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# **ELECTRIFY AMERICA**

2017 Annual Report to the  
California Air Resources Board

APRIL 30, 2018

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## Table of Contents

|  |           |
|--|-----------|
| <b>1. INTRODUCTION .....</b>   | <b>5</b>  |
| 1.1 Creating a Company .....   | 5         |
| 1.2 Outreach .....   | 5         |
| 1.3 Cycle 1 ZEV Investment Plans .....   | 7         |
| 1.4 Investment by Volkswagen Group of America.....   | 8         |
| 1.5 Preparing for Construction and Implementation.....   | 9         |
| <b>2. BUILDING A NETWORK OF ULTRA-FAST ELECTRIC VEHICLE CHARGING STATIONS.....</b>             | <b>10</b> |
| 2.1 Introduction .....   | 10        |
| 2.1.1. Process Consistent with Standard Procurement Policy .....                               | 11        |
| 2.2 Electrify America’s DC Fast Charging Network .....   | 12        |
| 2.2.1. Acquiring Station Sites in Station Target Zones .....                                   | 13        |
| 2.2.2. Disadvantaged and Low-Income Communities .....  | 15        |
| 2.2.3. Ultra-fast Electric Vehicle Charger Technology .....                                    | 16        |
| 2.2.3.1. Chargers Needed and Ordered .....   | 17        |
| 2.2.3.2. Non-Proprietary Connectors.....   | 17        |
| 2.2.3.3. Technology.....   | 17        |
| 2.2.3.3.1. Percentage of Networked Chargers (VGI).....   | 17        |
| 2.2.3.3.2. Percentage of Each VGI Technology/Protocol Used .....                               | 17        |
| 2.2.3.3.3. Battery Deployment.....   | 17        |
| 2.2.3.3.4. Interoperability .....  | 18        |
| 2.2.3.3.5. Network Control .....   | 18        |
| 2.2.3.4. Security .....  | 18        |
| 2.2.3.5. Payment .....   | 18        |
| 2.2.3.6. Source of Power .....   | 19        |
| 2.2.4. Maintenance, Reliability, and Backup Systems .....                                      | 19        |
| 2.2.5. Selection of a Firm to Construct a Network of DC Fast Charging Stations .....           | 19        |
| 2.3 Level 2 Workplace and Multiunit Dwelling Charging Stations.....                            | 20        |
| 2.3.1. Procurement of Workplace and Multiunit Dwelling Charging Station Turnkey Services ..... | 20        |
| 2.3.2. Charger Technology .....  | 21        |
| 2.3.3. Payment .....   | 22        |
| 2.3.4. Maintenance, Reliability, and Backup Systems .....                                      | 22        |

|   |           |
|---|-----------|
| 2.4 Problems or Concerns and Proposed Solutions.....  | 22        |
| <b>3. GREEN CITY INITIATIVE .....</b>   | <b>25</b> |
| 3.1 Introduction .....  | 25        |
| 3.2 Car Sharing – Request for Proposals.....  | 26        |
| 3.3 Infrastructure .....  | 26        |
| 3.4 Exploring Other Green City Investment Opportunities .....   | 26        |
| 3.5 Disadvantaged and Low-Income Impact.....  | 26        |
| 3.6 Problems, Concerns and Lessons Learned.....   | 27        |
| <b>4. BRAND-NEUTRAL EDUCATION AND AWARENESS.....</b>  | <b>28</b> |
| 4.1 Strategy and Message.....   | 28        |
| 4.1.1. Creative Strategy.....   | 28        |
| 4.1.2. Media Strategy.....  | 29        |
| 4.1.3. Costs and Program Spending .....   | 30        |
| 4.1.4. Program Outcomes .....   | 30        |
| 4.2 Learn and Drive Experiential Education.....   | 30        |
| 4.3 Partnerships .....  | 31        |
| 4.4 Problems, Concerns, and Lesson Learned .....  | 31        |
| <b>5. INVESTMENT IN DISADVANTAGED AND LOW-INCOME COMMUNITIES .....</b>  | <b>32</b> |
| 5.1 Investment in Disadvantaged and Low-Income Communities .....  | 32        |
| 5.2 Strategies by which Electrify America Strives to Ensure Investment in Disadvantaged and Low-Income Communities..... | 32        |
| 5.2.1. ZEV Infrastructure Investments .....   | 32        |
| 5.2.2. Green City Initiative .....  | 33        |
| 5.2.3. Education and Awareness.....   | 34        |
| <b>6. ECONOMIC IMPACT .....</b>   | <b>35</b> |
| 6.1 Vendors, Jobs, and Hiring.....  | 35        |
| 6.1.1. Creating Jobs in California.....   | 35        |
| 6.1.2. Vendor Survey.....   | 36        |
| 6.2 Minority, Women, and Veteran Business Outreach Efforts During the RFP Process .....                                 | 37        |
| <b>7. CORPORATE CITIZENSHIP .....</b>   | <b>38</b> |
| 7.1 Clean Energy Access Working Group .....   | 38        |
| 7.2 50 by 50 Commission .....   | 38        |
| 7.3 Kickoff Meetings .....  | 39        |
| 7.4 Advancing ZEV Awareness at Public Events.....   | 39        |

|  |    |
|--|----|
| 8. CREDITABLE COSTS .....                    | 40 |
| 9. ATTESTATION BY THIRD-PARTY REVIEWER ..... | 42 |

# 1. INTRODUCTION

## 1.1 Creating a Company

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 moved rapidly to implement the \$2 billion ZEV Investment Commitment.

The firm grew from an idea to reality in less than one year. Electrify America completed a robust national stakeholder outreach effort, and it finalized plans for \$500 million in Cycle 1 investments in Q1 2017. It presented the Cycle 1 National and California ZEV Investment Plans to regulators for review and approval, and by the end of the year, operations were underway to deploy these investments. The company contracted with dozens of vendors and hired nearly 60 staff to build its charging stations and to develop its marketing, education, and access initiatives. Electrify America leased office space and an equipment and software quality control center in Virginia, began leasing land for charging stations across 39 states, and launched a Green City Initiative in Sacramento. In short, Electrify America became a full-service, owner-operator electric vehicle (EV) charging company and then some.

As part of the ZEV Investment Commitment, Electrify America publishes this Annual Report to share the progress and impact of its investments.

*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.

## 1.2 Outreach

In late 2016, Electrify America implemented the National Outreach Plan approved by the U.S. Environmental Protection Agency (EPA). Electrify America welcomed more than 600 comments, suggestions, and ideas on its new website, and it also actively sought out input from Federal agencies (Department of Energy, Department of Transportation), California State agencies, Native American Tribes, more than a dozen automakers, ZEV driver associations and consortia, National Laboratories (National Renewable Energy Laboratory, Argonne, etc.), universities (e.g. University of California, Davis (UC Davis), University of California, Los Angeles (UCLA)), think tanks (e.g. Rocky Mountain Institute (RMI)), technology firms, hydrogen refueling station developers, electric vehicle charging companies, and equipment providers (see Figure 2). Electrify America also closely reviewed the comments submitted to the California Air Resources Board (CARB) during its three separate comment periods regarding Electrify America's Cycle 1 investment.

Feedback from the submissions, comments, and dialogue helped to fine tune and substantiate the Cycle 1 ZEV Investment Plans. For example, Electrify America’s largest Cycle 1 investment will establish a nationwide network of ultra-fast DC fast charging (DCFC) stations capable of charging any brand of electric vehicle along major transportation corridors – a national priority established by Congress in the FAST Act and a major priority in government comments to Electrify America.

