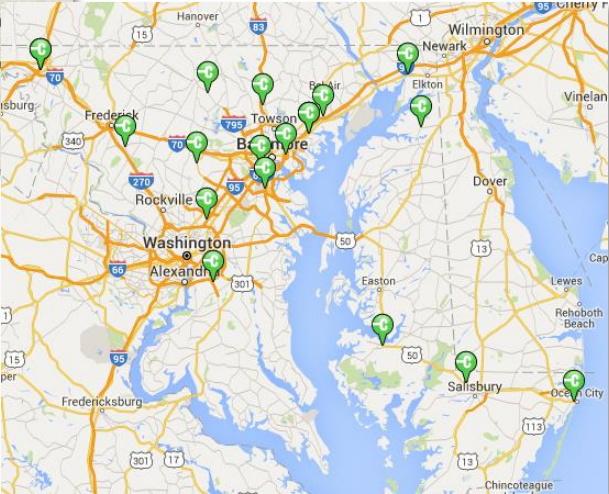
CEC Corridors (96 locations)



City of Torrance



State of Maryland



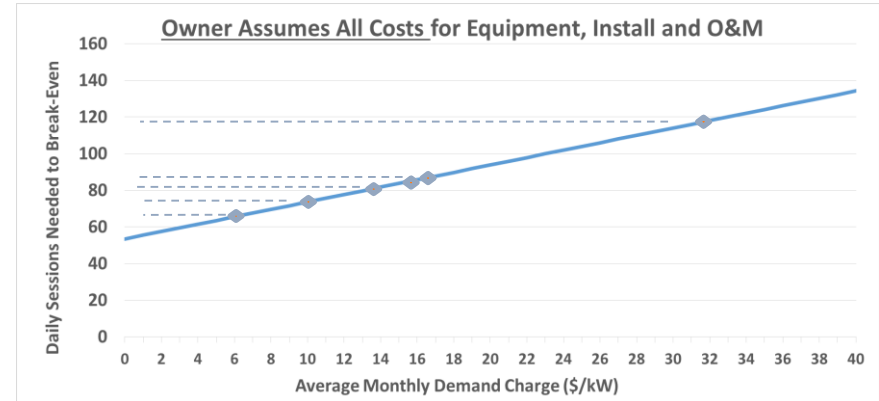
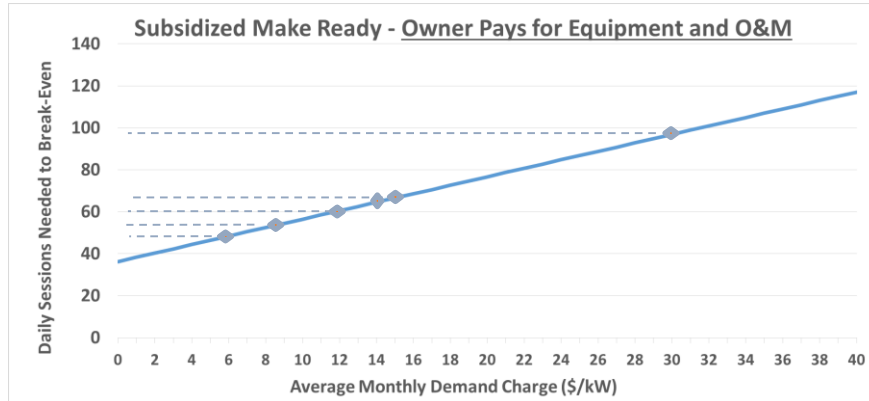
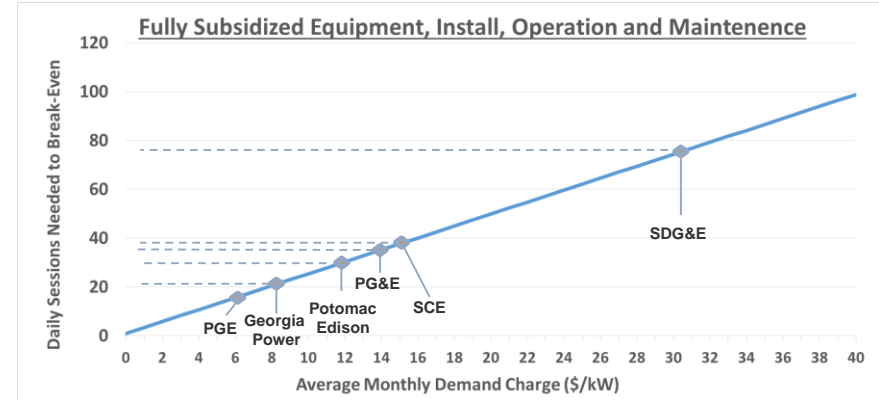
Business Models and Payback Considerations

+ Costs that need to be recovered:

- Equipment
- Site prep and installation
- Building permits
- Utility upgrades for power infrastructure
- Extended warranty (all parts and labor for life of assets)
- Coverage for non-warranty repairs (wear, breakage, accidental damage, vandalism)
- Preventative maintenance and general site up-keep
- Telephone and on-site technical support
- 24/7 driver support
- Network services
- Software and hardware updates to keep up with latest standards

Payback and Demand Charge Challenges

- + In areas with high demand charges, breakeven will be difficult in early stages - even with grants and subsidies
- + Install scope assumes **350kW** of charging infrastructure at each location – modest buildout given future needs
- + Peak demand hits max power at least once per month
- + Driver pricing set at gas parity for breakeven analysis
- + Equipment and install costs amortized over 5 years



Considerations and Takeaways

- + ROI to build and operate corridors will be difficult before wide scale adoption
- + Drivers will not want to pay a premium to support payback
- + Utility demand charges have significant impact on P&L
- + Thresholds to hit higher demand charge rates vary by utility
 - Common thresholds are 75kW, 100kW, 200kW, 500kW and 1,000kW
 - Demand charges can be minimized if there are only one or two 50kW chargers
 - But, lack of redundancy and available chargers will lead to a bad driver experience
 - Future corridor charging will happen at much higher power levels = higher chargers
- + External funding and demand charge relief needed to make this all work

Thank You

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