

A large, abstract graphic element consisting of two wavy lines. The top line is a thick, solid blue line that curves from the left side of the frame towards the right. Below it is a thinner, white line that follows a similar path, creating a sense of depth and motion.

Capital Region Policymakers Dinner Forum

Brendan Jones
September 14, 2017

The Opportunity for ZEV Investment and a Green City Initiative

Outline

- Our Transformative Opportunity
- The Impact of ZEV Investment and Infrastructure
- Introduction to Electrify America
- Our California Investment Plan
- A Green City Initiative
- Final Thoughts

Our First “Green City” in Sacramento



Our transformational opportunity: the largest single investment ever made in infrastructure to drive EV adoption, which benefits all stakeholders and drivers



Societal

- Reduced emissions, climate change
- Reduced oil dependence
- Increased energy sustainability
- Economic development
- Valuable new jobs

Drivers

- Quick & quiet performance
- Reduced operating costs
- Home recharging
- Zero tailpipe emissions



Utilities

- Source for load growth
- Storage, on site generation
- Renewables balancing

What is a Green City?

Electrify America Green City Goals and Impacts



Green Cities

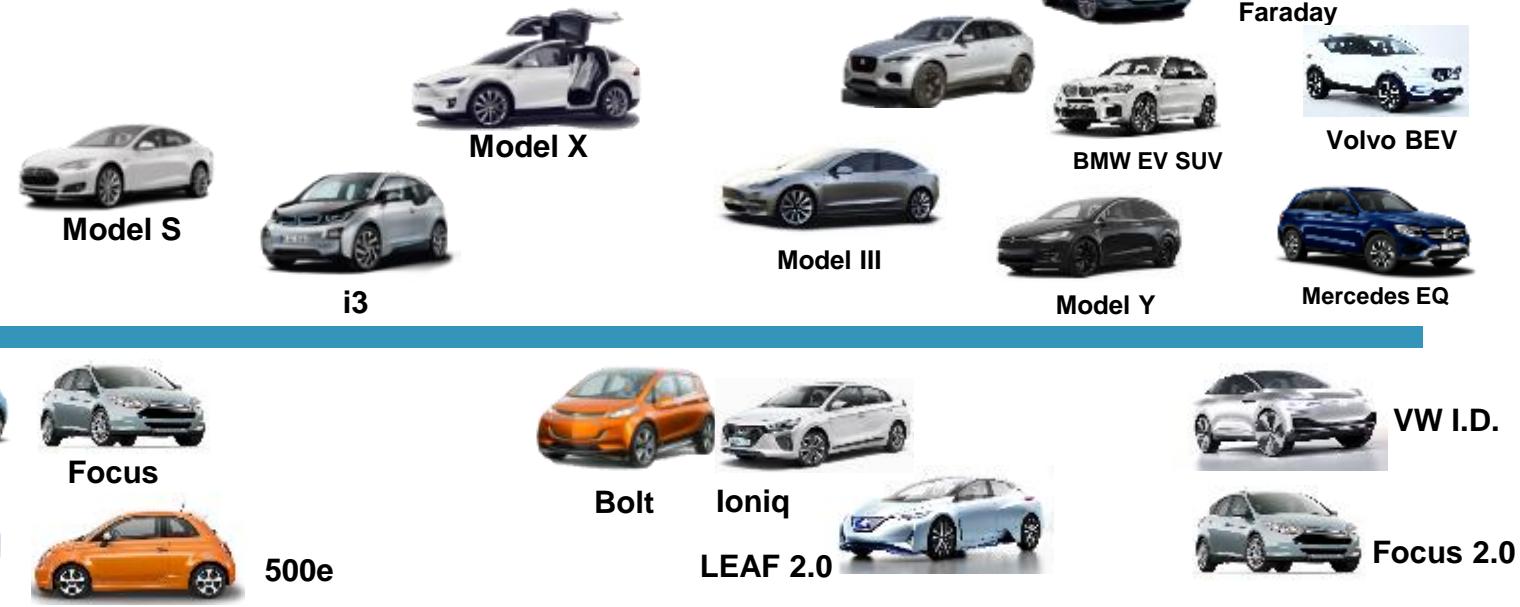
- Positively impact ZEV awareness and the community
- Provide ZEV access to underserved communities
- Increase use of ZEV technology
 - Initiatives will have high ZEV VMT with substantial impact on GHG emissions
- Test economic viability of ZEV access initiatives
 - Spread economically proven programs to other metropolitan areas over time

