



ELECTRIFY AMERICA

First Quarter 2018 Report to the
California Air Resources Board

MAY 10, 2018



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1. INTRODUCTION

Electrify America, LLC was created by the Volkswagen Group of America to invest \$2 billion in financially sustainable business opportunities that advance the use of Zero Emission Vehicle (ZEV) technology, \$800 million of which must be spent in California (see Figure 1). From its inception early in 2017, Electrify America has moved rapidly to implement the \$2 billion ZEV Investment Commitment.

As detailed below, the first quarter of 2018 (Q1 2018) was focused on securing real estate and preparing for construction of Electrify America's electric vehicle charging stations. The marketing team focused on finalizing brand-neutral education and awareness strategies, while the Green City Initiative took steps towards program launch. Finally, Electrify America launched its National Outreach effort as part of its Cycle 2 Planning process.

Electrify America publishes this Quarterly Report to share the progress and impact of its Cycle 1 investments in California.

Figure 1: Company Overview

Our Mission

Electrify America will be a catalyst for promoting ZEV adoption by offering transformative, customer-centric infrastructure and energy management solutions.

Our Company

Electrify America is a subsidiary of Volkswagen Group of America created to implement the \$2 billion ZEV Investment Commitment. We have recruited talent from across diverse industries.

Our Approach

Electrify America is a data-driven company committed to increasing the use of ZEV technology.

2. A NETWORK OF ELECTRIC VEHICLE CHARGING STATIONS

2.1 Introduction

As laid out in the Cycle 1 California ZEV Investment Plan, Electrify America intends to develop a network of electric vehicle charging stations along highly traveled highways and in six carefully-selected metropolitan areas during Cycle 1 (see Figure 2). The planned network in California will consist of more than 600 DC fast charging dispensers at approximately 160 charging station sites. In addition, Electrify America will build approximately 1,500 charging stations at workplaces and multiunit dwellings in its six target markets. The network will deploy cutting-edge technology to deliver customer-centric charging to consumers safely and conveniently, and it will connect California to the Electrify America national network in 39 states.

To launch the network expeditiously, Electrify America initiated two distinct infrastructure strategies in California.

First, the company utilized a robust procurement and real estate acquisition process to launch its statewide ultra-fast DC charging network.

Second, it hired highly qualified and experienced “turnkey” vendors to deploy and maintain charging stations at workplaces and multiunit dwellings.

These strategies allowed Electrify America to move forward quickly in partnership with existing industry leaders. Electrify America anticipates that 35% of its business-driven investments within California will be in disadvantaged or low-income communities.¹



2.2 Electrify America’s DC Fast Charging Network

Electrify America’s internal goal is to build or initiate construction of DC fast charging stations at 160 distinct sites along high-traffic highways and in six targeted metro areas in California, based on the budgets established in the Cycle 1 California ZEV Investment Plan. This is an ambitious target, based on aggressive

¹ Electrify America uses definitions for low-income and disadvantaged communities established by the State of California, which are published and mapped by CARB on its “Disadvantaged and Low-income Communities Investments” webpage: <https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm>

cost estimates, and it is subject to likely revisions as final station costs are realized. Target locations (known as “target zones”) for each station were identified using Electrify America’s proprietary station siting methodology, which projected locations where DC fast charging stations will be most in need by 2020.