*Figure 2: Cycle 1 Stakeholder Input*

| Organization type         | Nature of collaboration   |
|---------------------------|---|
| Government agencies       | Received submissions from ports, metros, and states, and responded to each entity |
| Utilities                 | Discussed site proposals, demand charges, and operational integration             |
| Academia                  | Leveraged insights and research findings on charging use cases                    |
| Charging companies        | Discussed partnerships and interoperability                                       |
| OEMs                      | Discussed future technologies   |
| Primary regulatory bodies | Discussed full investment plan with iterative reviews and feedback                |
| Associations              | Discussed partnership models, site opportunities, and best practices              |
| Interest groups           | Discussed best practices and partnership models                                   |

Once the Cycle 1 ZEV Investment Plans were approved, Electrify America’s outreach efforts continued as the firm moved from planning to implementation.<sup>1</sup> In September and October, Electrify America held six in-person kickoff meetings with roughly 100 organizations in the selected metropolitan areas that will host Cycle 1’s \$45 million in metro charging station investments. At each meeting, Electrify America shared its proprietary investment methodologies and confidential investment strategies with state and local government leaders, as well as utilities, to solicit feedback, and it discussed opportunities for collaboration and cooperation. Electrify America also detailed its anticipated investment in disadvantaged and low-income communities.<sup>2</sup> In California alone, approximately 100 different government offices and utilities were invited, and CARB staff attended every meeting. In many cases, these meetings have led to an ongoing dialogue between Electrify America and community leaders about opportunities for win-win investment.

Electrify America’s outreach efforts also identified hundreds of potential vendors, station site hosts, and station location leads. Every station site suggested by a government became an active lead in the Electrify America real estate process, and the company strived to keep government partners up to date on the status of their recommendations.

Finally, towards the end of 2017, Electrify America initiated outreach to leading academic experts in the field of ZEV investment in order to ensure that data-driven Cycle 2 investments are as high impact as possible. Through workshops and open dialogue with experts at UC Davis, UCLA, The Drucker School of

<sup>1</sup> The approved National Outreach Plan included an outreach period that could have ended in January, but Electrify America continued its outreach efforts for the entire year.

<sup>2</sup> 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>

Management, the International Council on Clean Transportation, RMI, and the U.S Department of Energy's National Labs, Electrify America began a year-long effort to revisit assumptions and update analysis in preparation for its Cycle 2 investment.

### 1.3 Cycle 1 ZEV Investment Plans

In February 2017, Electrify America met and conferred with EPA and CARB regarding the contents of the Cycle 1 National ZEV Investment Plan and the Cycle 1 California ZEV Investment Plan, respectively. After incorporating feedback and guidance from the respective regulatory bodies, Electrify America submitted Cycle 1 ZEV Investment Plans to both agencies in March, including a public version of both plans.

The final Cycle 1 ZEV Investment Plans outlined a data-driven and analysis-based approach to ZEV investment, focusing approximately \$370 million in ZEV charging infrastructure investments, approximately \$45 million in brand neutral education and awareness programs, and a \$44 million Green City Initiative in Sacramento, California (see Figure 3). All investments were consistent with the requirements of the ZEV Investment Commitment in Appendix C to the 2.0-liter Partial Consent Decree<sup>3</sup> (Consent Decree). The ZEV charging infrastructure investments focus on establishing a nationwide network of up to 300 ultra-fast DC fast charging stations, and more than 650 community-based charging stations at retail locations, workplaces, and multiunit dwellings (MUDs) in 17 beachhead ZEV communities. Electrify America will site nearly 90% of its California stations at the community level, consistent with the support for community-based charging communicated by California-based stakeholders.

The Cycle 1 National ZEV Investment Plan was approved in April, and Electrify America immediately initiated installation of quick-win, DC fast charging stations in partnership with EVgo in the Washington, DC metro area, and eventually installed 32 stations in nine states during the year. It also moved forward with more time-intensive real estate acquisition efforts, hardware and construction procurement processes, and began planning for the workplace and multiunit dwelling program later in the year.

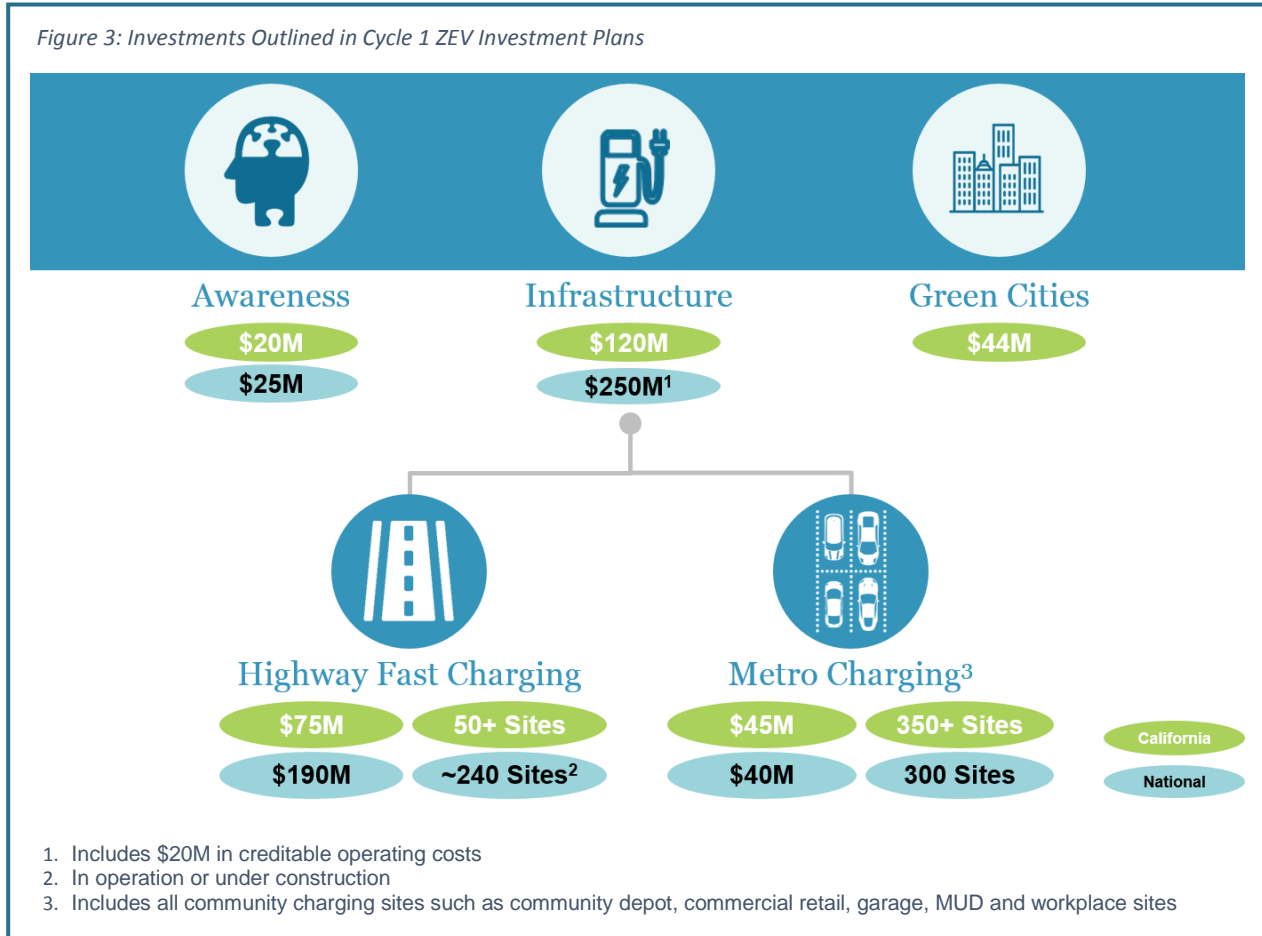
The Cycle 1 California ZEV Investment Plan was considered by CARB between March and August. Public comment on the Plan was sought in March, and CARB requested that Electrify America submit supplemental information in May 2017. Electrify America provided additional information in June, and CARB approved the Cycle 1 California ZEV Investment Plan, as supplemented, on August 4, seven months into Cycle 1.