The EV marketplace is poised for takeoff and will quickly develop through 2020+ across all price points – with most entries offering 200 mile+ range

- Navigant predicts 2.8% EV market share by 2020, or 500K+ units sold (682K Aug 2017 YTD since 2011)
- Approx. 65 models will be available, vs. 32 today
- Top six EVs today = 62% of sales



Premium>>



<2012

2013

2014

2015

2016

2017

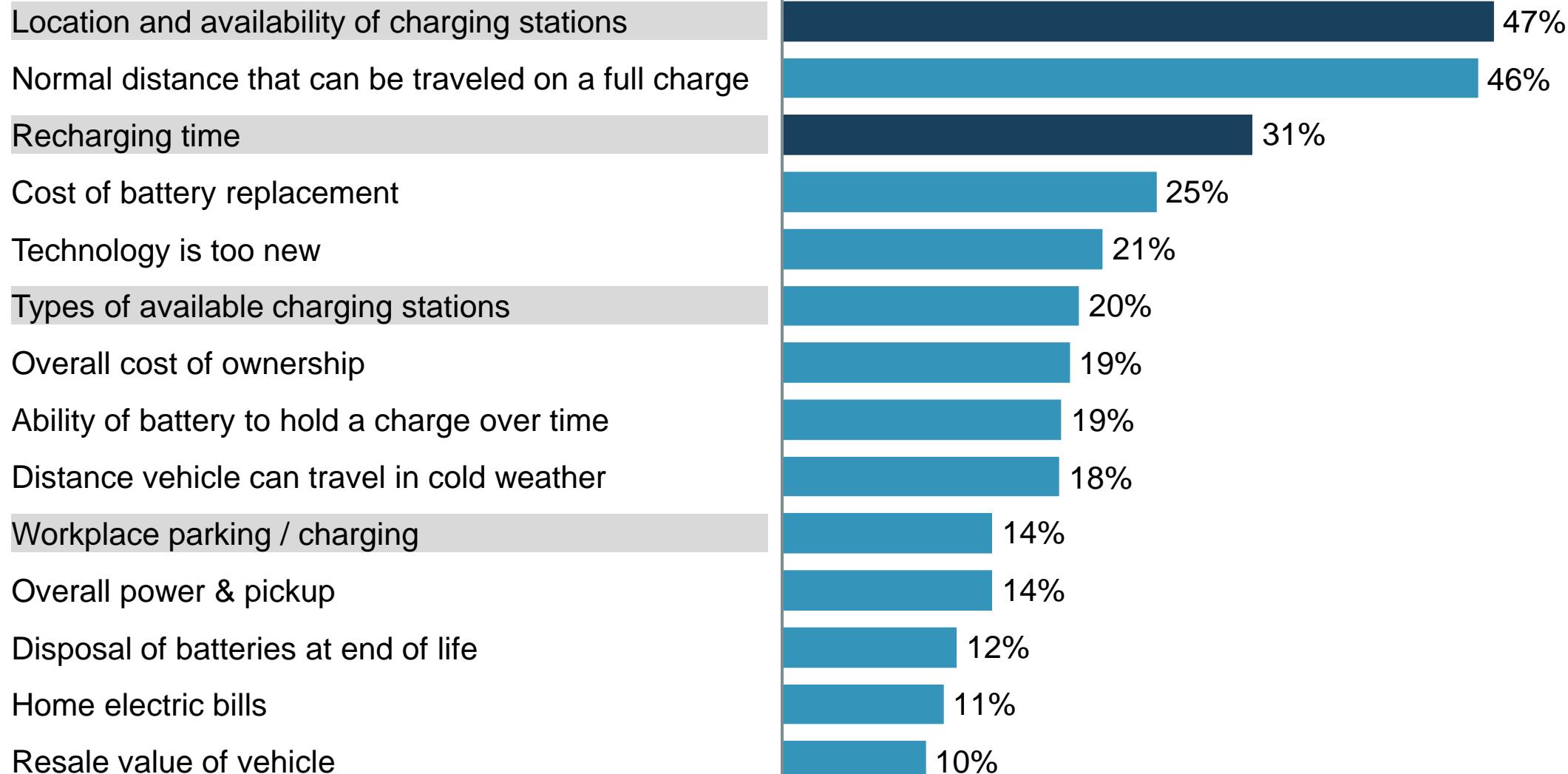
2018

2019

2020

Charging infrastructure availability and charging speed are top reasons consumers currently avoid EVs

EV Purchase Avoidance Reasons



Key features of the ZEV Investment Commitment (Appendix C)



- **\$2B+ investment over four 30-month cycles (\$500M per cycle)**
 - \$800M in California (CARB)¹
 - \$1.2B across rest of US (EPA)



- **Investments will be focused on three categories:**
 - Charging **infrastructure** accessible to all ZEV types
 - Public **outreach** to promote ZEV education
 - Programs designed to drive ZEV **access**



- **Costs are creditable to the \$2B+ investment if they are related to:**
 - Charging infrastructure capital and operating costs excluding electricity costs
 - Green City operations
 - Brand neutral public education

Goal
Accelerate ZEV adoption in the US

¹ \$800M in California from Appendix C as part of 2.0L Settlement; additional \$25M committed to California as part of 3.0L Settlement to support the use of zero emissions vehicles
² Electricity demand charges will be creditable during the first two 30-month cycles

C Electrify America has assembled a diverse team of industry leaders with a rich set of backgrounds, including:

Automotive



Real Estate / Construction



Technology



Charging



Government



Other