2.2.1. Acquiring Station Sites in Station Target Zones

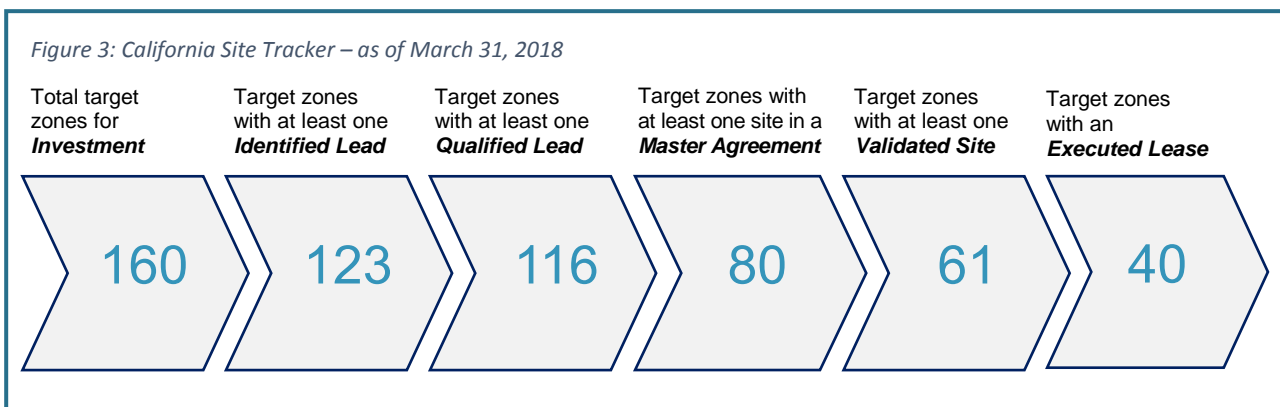
Before Electrify America can build a DC fast charging station in any of its carefully selected target zones, it must acquire access to a site to host the station. Therefore, real estate acquisition is a critical component of building a network of DC fast charging stations across California.

Using dedicated internal staff and experienced external real estate firms, Electrify America took steps to secure licenses and leases from site hosts for the 10-year period of the ZEV Investment Commitment in each of its target zones during Q1 of 2018. In each target zone, Electrify America considers multiple real estate leads, based on their unique attributes, such as availability of three-phase power, site lighting, and access to customer amenities. To expedite real estate acquisition, Electrify America has entered into master agreements with 12 large-scale real estate owners,² which provide leads in 97% of target zones. (In 2017, Electrify America considered an average of seven real estate leads for each target zone.)

Within each target zone, specific sites are identified for further desktop analysis and then onsite assessments. Electrify America then validates the installation specifics with the local utility and property owner through a site walk and discussion. Throughout the site acquisition process, Electrify America works closely with 14 electric utilities to determine efficient locations from a grid perspective with the lowest service connection costs for Electrify America.

The final step in the real estate process is to sign an individual lease with the property owner. Although many viable options may exist, ultimately, only one site will be leased or licensed within each target zone. In Q1 of 2018, leases were signed in 37 target zones, bringing the total number of target zones with signed leases to 40.

First quarter progress in real estate acquisition can be seen in Figure 3.



² Announced real estate partners include Walmart, Target Corporation, Brixmor Property Group, Kimco Realty Corporation, Sheetz, Inc., Casey’s General Stores, Inc., DDR Corporation, and Global Partners LP’s Alltown.

Electrify America strives to ensure that 35% of its business driven investments are in low-income or disadvantaged California communities. In keeping with these efforts, Electrify America strove to ensure that 35% of potential California sites in all stages of the site acquisition funnel – site identification, qualification, lease execution, and validation – were located in low-income or disadvantaged communities. In Q1 2018, Electrify America was able to exceed 35% in each of the steps defined in Figure 3.

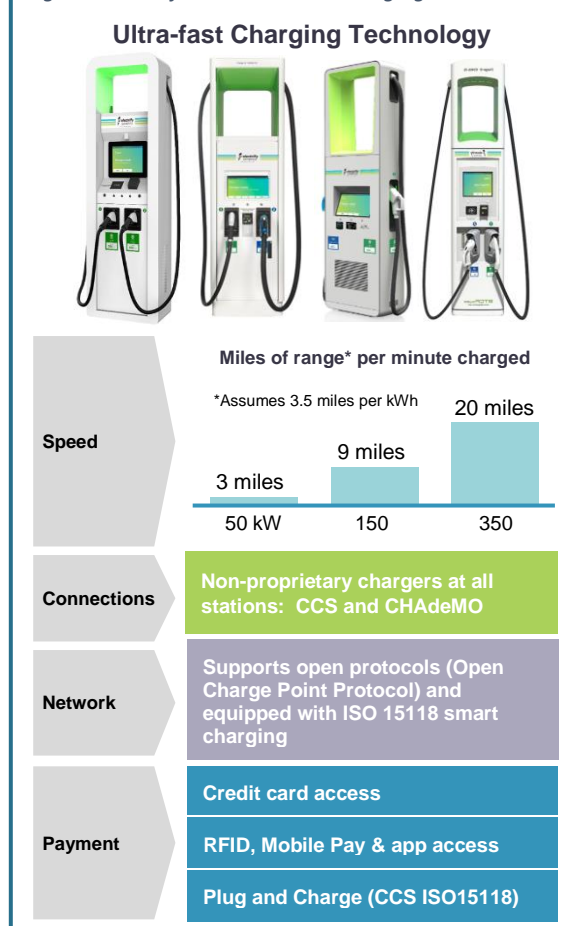
2.2.2. Ultra-fast Electric Vehicle Charger Technology

Electrify America’s customer-centric stations will use the most advanced technology ever deployed for convenient, fast charging (see Figure 4).