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<sup>3</sup> Appendix C to the 2.0 Partial Consent Decree:

<https://www.vwcourtsettlement.com/wp-content/uploads/documents/DOJ/Approved%20Appendix%20C.pdf>

Figure 3: Investments Outlined in Cycle 1 ZEV Investment Plans



#### 1.4 Investment by Volkswagen Group of America

During 2017, Electrify America’s parent company, Volkswagen Group of America (VWGoA), invested considerable resources supporting Electrify America as it matured into a free standing entity. The investment of \$17.4 million, which was additional to the \$2 billion ZEV Investment Commitment required by Appendix C, played an essential role in allowing Electrify America to fulfill its 2017 obligations.

Specifically, VWGoA’s investment was deployed in order to develop comprehensive and data-driven Cycle 1 ZEV Investment Plans, which included detail on the quantity, cost, type, and location of proposed ZEV infrastructure investments. Planning ZEV investments in the utilization-focused manner required by Appendix C of the Consent Decree necessitated building a unique intellectual and analytical capacity, for which VWGoA’s investment was utilized. The investment made by VWGoA was also used to develop the Green City selection criteria, and to identify the quantity, cost, type and location of ZEV infrastructure that the Green City Initiative programs would require. VWGoA’s investment was also essential in order to address priorities raised by CARB in its 38-page February guidance letter and CARB’s May request for supplemental information. In order to respond to these requests, VWGoA invested in new analysis to determine how proposed Cycle 1 ZEV Investments would impact disadvantaged, low-income and underserved communities; to study the viability of investing in hydrogen stations and to determine whether such investments would constitute a “reasonably anticipated need;” to evaluate transformational



investments including renewable energy; and to build project performance tracking tools. VWGoA's investment also enabled Electrify America to study and articulate how its individual investments enabled a 10-year economically sustainable business case. Each of these requests can be directly attributed to the infrastructure investments proposed in the Cycle 1 California ZEV Investment Plan, and Electrify America would not have been able to fulfill CARB's requests without the investment made by VWGoA.

In summary, Electrify America could not have developed the Cycle 1 ZEV Investment Plans called for by Appendix C or responded to CARB's requirements had VWGoA been unwilling to make its \$17.4 million investment. The scale of this investment demonstrates the company's commitment to Electrify America's success and the ZEV Investment Commitment.

## 1.5 Preparing for Construction and Implementation

As detailed below, 2017 was a year committed almost entirely to preparing and developing the means to make the investments proposed in the Cycle 1 National and California ZEV Investment Plans. This work positions Electrify America extremely well to focus 2018 activities on construction, brand-neutral education and awareness building, the Green City program launch and initiating service to ZEV drivers across the nation.

## 2. BUILDING A NETWORK OF ULTRA-FAST 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 4). The planned network in California will consist of over 600 DC fast charging dispensers at over 150 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.

Figure 4: National Highway Map



To launch the network expeditiously, Electrify America initiated two distinct infrastructure strategies in California (see Figure 5).

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

Second, it carefully analyzed geospatial data in its six targeted metro areas to identify ideal locations for high utilization workplace and multiunit dwelling EV charging stations. The company hired highly qualified and experienced “turnkey” vendors to deploy and maintain charging stations in the target locations. These strategies allowed Electrify America to move forward quickly in partnership with existing industry leaders and help a fledgling industry to expand.

As detailed in Chapter 5, Electrify America anticipates that 35% of its business-driven investments within California will be in disadvantaged or low-income communities.



### 2.1.1. Process Consistent with Standard Procurement Policy

As Electrify America entered the market, it used competitive procurement processes to leverage existing technology and vendors across a variety of industries. To acquire necessary EV charging hardware, information technology, related equipment and necessary services, Electrify America utilized an in-depth procurement process, including Requests for Information (RFIs) and Requests for Proposals (RFPs). The company followed industry best practices by using an end-to-end approach built to ensure market competition and fairness for each supplier involved. In 2017, Electrify America issued 20 RFPs and completed 24 projects in pursuit of vendors to assist in DCFC site validation and acquisition for highways and metros, network services, Level 2 (L2) turnkey workplace and multiunit dwelling charging, EV station maintenance, and human-machine interface (HMI) design. Electrify America also made considerable progress in selecting vendors for data communication, customer service center, credit card services, and battery storage.

Electrify America developed and began using standardized templates for statements of requirements and supplier evaluation criteria. The procurement team leads the sourcing and vendor management in a centralized manner, facilitating all communication to and from potential suppliers during the process. Technology, Construction, Partnerships, Finance, Purchasing, and Legal teams collaborate to reach consensus agreements and must sign off on decisions. When final selections are made, each purchase order must include a checklist of necessary documents to continue the process from initial funding request, through final negotiations, to signed contract.

## 2.2 Electrify America's DC Fast Charging Network

As described in thorough detail in the Cycle 1 California ZEV Investment Plan, Electrify America prioritized investments in target markets and corridors by utilizing a detailed, data-driven process to identify highways and metropolitan areas projected to have the greatest gap between charging supply and the need for EV charging infrastructure in 2020.

Based on the budgets established in the Cycle 1 California ZEV Investment Plan, Electrify America created an internal goal of building or initiating construction of DC fast charging stations at 160 distinct sites along high-traffic highways and in six targeted metro areas in California. This was an ambitious target, based on aggressive cost estimates, and it is subject to likely revisions as final station costs are realized.

With a specific number of station targets established, Electrify America moved aggressively to drill down in each of its target markets to identify the specific target census tracts and stretches of highway where DC fast charging stations would be most needed by 2020. Electrify America used academic, government, and industry reports on ZEV charging infrastructure investment; ZEV deployment projections; existing ZEV charging infrastructure databases; and intercity travel data to build a detailed geospatial analysis model, which it used to establish a target geographic area, or target zone, for all 160 stations it planned to develop in Cycle 1. For community-level charging in the six targeted metro areas, Electrify America used analytics to identify census tracts for each use case (community depot, public DCFC, workplace, and multiunit dwelling) where new charging stations are most likely to support ZEV deployment, using the indicators identified by the California Center for Sustainable Energy as correlated with areas of high ZEV sales, combined with the density of those use cases or the incidence of likely usage of that charging destination from nearby ZEV sales areas. For example, areas with a high density of workplaces in certain industries and a high daytime population were prioritized for the workplace charging investment.

Electrify America's ultra-fast charging stations will be placed along the long-distance highway routes which are anticipated to be most underserved and which link prioritized metro areas, in order to form a cohesive network. At a high level, ZEV traffic was estimated along every major route, and, after taking into account existing charging infrastructure supply along those routes, the estimated 'supply-demand gap' for charging stations along each route was calculated. This allowed Electrify America to identify which routes were in greatest need for new infrastructure investment. Ten-mile linear stretches of highway were identified as target zones for investment along these routes, which average 48 miles apart and no more than 120 miles apart (see Figure 6). This spacing will allow most drivers of 200-mile range ZEVs to travel along corridors with an abundance of charging options.

Highway stations will feature between four and ten chargers, so all customers will have greater access to chargers with more power and less queuing. The stations will feature up to 350 kW charging capable of adding 20 miles of range to an electric vehicle per minute of charging, or approximately seven times faster charging than the 50 kW chargers common in the market today.