54 of 74 target personnel have been hired into the Electrify America organization.
At least seven employees in California.

Electrify America will establish a charging network that is comprehensive, technologically advanced and customer-friendly -- to drive EV adoption by reducing charging anxiety

First Cycle Goals



Robust highway network
(continuous miles served and number of charging sites)



Top metros selected for clear impact focus on priority use cases (workplace, retail, home, etc.)



High power up to 350kw network compatible with all technology needs (but includes 50 kW, L2 PHEVs)



Interoperability and signage for easier access and compatibility with all possible networks

Potential Goals for the later 30-month cycles



Add new routes to expand the breadth of the highway network



Reduce spacing between sites to enhance the flexibility of the network



Increase site charger density to align with rising EV penetration during the next 30-month cycle



Increase number of metro areas supported. Backfill as needed



Increase number of use cases supported (destination, airports, etc.)

Will consider **battery storage** and **solar** where beneficial

Electrify America will invest \$2B to accelerate ZEV adoption over the next 10 years, with \$500M being invested in the first cycle

California
National (excl. CA)



Awareness

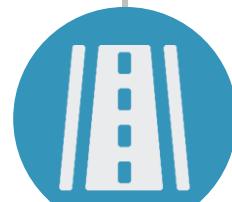
\$20M
\$25M

Infrastructure

\$120M
\$230M

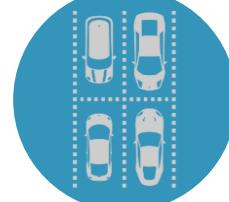
Green Cities

\$44M



Highway Fast Charging

\$75M
\$190M
50+ Sites
240+ Sites²



Metro Charging¹

\$45M
\$40M
350+ Sites
300+ Sites



¹ Includes all community charging sites such as community depot, commercial retail, garage, MUD and workplace sites