Highway stations will be equipped with chargers capable of delivering maximum power levels from 150 kW to 350 kW, which are capable of stepping down to lower power levels for vehicles equipped for lower powered DC fast charging. At maximum continuous power, 350 kW chargers will be able to deliver approximately 20 miles of range per minute to a vehicle, vastly improving the customer experience.³ To deliver this level of power safely and with customer convenience in mind, Electrify America stations will be equipped with state-of-the-art liquid-cooled cable technology.⁴

Electrify America DC fast charging sites will support both the CCS Combo and CHAdeMO connectors. To maximize the ability of customers to use chargers regardless of which charging network they have joined, Electrify America plans to offer credit card payment at

Figure 4: Transformational Fast Charging



³ Idaho National Lab, DOE, and DOT refer to power levels of 350 kW because the limit of the standard is currently 350 amps multiplied by 1000 volts, or 350kW. Comments from OEMs and experts during the Outreach Plan process have led Electrify America to believe that the next generation of vehicles will be designed to go up to 920V. As such, the actual range delivered per minute will depend on the vehicle, as vehicles govern the power level accepted. This estimate assumes the vehicle being charged can travel approximately 3.5 miles per kWh.

⁴ Neither liquid-cooled cables nor 350 kW charging has ever been deployed commercially in the United States. As a result, Electrify America leased a small space for equipment quality control and validation in 2017.

all DC fast charging stations, creating an easy customer experience that is the primary goal of most interoperability efforts. Electrify America will equip all DC fast charging with ISO 15118, which enables smart charging functionality in 2018 and beyond. Finally, all DC fast charging stations will be networked.

2.2.2.1. Chargers Ordered and Delivered

Following an RFP process, Electrify America selected four companies – ABB, BTC Power, Efacec, and Signet – as suppliers of its ultra-fast DC fast chargers during Cycle 1.⁵ Electrify America has ordered all of the more than 600 chargers needed in California for Cycle 1, and these chargers are scheduled to be delivered straight to California station construction sites in 2018. Although chargers were delivered to ultra-fast station construction sites in many other parts of the country, no ultra-fast DC chargers were delivered to California construction sites in Q1 2018.

2.2.3. Constructing a Network of DC Fast Charging Stations

After an extremely thorough and competitive process, Electrify America awarded a contract to Black & Veatch for all DC fast charging station design and installation work in California. This engineering and construction firm, which maintains a regional office in California for all California sites and provides good paying jobs to thousands of California employees, contractors and subcontractors, has managed the installation of more DC fast chargers than any other engineering and construction company in the United States. In addition, the firm has an exemplary safety record, and has an established track record of building complex projects on time and on budget. The selection of one of the most experienced and qualified construction firms in the United States ensures that the qualifications, training, or reliability of the construction workers who will be installing Electrify America charging stations in California are second to none.

In Q1 2018, Electrify America and Black & Veatch made progress designing DC fast charging stations in California, and permitting is anticipated to begin in Q2 2018.

2.3 Level 2 Workplace and Multiunit Dwelling Charging Stations

Electrify America targeted six metropolitan areas for community charging station investments in Cycle 1. In these six communities, Electrify America and its “turnkey” vendors (EV Connect, Greenlots, and SemaConnect) plan to install approximately 1,500 Level 2 (L2) chargers, with approximately 75% of the new L2 charging stations at workplaces and the remainder at multiunit dwellings (e.g., apartment buildings, condominiums and row houses).⁶

⁵ Electrify America Press Release. “Designing and Deploying more than 2,000 Ultra-Fast Electric Vehicle Chargers across the U.S., Electrify America Selects ABB, BTC Power, Efacec and Signet as Charging Equipment Suppliers” April 17, 2018. <https://www.electrifyamerica.com/downloads/get/744520>