Figure 6: Highway Site Targets

| Distance between stations     |                      |          |
|-------------------------------|----------------------|----------|
| Average                       | Maximum              |          |
| 48 miles                      | 120 miles            |          |
| Chargers per site             |                      |          |
| Minimum                       | Average              | Maximum  |
| 4                             | 5                    | 10       |
| Charging speed (miles/minute) |                      |          |
| 50kW=                         | 150kW=               | 350kW=   |
| 3 miles                       | 9 miles              | 20 miles |
| Locations                     |                      |          |
| 50+<br>Stations               | 10<br>Highway Routes |          |

### 2.2.1. Acquiring Station Sites in Station Target Zones

Before Electrify America can build a DC fast charging station (see Figure 7) 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 national network of DC fast charging stations.

Using dedicated internal staff and experienced external suppliers in 2017, Electrify America took steps to secure licenses and leases from site hosts for the 10-year period of the ZEV Investment Commitment at locations where stations are projected to meet an anticipated demand for infrastructure.

In each target area in which Electrify America plans to build a station, Electrify America considered multiple real estate leads, based on their unique attributes, such as proximity to a highway exit, availability of three-phase power, site lighting, and access to customer amenities (see Figure 8). Leads were identified

through suggestions submitted during the National Outreach effort, which produced 10,158 specific site leads in California. Electrify America also reached out to large-scale real estate owners (e.g. Walmart) and real estate investment trusts to identify leads. Finally, to increase the number of leads for consideration, Electrify America contracted with four real estate acquisition specialty firms to identify viable leads and provide site feasibility analysis. In total, 12,309 leads were considered in 2017.

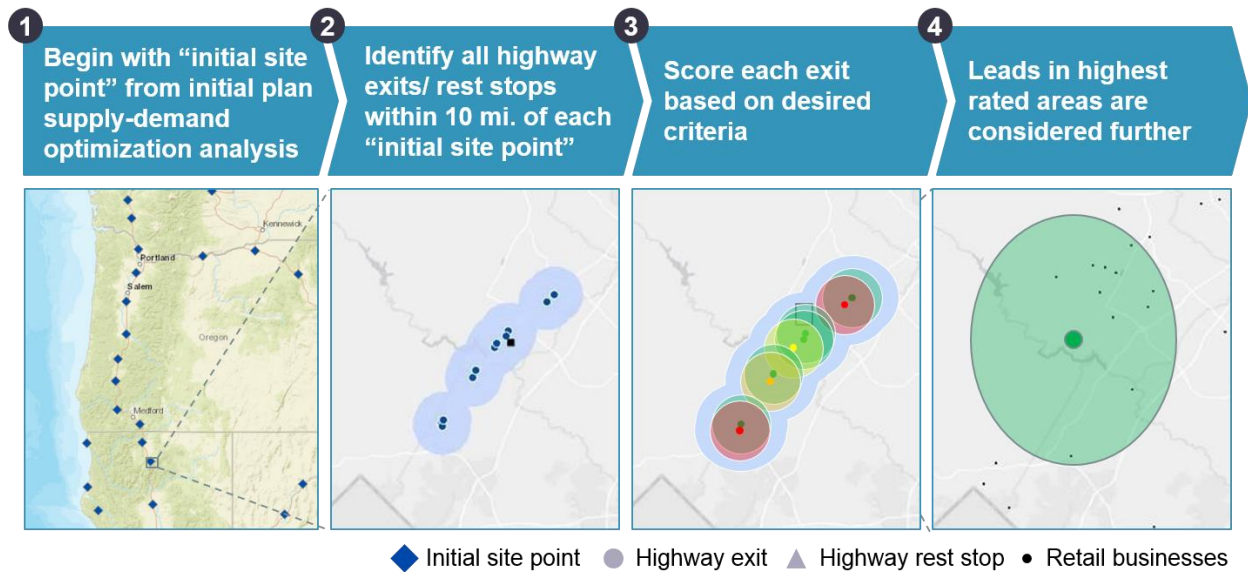
*Figure 7: Fast Charging Station*





Figure 8: Highway Site Identification

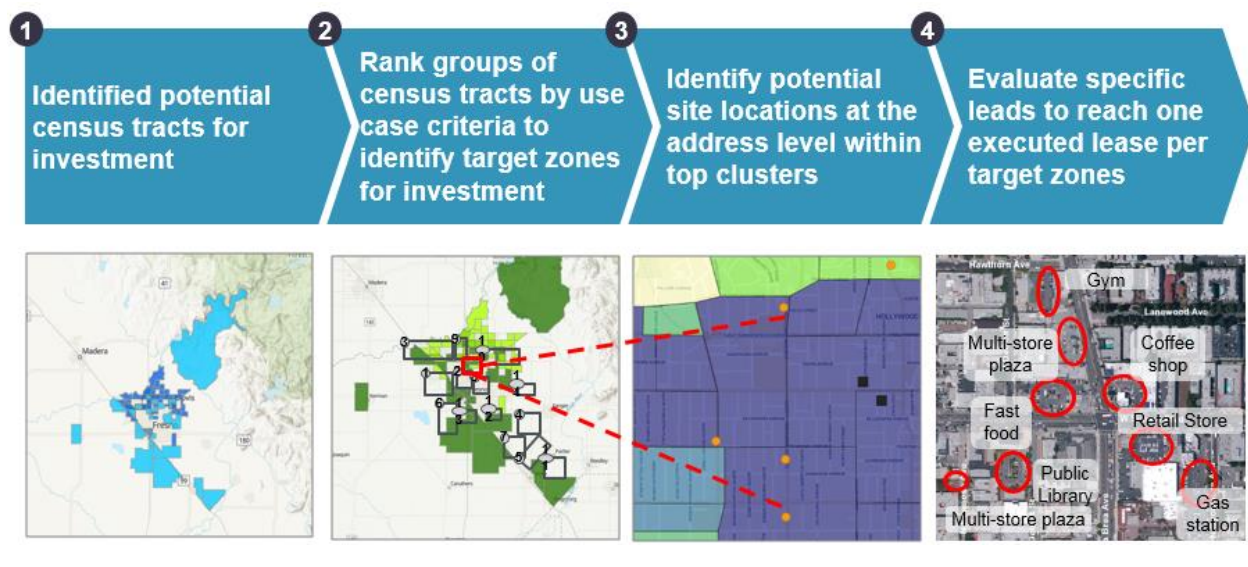
### Electrify America has a customer-centered highway site identification approach



Of these, 1,228 leads were located in target zones for investment. On average, more than seven leads were considered for each target zone of investment in 2017. Within each target zone, specific sites are identified for further desktop analysis and then onsite assessments. Although many viable options may exist, ultimately, only one site will be leased or licensed within each target zone.

Figure 9: Site Identification

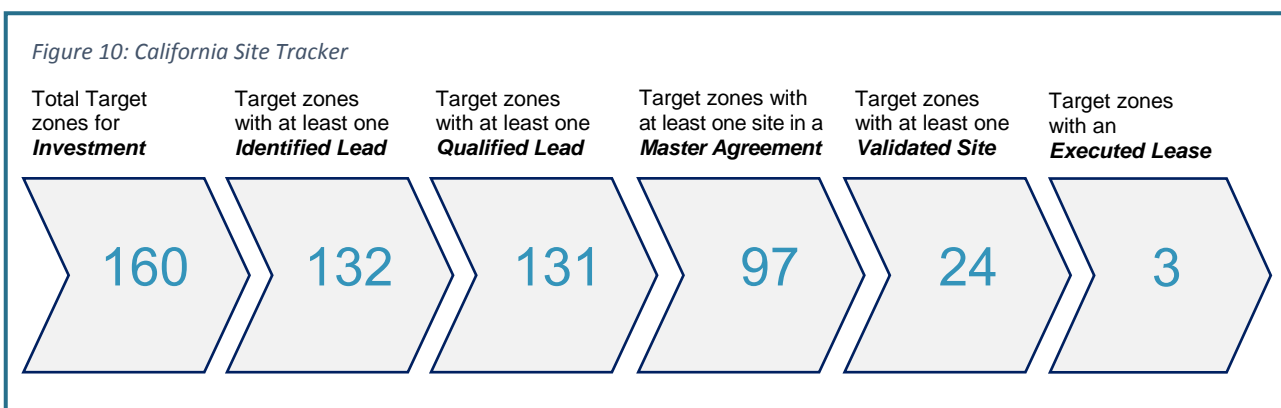
### Electrify America has a data-driven approach to identifying potential investments



Electrify America’s four regional field staff in 2017 led the effort to evaluate real estate leads, qualifying at least one lead in 132 target zones as having the necessary dimensions and amenities for a station. Initial contacts with real estate owners also confirmed interest in hosting charging infrastructure (see Figure 9).