² 2. Operational or under development by end of cycle 1

Electrify America anticipates and will strive to ensure that 35 percent of our business-driven investments will be in disadvantaged and low-income communities*

Investment type	Impact on disadvantaged (DAC) and low-income communities (LIC)	Overview of Cycle 1 California Plan															
Highway Charging	<ul style="list-style-type: none">▪ Anticipate that >50% of highway stations will be in DAC/LIC																
Metro / Community Charging	<ul style="list-style-type: none">▪ ~35% of target census tracts in the California Metros are DAC/LIC																
Green City	<ul style="list-style-type: none">▪ City of Sacramento is 59% DAC/LIC▪ Green City programs will provide ZEV access to underserved	<table><caption>Overview of Cycle 1 California Plan</caption><thead><tr><th>Category</th><th>Approximate Number of Stations</th><th>Approximate Investment (\$M)</th></tr></thead><tbody><tr><td>350+ Community charging stations (L2, 50-150kW)</td><td>350+</td><td>~\$45M</td></tr><tr><td>50+ Highway fast charging stations (150-350kW)</td><td>50+</td><td>~\$75M</td></tr><tr><td>ZEV access initiatives "Green City"</td><td></td><td>~\$44M</td></tr><tr><td>Public educ. & awareness</td><td></td><td>~\$20M</td></tr></tbody></table>	Category	Approximate Number of Stations	Approximate Investment (\$M)	350+ Community charging stations (L2, 50-150kW)	350+	~\$45M	50+ Highway fast charging stations (150-350kW)	50+	~\$75M	ZEV access initiatives "Green City"		~\$44M	Public educ. & awareness		~\$20M
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“Sacramento selected itself” – it is the ideal Green City partner

ZEV Leadership

Our Community Carshare, ZEV carshare pilot

Coordinated ZEV support across key stakeholders:

- City and County of Sacramento
- Sacramento AQMD
- Clean Cities Coalition
- SMUD and many more

Diverse Community

59 Percent Disadvantaged and Low-income communities

- Sacramento is “one of the most racially, ethnically, and culturally diverse cities in the nation” and has “a disproportionate share of residents who live in disadvantaged communities.”
-Mayor Darrell Steinberg

Mobility Patterns

Mobility fit

- Mobility demands
- Commute flow patterns
- Competitive situation

Potential for impact

- Societal impact
- Implementation feasibility
- Awareness impact

Our Community Carshare in Sacramento



“Green City Initiative” Programs in Sacramento

Plan

- Start with Car Sharing
 - ✓ Build on Sacramento Our Community Carshare Pilot
 - ✓ RFP process ongoing
- Build supporting charging infrastructure

Potential Additional Initiatives

- Electrify America may add Green City Initiative Programs in consultation with Sacramento:
- Options under review:
 - **Ride-hailing** (aka e-taxi): Enabling taxi or Transportation Network Company (TNC) drivers or companies to adopt and deploy ZEV technology
 - **Delivery**: Use ZEVs for delivery of goods, meals, or packages in Sacramento –via operating a delivery service or partnering with existing firms.
 - **Other**: Programs that meet Green City Initiative Goals are also being considered.



Cooperation Opportunities – Pilots, Permits and Partnerships

Piloting

- Sacramento Our Community Carshare Pilot gives us something to build on and learn from.
 - ✓ Pilots like this build a ZEV use culture
- New Initiatives will need your support

Permits

- Parking Permits
- Charging Station Permits
- Taxi Permits (?)

Partnerships

- Feedback – What ZEV initiatives will succeed?
- Incentives – they help the public gain access to ZEV programs like car share and ride hail.
- Utilization -- Government can promote use of ZEV technology through education or direct use.



Thank you

Questions?

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