⁶ Electrify America Press Release. “Electrify America Announces Plans to Install 2,800 Charging Stations at Workplaces and Multi-Unit Dwellings Across the U.S.” December 18, 2017. <https://www.electrifyamerica.com/downloads/get/607683>

2.3.1. Progress Deploying Workplace and Multiunit Dwelling Charging Stations

Electrify America oversees the process by which its three vendors secure station sites and deploy L2 charging stations. Electrify America assigns each vendor specific census tracts (i.e., “L2 target zones”) in which to install stations based on a data-driven, geospatial analysis of the locations most likely to have stations with high utilization rates. Vendors use their own proprietary site leads analysis, supplemented by leads suggested by Electrify America, to identify and submit sites for preliminary review by Electrify America. Once sites have been reviewed and approved, vendors negotiate site host agreements with potential site hosts (e.g., property developers, office space facility managers, and other real estate site hosts). After acquiring a site, the vendor will pursue the necessary permits and install, operate, and maintain charging stations, providing a unique benefit to workplace and residential property owners.

At the end of Q1 2018, Electrify America’s vendors had identified 624 leads in L2 target zones, and had qualified 347 leads as meeting key station site criteria. They will begin acquiring station sites in Q2. Chargers installed under this program will be networked and interoperable with the Electrify America charging network.

Each of the vendors is contractually obligated to install 35% of their overall station quota in low-income or disadvantaged communities, and Electrify America must approve every station location to ensure this contractual term is being met. At the end of Q1 2018, more than 35% of qualified leads were in a disadvantaged or low-income community.

2.3.2. Charger Technology

Electrify America-funded L2 charging stations will have a minimum power level of 6.6 kW (see Figure 5). The chargers will provide 20 to 25 miles of driving range per hour of charging using the non-proprietary SAE J1772 connector, which can be used with all electric vehicles in the United States.

Electrify America’s L2 vendors own, operate, and maintain their own electronic data network in support of L2 chargers installed and operated on behalf of Electrify America, as well as those installed independently of the program’s efforts. These vendors’ networks will be able to connect and interoperate with Electrify America’s network.

Figure 5: Level 2 Infrastructure

Level 2 Equipment



Connector type	J1772
Maximum Power (kW)	6.6-9.6
Estimated charge rate	20-25 mi/hr.
Use case	Workplace/ MUD

3. GREEN CITY INITIATIVE

3.1 Introduction

The goals of Electrify America's Green City Initiative (see Figure 6) are to increase ZEV awareness, provide ZEV access to underserved, low-income and disadvantaged communities, increase use of ZEV technology to maximize ZEV miles traveled while reducing greenhouse gas emissions, and test the economic viability of ZEV access initiatives.

In Q1 2018, the Green City Initiative pursued four investment areas: (1) ZEV car share and ride-hail services; (2) fleet services including ride-hail/delivery and ZEV shuttle/bus; (3) charging infrastructure; and (4) powering investments with renewable energy.

Figure 6: Green City Initiative Goals

Electrify America Green City Goals and Impacts



Green Cities

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

3.2 Car Sharing

In Q1 2018, Electrify America continued to negotiate agreements with two vendors to provide car share services in Sacramento. The combined programs, which are set to launch in 2018, will deploy more than 400 zero emission vehicles in the Sacramento market.

Through negotiation, Electrify America has urged potential car share vendors to focus on properties in low-income and disadvantaged communities, and these areas were also prioritized when developing car share service territories. Electrify America has directed vendors to provide registration and marketing opportunities in these communities, and it has also required potential car share vendors to explore the unbanked segment and opportunities to provide a variety of payment options.

3.3 Infrastructure

Electrify America continued site acquisition efforts to purpose-place charging stations in Sacramento to support Green City programs, including car share. In Q1 2018, Electrify America secured two leases for station sites in Sacramento. Electrify America is focused on acquiring station locations in the Sacramento city center and at Sacramento International Airport.