Electrify America entered into master agreements with 12 large-scale real estate owners that control hundreds of potential sites in order to speed lease agreements for specific properties. Ninety-seven target zones had at least one lead covered by a master agreement in 2017.

Electrify America then validated the installation specifics with the local utility and property owner through a site walk and discussion. The company validated at least one lead in 24 target zones. Throughout the site acquisition process, Electrify America worked 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, and three individual leases were signed in 2017 (see Figure 10).



### 2.2.2. Disadvantaged and Low-Income Communities

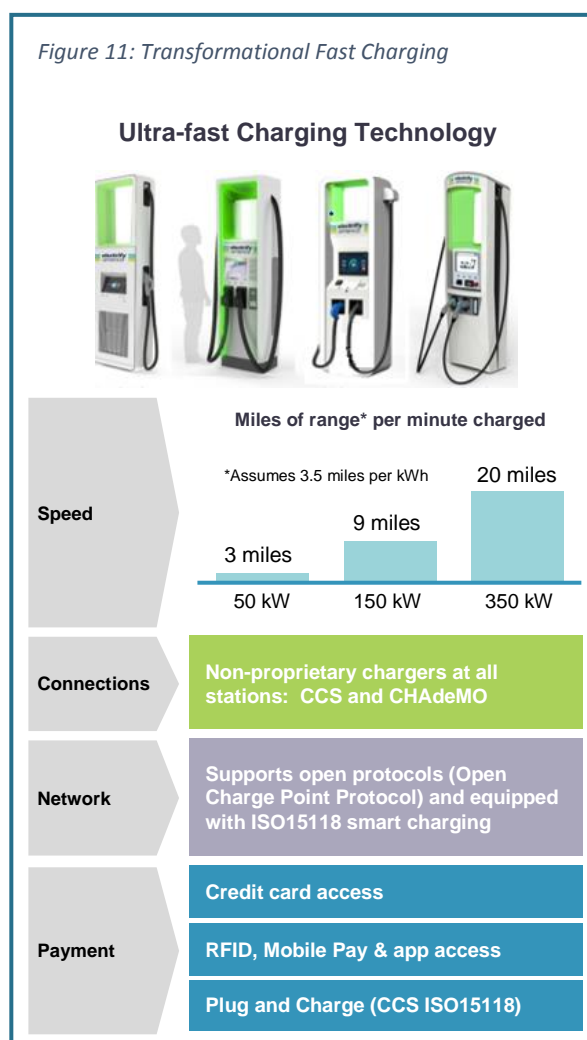
As described in greater detail in Chapter 5 below, Electrify America is taking steps to make meaningful investments in low-income and disadvantaged California communities. In 2017, Electrify America projected that approximately 50% of its highway stations would be in such communities, and the company’s L2 turnkey vendors have a contractual obligation to place 35% of workplace and multiunit dwelling chargers in low-income or disadvantaged communities. In keeping with these efforts, Electrify America strove to ensure 35% of potential California sites in all stages of the site acquisition funnel during 2017 – site identification, qualification, lease execution, and validation – were located in low-income or disadvantaged communities. To date, current tracking shows that Electrify America exceeded 35% in each of the steps defined in Figure 10.

### 2.2.3. Ultra-fast Electric Vehicle Charger Technology

In 2017, Electrify America commissioned the design and production of ultra-fast DC electric vehicle charging equipment. As ultra-fast DC electric vehicle chargers have not previously been deployed in North America, Electrify America worked closely with its vendors to achieve the development of this new equipment and implemented a stage gate process to manage execution of Electrify America's contracted specifications. This included weekly touchpoints with vendors, review of key design decisions and final Quality Assurance/Quality Control of end to end testing of vehicles, chargers, credit card readers, credit card processing and Electrify America's network platform. The development of this new equipment also required certification through Nationally Recognized Testing Laboratories (NRTL) to ensure that the charging equipment met all applicable Underwriter Laboratories (UL) standards. Electrify America's customer-centric stations will use the most advanced technology ever deployed for convenient, fast charging (see Figure 11).

Cutting-edge technology is at the core of Electrify America's nationwide network of charging stations along high-traffic highways. 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.<sup>4</sup> 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.<sup>5</sup>

Figure 11: Transformational Fast Charging



<sup>4</sup> 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.

<sup>5</sup> 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.



### 2.2.3.1. Chargers Needed and Ordered

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.<sup>6</sup> Electrify America ordered all of the 605 chargers needed in California for Cycle 1.

### 2.2.3.2. Non-Proprietary Connectors

Electrify America will feature non-proprietary connectors on all chargers to provide greater access to consumers. All DC fast charging sites will support both the CCS Combo (using both DIN70121 and ISO/IEC 15118 interoperability standards) and CHAdeMO connectors.

### 2.2.3.3. Technology

#### 2.2.3.3.1. Percentage of Networked Chargers (VGI)

In 2017, the 32 DCFC stations deployed in partnership with EVgo were networked. These chargers are connected to the EVgo network as part of our partnership and are anticipated to be connected to the Electrify America network when it is operational. No chargers were operational in California in 2017, and thus there were not yet chargers connected to the Electrify America network.

#### 2.2.3.3.2. Percentage of Each VGI Technology/Protocol Used

Electrify America will equip all DCFC with ISO 15118, which enables smart charging functionality in 2018 and beyond.

#### 2.2.3.3.3. Battery Deployment

Battery storage can help ensure DCFC station resiliency, and it can also help mitigate high demand charges. In 2017, Electrify America initiated procurement processes with the intention of installing battery storage at select charger sites to manage peak demand and ease grid loads, while all sites will be prepared for future installations. Electrify America is using a networking platform that enables utility integration using Open ADR, allowing it to respond to utility demand response needs and optimize battery charging using time-of-use tariffs. Electrify America also intends for some stations to be capable of islanding to increase resiliency and address unforeseen power outages. Batteries will be installed during site construction in 2018 and beyond.

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<sup>6</sup> 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>

#### 2.2.3.3.4. Interoperability

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 all DCFC stations, creating an easy customer experience that is the primary goal of most interoperability efforts. In addition, to simplify the consumer experience, Electrify America is considering access agreements with owners of other charging networks to make it easy for ZEV drivers to move between different charging networks. Once these agreements are established, Electrify America's DCFC stations will be technologically capable of allowing customers of other networks to use their existing network credentials at Electrify America's DCFC stations without hardware changes. Electrify America's DCFC stations will also use open protocols compliant with Open Charge Point Protocol (OCPP) version 1.6 or higher and support cellular connectivity, which are capabilities that help to standardize communication between different chargers and networks.

#### 2.2.3.3.5. Network Control

After a highly competitive process, Electrify America selected Greenlots, a California-based company now active in 13 countries, as its network vendor. Greenlots' technology will enable Electrify America to effectively build, operate, and manage its DC fast charging network by providing real-time charger health status, utilization data, dynamic pricing capabilities and predictive analytics to identify future maintenance and provide a seamless charging experience for customers.<sup>7</sup>

The operating platform for Electrify America's website, app, and portal will also make it easy for drivers to instantly locate the closest charger, authenticate access for members, receive notifications of their charging status, such as when complete, and quickly make payments with their mobile device or through vehicle authentication.

#### 2.2.3.4. Security

The network controls are hosted by Amazon Web Service (AWS), which allows a high security standard. Electrify America undertook intensive testing to approve AWS as a safe and secure environment, as well as security audits of Greenlots as part of the licensing of the network.

#### 2.2.3.5. Payment

Electrify America's public DC fast charging stations will accept multiple payment methods for initiating a charging session, ensuring its chargers are accessible to a wide range of users. Subscriptions and pricing plans offered to members plan to be authorized through contactless payment methods, the Electrify America mobile app, or "Plug-and-Charge" standardized in IEC/ISO 15118. However, a key part of Electrify America's business model is to provide true "pay-as-you-go" service. Even without pre-existing charging network operator relationships, electric vehicle drivers will still be able to access the charging stations simply by using a credit card or mobile payment method like Apple Pay and Android Pay.

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<sup>7</sup> Electrify America Press Release. "Electrify America Selects Greenlots to Develop Operating Platform to Manage \$2 Billion Investment in Coast-to-Coast Network of High Speed Electric Vehicle Charging Stations." January 23, 2018. <https://www.electrifyamerica.com/downloads/get/447015>

#### 2.2.3.6. Source of Power

CARB requested that this Annual Report provide information on any sources of electricity, other than retail purchases from electric utilities, which Electrify America has utilized. Electrify America did not purchase or source electricity for stations in 2017. As an alternative to buying electricity at commercial rates set by retail utility providers, Electrify America is studying options to reduce cost or reduce emissions, including investments in renewable energy generation and purchases of low-carbon electricity.

#### 2.2.4. Maintenance, Reliability, and Backup Systems

Maintenance and reliability are important to create a positive customer experience and are a priority for Electrify America. In 2017, Electrify America brought under contract maintenance vendors who will conduct periodic maintenance across Electrify America's network for the 10-year investment period. Crucially, vendors are required to repair impaired or inoperable equipment within 72 hours. Reliability is further maintained with a toll-free customer service hotline with a live operator available 24 hours a day and seven days a week should any maintenance issue arise. Electrify America will track service response time metrics to ensure the system is properly maintained.

#### 2.2.5. Selection of a Firm to Construct a Network of DC Fast Charging Stations

In 2017, Electrify America completed an RFP to select the design-build firm responsible for the design and construction of DCFC stations at both highway and community locations in California. Electrify America is required to maintain its station investments for nearly ten years, so it has a clear business imperative for the construction of stations to be done right the first time, and the company hired a firm through a competitive process consistent with established procurement policies.

Workforce experience was a critical factor of the RFP scoring process. The design-build construction contract requires the general contractor to use California-certified electricians with 8,000 hours of training who have passed the state exam to install, connect, and energize each charging device. Safety was also a priority when evaluating design-build firms, and the RFP required bidders to provide construction safety data for the last five years, including Occupational Safety and Health Administration recordable and reportable incidents per 200,000 field labor hours and worker compensation experience mod ratings.

Another key component of the RFP scoring process was company experience in the EV charging industry. Given the large number of sites to be built, Electrify America needed a firm able to manage and deliver multiple projects simultaneously while delivering the highest levels of schedule adherence, quality management, safety, and stakeholder management. Bidders were asked to prove their ability to develop and implement an effective quality program while adhering to the ambitious timelines for DCFC deployment. An emphasis was placed on site design and accessibility for drivers including considerations of site configuration, user interface, site lighting, and site fit and finish. Finally, Electrify America sought a vendor with a proven track record of delivering sites and successfully working with multiple stakeholders across cities, counties, and states.

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.

## 2.3 Level 2 Workplace and Multiunit Dwelling Charging Stations

Electrify America's Cycle 1 California ZEV Investment Plan proposed to spend approximately \$45 million in community-level charging across six target metro areas, and a significant portion of this investment will fund the construction of L2 charging stations in the locations vehicles spend most of their time: at home and work.

Electrify America and its vendors plan to install approximately 1,500 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). Employees with chargers at their workplace are six times more likely to drive a plug-in electric vehicle than the average worker, and chargers located at the workplace can potentially double an electric vehicle owner's daily driving range.<sup>8</sup> In California, Electrify America strives to ensure 35% of these multiunit dwelling and workplace charging investments will be made in census tracts designated as low-income or disadvantaged communities.

### 2.3.1. Procurement of Workplace and Multiunit Dwelling Charging Station Turnkey Services

Electrify America used an RFP process to select "turnkey" vendors capable of deploying workplace and multiunit dwelling charging rapidly and cost effectively. Vendors were selected based on their track record for reliability, strong pipeline of real estate leads, user-friendly hardware design, ability to meet the ambitious timelines, and use of OCPP 1.6 for interoperability. Through its procurement process, Electrify America selected SemaConnect, EV Connect and Greenlots as partners in its L2 turnkey program.<sup>9</sup>

Each of the three vendors selected is highly qualified and experienced. Greenlots was established in 2008 and has installed charging solutions for some of the largest automakers, utilities, and site hosts in North America, Europe, and Asia. SemaConnect was also established in 2008 with an initial focus on product development, and it launched its first charging solution in 2011. EV Connect was founded in 2009 and is focused on flexible and open standards-based charging solutions. Greenlots and EV Connect are both headquartered in California.

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<sup>8</sup> U.S. Department of Energy. "EV Everywhere Workplace Charging Challenge Mid-Program Review: Employees Plug In." [https://www.energy.gov/sites/prod/files/2015/12/f27/105313-5400-BR-0-EERE%20Charging%20Challenge-FINAL\\_0.pdf](https://www.energy.gov/sites/prod/files/2015/12/f27/105313-5400-BR-0-EERE%20Charging%20Challenge-FINAL_0.pdf)

<sup>9</sup> 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>

In 2017, Electrify America established a process with these three electric vehicle charging station industry leaders to begin installing stations in 2018. Electrify America assigned each vendor specific census tracts 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 will use their own proprietary site leads analysis supplemented by Electrify America data to identify and submit sites for preliminary review by Electrify America. Once sites have been reviewed and approved, vendors will then negotiate site host agreements with 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. Electrify America holds at least one call weekly with responsible staff of each vendor to ensure progress is made and issues are resolved in a timely manner. Chargers installed under this program will be interoperable with the Electrify America charging network.

Each of the vendors is contractually obligated to install 35% of their overall stations quota in low-income or disadvantaged communities, and Electrify America must approve every station location in order to ensure this contractual term is being met.

### 2.3.2. Charger Technology

Electrify America-funded L2 charging stations will have a minimum power level of 6.6 kW (see Figure 12). 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. For many cars today, charging by L2 can take six to eight hours, which allows drivers to fully charge their electric vehicles at their home or workplace, where the vehicles spend the most time.

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.

Electrify America requires its vendors employ the appropriate technical, physical, and organizational security measures in compliance with applicable laws and regulations with no less than industry standards. Electrify America may require security audits of its vendors as well.

Figure 12: Level 2 Infrastructure

#### Level 2 Equipment



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

### 2.3.3. Payment

As is standard practice in the industry for workplace and multiunit dwelling charging stations, Electrify America vendors and site hosts will determine the payment requirements and options. In situations where site hosts choose to require payment for use of the chargers, potential customers will in most cases be able to sign up with the network provider or pay for a single use over the phone via credit card.