3.4 Exploring Other Green City Investment Opportunities

In Q1 2018, Electrify America completed a Request for Information to identify partnership opportunities to deploy public or private ZEV shuttles and/or buses in the Sacramento area. Electrify America asked entities with a background handling fleet services (e.g., bus, van, shuttle, or micro-shuttle operators and administrators) to submit proposals identifying services within Sacramento or connecting Sacramento to regionally significant destinations (e.g., universities, airports, or large employers) that currently exist or will launch before June 2019. Qualified services would address either new needs or substitute for current internal combustion engine shuttle or bus fleets with ZEV shuttles, micro-shuttles, or buses.

Electrify America will evaluate submissions in Q2, with the intention of moving forward in partnership with one or more entities during 2018.

4. BRAND-NEUTRAL EDUCATION AND AWARENESS

4.1 Broad Brand-Neutral ZEV Awareness Efforts

4.1.1. Creative Strategy

In Q1 2018, Electrify America and its California-based creative agency, Deutsch LA, Inc., shot, produced, and edited the first TV spot of its brand-neutral education and awareness campaign. Casting and production work took place in California. The TV spot was in final production at the close of the quarter, and it will likely begin running in California markets in Q2 or Q3. A radio spot – in both English and Spanish – will also be developed based on the creative content of the TV spot.

The first TV spot was developed as part of a full campaign, focused on communicating that a range of ZEVs are on the market today and that ZEVs are fun to drive, with a slight nod to the availability of public charging stations and the vehicles' benefit to the environment. With more technology, competitive pricing, and charging stations popping up every day, the barriers to entry are crumbling.

In Q1 2018, Electrify America also continued its engagement with nonprofit organizations undertaking their own ZEV awareness efforts to ensure that similar efforts are complementary and incremental to each other. In particular, Electrify America has welcomed Veloz's feedback on its TV spot, and it explored opportunities to incorporate that feedback during final production.

4.1.2. Media Strategy

Electrify America and its media agency, PHD USA, developed a media plan to target appropriate audiences for creative content being developed in partnership with the creative agency. The goal of the media plan was to generate broad brand-neutral awareness of electric vehicles, especially among the five principal segments of the car-buying market identified by Electrify America.

In Q1 2018, the media plan for the mass market ZEV awareness campaign was further modified to ensure significant media presence in disadvantaged and low-income communities. ZIP-code level cable television advertising purchases, Spanish language radio spots, and out-of-home (e.g., billboards) advertising in appropriate census tracts are all new strategies under consideration to ensure mass market media campaigns provide education and awareness in disadvantaged and low-income communities.

4.2 Learn and Drive Experiential Education

In Q1 2018, Electrify America and its partners, Gail and Rice and Forth, began conducting experiential education "Discover and Drive" events in California to help increase brand-neutral ZEV awareness. These events allow individuals to experience ZEVs without having to purchase a vehicle. The curriculum, which is offered in both English and Spanish, highlights the benefits and cost effectiveness of ZEVs in California. The program specifics included:

- **12 Locations (nine of which are disadvantaged or low-income communities):**

Bakersfield, Fresno, Indio, Milpitas, Orange County, Richmond, Sacramento, San Bernardino, San Diego, San Francisco, Stockton, Torrance

- **Format:** 31 days at shopping centers and Stockton's "Tune In Tune Up" event

- **Dates:** February – April

- **New and Used Zero**

Emission Vehicles: Nissan

Leaf, Chevy Bolt, VW e-Golf,

Tesla Model S, BMW i3, Hydrogen Fuel Cell Honda Clarity

- **Target attendance:** 100+ participants/day
- **Recruitment:** Electrify America worked with community-based organizations and CARB staff to increase turnout among low-income and disadvantaged communities, while also intercepting shoppers, promoting via social media and conducting local PR
- **Curriculum:** The curriculum, in both English and Spanish, highlights the benefits and cost effectiveness of ZEVs in California. To supplement the curriculum, Air Quality Management Districts, utilities, the Clean Vehicle Rebate Project, and community based organizations were invited to table at the events to share information on their programs
- **Co-Hosting:** Legislators, Elected Officials, and CARB Members Co-hosted events



During Q1 2018, the "California Discover and Drive" program took place in nine locations over 26 days,

including six low-income and disadvantaged communities (see Appendix). 3,115 attendees participated, 51% of whom reported incomes defined by California as low-income. Among participants, there was a:



- 41% increase in those considering a ZEV as the next car they buy or lease
- 38% gained knowledge about ZEVs
- 90% of attendees reported learning about EV infrastructure and are more comfortable driving electric

In Q2, the program continued to three additional cities over six days, and Electrify America will report the results of that effort in the Q2 2018 report.