### 2.3.4. Maintenance, Reliability, and Backup Systems

Maintenance and reliability are important to create a positive customer experience and are a priority for Electrify America. Electrify America has engaged maintenance and service vendors to ensure periodic maintenance will be available across the network for the 10-year ZEV Investment period. Crucially, vendors are required to repair impaired or inoperable equipment within 72 hours. L2 customers can also access a toll-free customer service hotline answered by a live operator should any maintenance issue arise.<sup>10</sup> Electrify America will track service response time metrics to ensure the system is properly maintained.

## 2.4 Problems or Concerns and Proposed Solutions

Electrify America has made great progress in its investments during 2017, but it did encounter some challenges in the past year.

The scale of Electrify America's Cycle 1 investments is large enough that it will interconnect to the service territories of more than 200 electric utilities in 39 states. Each of these interconnections comes with its own rules, regulations, and tariff structures. Utility companies have been almost universally helpful and accommodating, but Electrify America has found both interconnection costs and electricity rates are widely disparate from utility to utility.

With regard to interconnection costs, Electrify America has engaged utilities early in the site selection process in order to reduce potential costs. But because the load profile and needs are not typical for commercial customers, Electrify America has encountered some high cost estimates. For example, despite the appearance of large connected loads from charging stations, Electrify America does not expect to use the full capacity of the installed transformers. Many utilities are not familiar with this type of installation and may have rates that are unfriendly to low load-factor customers, which makes discussions on transformer sizing and monthly bills challenging. Some California utilities have teams dedicated to working on charging station service applications, which facilitates the process.

Demand charges can have a significant impact on the cost of charging an electric vehicle and the economic sustainability of a charging business. At low utilization rates, Electrify America has modelled that demand

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<sup>10</sup> Electrify America's contracts require the toll-free number to be answered by a live operator during business hours, but two of the vendors maintain a 24 hour call center.

charges for a 300-mile charge cost more than \$60, making DCFC expensive for consumers and unprofitable for businesses.<sup>11</sup> Electrify America will deploy battery storage to mitigate some demand charges, but state-level rate reform could also impact this challenge.

In many locations around the country, rest stops on highways would have offered excellent site options for Electrify America's investments. However, due to the Federal Aid Highway Act of 1956, sites receiving federal funding for construction cannot support commercial activity. Although Congress recently amended Federal law to allow highway funding to be used for charging stations at these locations, commercial activity remains constrained. This restriction meant Electrify America could not invest in those locations. An exemption from that law would allow Electrify America to consider investing in rest stops and similarly funded properties in the transportation network.

As Electrify America moves toward permitting and construction of charging infrastructure, it is concerned that some state and local policies and regulations may present challenges and delays. AB 1236 directed local jurisdictions to expedite EV station permitting and adopt an ordinance "that creates an expedited, streamlined permitting process for electric vehicle charging stations," but very few California jurisdictions are in compliance with this statute. Permit delays, lack of familiarity with permitting electric vehicle charging infrastructure, and inappropriate permit requirements (such as applying the same environmental rules to electric charging infrastructure as gasoline filling stations) may adversely affect construction schedules and charging services.

In some jurisdictions, codes and zoning can also hinder charging infrastructure installation. For example, some California jurisdictions prevent parking spaces reserved for charging from counting as part of the total number of parking spots required for a building. This arbitrary exclusion may prevent parking lot owners from installing charging infrastructure. Conversely, building codes that require new parking lots and structures be EV-ready by running electric lines during construction can substantially reduce future costs and deployment times. More jurisdictions implementing these codes would facilitate Electrify America reaching its goals.

Another significant challenge to the success of the investment plan is that Electrify America competitors, and its potential suppliers, contractors, tradesmen, and vendors, have a commercial interest in directing Electrify America's investments. These entities have the opportunity to advance their interests through litigation, lobbying, and regulatory forums in a manner that could disrupt, interfere, or direct the company's planned investment. This is a significant risk faced by Electrify America.

In California, a broad array of interested parties, organizations, interest groups, and officials have urged Electrify America to provide grant funding or make investment decisions addressing priorities and goals inconsistent with, or separate from, the goal of increasing the use of ZEV technology established in the Consent Decree. While Electrify America supports addressing social issues and societal needs, only ZEV investments consistent with the goals in the Consent Decree are creditable.

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<sup>11</sup> The model uses a real world electricity tariff with a demand rate of \$18/kW and assumes at least two 100 kW vehicles charge at the same time at least once in the billing period resulting in a monthly demand peak of 200 kW.

Electrify America continues to seek out investments that both increase the use of ZEV technology and address other priorities established by the State of California, but it seeks broader recognition that the goals of the Consent Decree must be prioritized for ZEV Investments.

The approval date of the Cycle 1 California ZEV Investment Plan also presented a challenge for Electrify America's work. To meet its delivery goals by the end of Cycle 1, Electrify America required significant lead time to undertake analysis, make investment decisions, negotiate contracts, and conduct other business efforts needed to make the investment a success. CARB's approval was granted in August, which prevented Electrify America from moving forward and making necessary business decisions until the second half of 2017. Electrify America urges a timely review and approval of its Cycle 2 California ZEV Investment Plan to allow continuity of business processes and decision-making and expediency of ZEV investments.

With no deployment of chargers in California in 2017, there were no reports of serious vandalism or equipment failures in the Electrify America network. However, the company will report such incidents as appropriate in future reports.



## 3. GREEN CITY INITIATIVE

### 3.1 Introduction

The goals of Electrify America's Green City Initiative (see Figure 13) are to positively impact 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.

Figure 13: Green City Initiative Goals

#### Electrify America Green City Goals and Impacts



- 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

In 2017, Electrify America developed a detailed and comprehensive evaluation methodology to select the city in which it could successfully deploy programs consistent with the Green City goals. First a city size selection criteria was applied to develop a shortlist of California cities in which innovative mobility programs could be tested. The shortlist was then scored across various sub-criteria within the categories of mobility fit (e.g. commuting patterns) and potential impact (e.g. the potential to impact disadvantaged, underserved or

low-income communities). After a detailed evaluation, Electrify America announced in August that it would launch its first Green City Initiative in Sacramento (see Figure 14).

To achieve its goals in Cycle 1, the Green City Initiative developed four investment areas and a timeline to accomplish the investments by June 30, 2019. The four pillars of investment are: (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 14: Launching the Green City Initiative in Sacramento. Speakers included: Executive Director Sacramento AQMD Alberto Ayala; CARB Executive Officer Richard Corey; Electrify America President and CEO Mark McNabb; Sacramento County Supervisor Phil Serna; Sacramento Mayor Darrell Steinberg; Congresswoman Doris Matsui (D-CA 6th); Assemblymember Kevin McCarty (AD07); Assemblymember Jim Cooper (AD09).



### 3.2 Car Sharing – Request for Proposals

In May 2017, Electrify America issued a RFI to car share and mobility technology providers with the goal of learning more about ZEV car share services, current providers, and ZEV technology. Subsequently, in Q3 of 2017, Electrify America issued an RFP. The vendor responses offered different ZEV car share models including round trip car share, free float car share, and car share programs focused exclusively on ride-hail and delivery. With the intent to provide a complementary and comprehensive variety of ZEV mobility solutions to the citizens of Sacramento, in November 2017, Electrify America initiated discussions with all vendors to define the scope of their programs, which were still ongoing at the end of the year.

### 3.3 Infrastructure

In 2017, Electrify America initiated site location research to identify purpose-placed locations in Sacramento for charging infrastructure depots to support Green City programs, including car share. These depot sites are estimated to have a minimum of four DCFC to a maximum of 10 DCFC per site. These depot sites are to be publically accessible and open 24 hours a day.