4.3 Partnerships

To demonstrate Electrify America's commitment to collaboration, Electrify America formally joined Veloz, and the company agreed to serve on its Board of Directors. Electrify America's membership dues will be used by Veloz specifically to advance brand-neutral ZEV education and awareness in California. Electrify America consulted with CARB in 2017 to confirm that Veloz dues will be a ZEV Investment in brand-neutral education and awareness (as defined by Section 1.10.2 of Appendix C) in 2018.

5. OUTREACH AND PLANNING

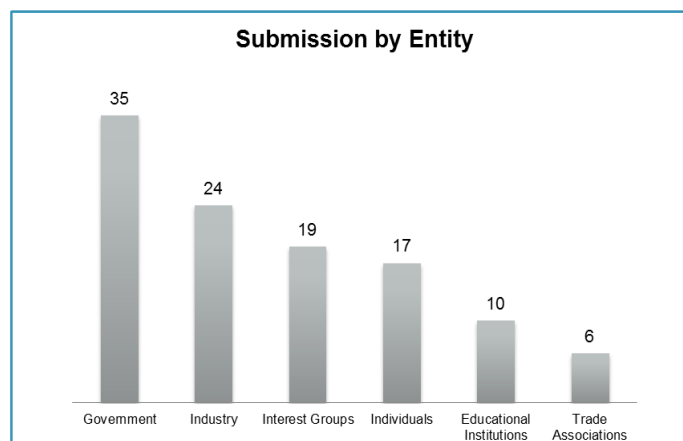
5.1 National Outreach Effort

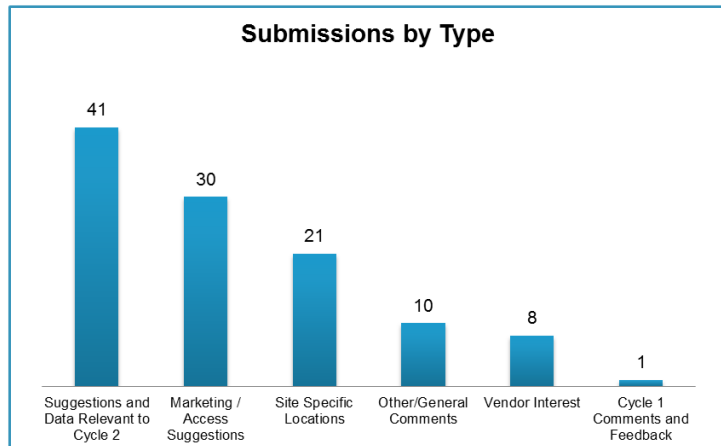
Consistent with Electrify America’s commitment to engage in national outreach as part of its investment planning process, in Q1 2018 Electrify America launched its second call for comments, proposals and recommendations. The input will inform Electrify America’s decisions regarding Cycle 2 investments in ZEV infrastructure, education and access programs. Electrify America intends to invest \$200 million in California, and \$500 million nationwide, in Cycle 2 – the 30-month period beginning in July 2019.

The request for input provides an opportunity for governments, organizations, and others to assist Electrify America as it updates its analytical models, evaluates new technology and public policy developments, tracks evolving consumer expectations, and explores the value of new allowable ZEV Investments. To assist in drafting Cycle 2 ZEV Investment Plans, Electrify America specifically sought the following types of input:

- Suggestions and Data Relevant to Cycle 2 Investments – Inputs from governments or organizations that are helpful to the decision-making process including data for helping qualify appropriate new use cases or to place charging stations, ZEV infrastructure plans for individual communities, and information regarding state and local policies designed to increase ZEV adoption;
- Education & Access Suggestions – Suggestions on Electrify America’s approach to brand-neutral education and access or specific events it should consider for participation;
- Specific Site Locations – Site locations nominated for consideration in Cycle 2 infrastructure investments;
- Cycle 1 Comments and Feedback – Feedback on Cycle 1 National and California ZEV Investment Plans, including approaches to metro selection, highways included, evaluation of use cases, and integration of new technology; and
- Other – All other comments or submissions that relate directly to Electrify America’s ZEV Investment Commitment.

Electrify America advertised the submission period in California newspapers, reached out directly to hundreds of government staff and elected officials throughout California, and held multiple webinars to explain the process and answer questions from government stakeholders. Electrify America also encouraged stakeholders to complete submissions by March 1, 2018, to ensure consideration in the Cycle 2 ZEV Investment Plan development process.





During Q1 2018, Electrify America received 111 total submissions from 105 entities in California, with the largest number of submissions coming from governments. Suggestions and data relevant to Cycle 2 planning represented the largest category of submissions. Electrify America also received 175 charging station site suggestions, the vast majority of which were suggested in the six California metropolitan areas in which Electrify America is concentrating Cycle 1

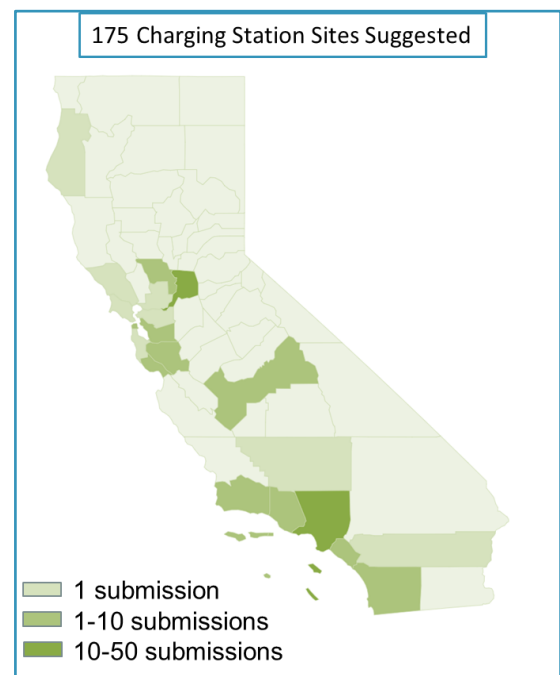
community charging station investments. Finally, considerable input was received on brand-neutral education and access programs.

Electrify America will review these submissions closely in Q2 and will reach out to submitters for clarification or to discuss collaboration where appropriate. In addition to reviewing the submissions, Electrify America initiated active outreach to community-based organizations, environmental justice organizations, local governments, and industry stakeholders in Q1 in order to solicit their suggestions and guidance regarding Cycle 2 investments. Input from these organizations, as well as from state agencies, municipal governments, federally recognized Indian tribes, and federal agencies, collected through this process will help Electrify America make informed, data-driven decisions about where to invest and what type of investments to make in Cycle 2.

5.2 Cycle 2 Planning

Electrify America continued its Cycle 2 planning process in Q1 2018. The Guiding Principles for Cycle 2 Planning are:

1. **Start from the basics:** Analyze both business fundamentals (e.g., highway and metro) and new business opportunities
2. **Actively engage external stakeholders:** Collaborate with stakeholders throughout planning process to strengthen thinking
3. **Emphasize real world inputs:** Leverage operational data, evidence, and customer-backed research to make data-driven decisions.



This planning effort will culminate in Electrify America submitting its Cycle 2 California ZEV Investment Plan to CARB for review and consistency with Appendix C of the 2.0 Liter Partial Consent Decree in the second half of 2018.

6. APPENDIX: INVESTMENTS IN DISADVANTAGED AND LOW-INCOME COMMUNITIES

Six of nine Discover and Drive events during Q1 2018 were located in disadvantaged or low-income communities.

Investment type	Location	Disadvantaged or Low-Income Census Tract
Discover and Drive event	Shops at Mission Viejo 555 The Shops at Mission Viejo Mission Viejo, CA 92691	6059032022
Discover and Drive event	Fashion Fair 645 E. Shaw Ave. Fresno, CA 93710	6019005302
Discover and Drive event	Arden Fair Mall 1689 Arden Way Sacramento, CA 95815	6067005502
Discover and Drive event	Stonestown Galleria 3251 20th Ave. San Francisco, CA 94132	6075033201
Discover and Drive event	Indio Towne Center Jackson St & I-10 Indio, CA 92201	6065045304
Discover and Drive event	Inland Center 500 Inland Center Dr San Bernardino, CA 92408	6071012400