### 3.4 Exploring Other Green City Investment Opportunities

In 2017, Electrify America conducted initial research to better understand the market, manufacturing timelines, and specifications of ZEV shuttle vehicle makes and models.

With the goal of increasing the air quality benefits associated with ZEV mobility initiatives, in 2017 Electrify America engaged the Sacramento Municipal Utility District (SMUD) to begin discussing investment opportunities that would allow Electrify America to power Green City charging stations with renewable energy.

### 3.5 Disadvantaged and Low-Income Impact

The Electrify America Green City Initiative has prioritized investments that increase access to ZEV technology in low-income and disadvantaged communities in Sacramento. Potential car share vendors have been directed to focus on properties in low-income and disadvantaged communities, and these areas were prioritized when developing car share service territories. Since its launch, 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. Finally, Electrify America also strives to ensure that infrastructure investments are made in disadvantaged and low-income communities.

As the Electrify America Green City Initiative did not launch mobility services in 2017, there is nothing to report regarding spending and service-related accomplishments.

### 3.6 Problems, Concerns and Lessons Learned

Electrify America learned a great deal during 2017 as it developed the Green City programs. Most importantly, the program discovered that it has a strong, innovative, and creative partner in the Sacramento community. During the year, the City of Sacramento enacted a new EV Strategy, and it has shown leadership and organization that will be instrumental in enabling this Initiative to be a success.

Electrify America also learned from its procurement activity that the goal of offering 100% Zero Emission Vehicle fleet car share services continues to be viewed by the private sector as extraordinarily ambitious and difficult.

Based on feedback from the RFI and RFP processes, it appears certain vendors are reluctant to move forward with a 100% zero emission fleet at this time due to concerns related to limited vehicle range compared to internal combustion engine cars, operational expense, and perceived dearth of charging infrastructure.

Electrify America also learned that disruption in the car share business, especially resulting from app-based ride-hail services, represents an economic challenge to all car share businesses. In order to turn this challenge into an opportunity, Electrify America explored ride-hail-related services as part of its Green City Initiative in 2017.

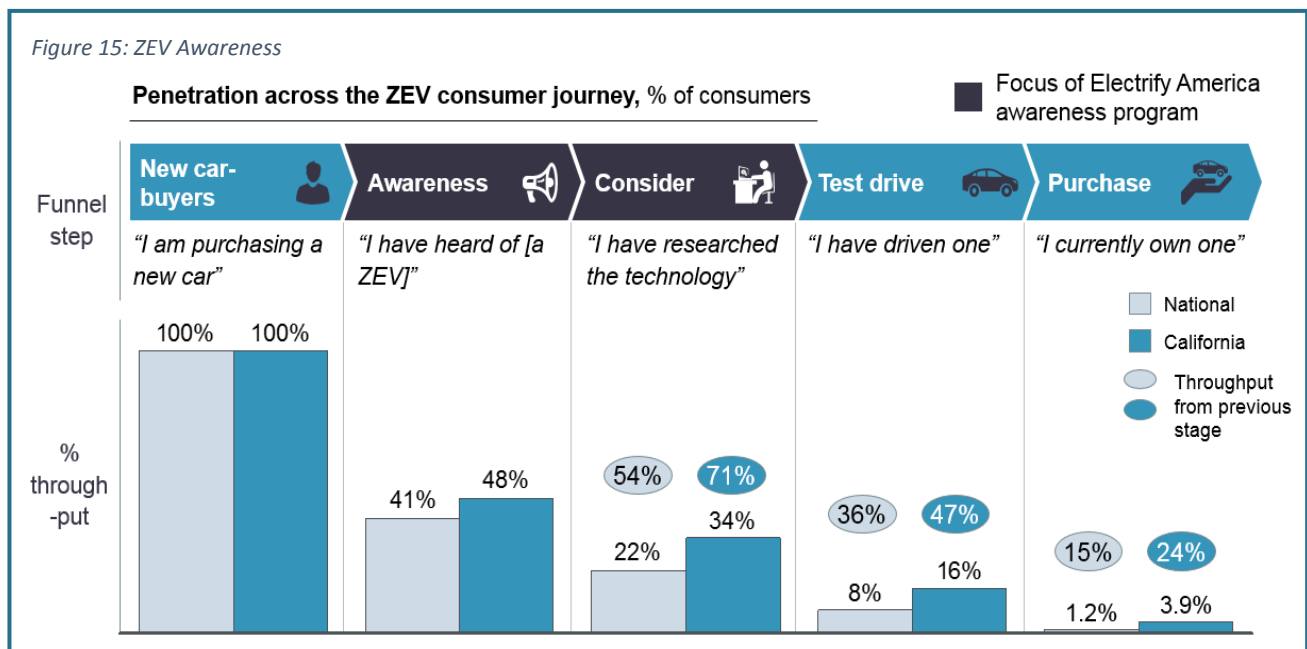
## 4. BRAND-NEUTRAL EDUCATION AND AWARENESS

### 4.1 Strategy and Message

#### 4.1.1. Creative Strategy

In 2017, Electrify America, in partnership with its California-based creative agency, Deutsch LA, Inc., focused on developing Electrify America's creative strategy that will be the basis of its education and awareness campaign.

After careful review of a November 2016 Strategic Vision Study (see Figure 15) which found only 48% of Californians are aware of ZEV vehicles, Electrify America and its agency developed a mass market campaign strategy to increase broad ZEV awareness. Implementation is planned for 2018.



The strategy relied on a segmentation analysis which split the car-buying market into five principal segments with different needs and attitudes, which can be used to tailor the messaging. In order to reach each segment, Electrify America's agency recommended implementation of the following strategy:

- Develop a campaign to improve awareness and consideration of ZEVs. The campaign will show there is a range of vehicles to choose from and convey they are fun to drive, with a slight nod to the availability of public charging stations and that they are good for the environment.
- Educate consumers on the realities of electric vehicles. The campaign will convey ZEVs as accessible to everyone and the ZEV driving experience, from a performance perspective, as comparable to a gas vehicle. With more technology, competitive pricing, and charging stations popping up every day, the barriers to entry are crumbling.

- Work to identify the target markets and develop creative content to reach them was conducted in 2017. Deutsch LA and Electrify America presented story boards and animatronics of its first TV spot to CARB and EPA staff at the end of the year (see Figure 16). Deutsch LA and Electrify America scheduled production for early 2018. Electrify America is developing a single creative campaign for both California and across the country, which leverages resources and minimizes production and creative costs. While the Cycle 1 California ZEV Investment Plan's approval delay pushed production and distribution of the national brand-neutral education and awareness program into 2018, Electrify America plans to complete the program during Cycle 1.

*Figure 16: Storyboard Presented by Deutsch LA*



Electrify America engaged with non-profit organizations (e.g. Veloz and NESCAUM) undertaking ZEV awareness efforts of their own in order to ensure that the organizations' ZEV awareness efforts and Electrify America's investments were complementary and incremental to each other. Electrify America's executives shared creative strategies with these organizations, and all parties discussed how to leverage each other's investments to the maximum effect. Opportunities for collaboration, especially in digital platforms, were identified. As a result of this dialogue and in order to demonstrate Electrify America's commitment to collaboration, in Q4 Electrify America agreed to join Veloz and 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.

#### 4.1.2. Media Strategy

The Electrify America consumer media strategy was developed by the media agency of record, PHD USA. During 2017, 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. The team developed the plan to put EVs front and center around cultural tent poles and convey the benefits and excitement of electric cars through TV, print, social, radio, online search, and out-of-home platforms.

Based on this plan and the initial Education and Awareness Program schedule laid out in both the Cycle 1 National ZEV Investment Plan and the Cycle 1 California ZEV Investment Plan, Electrify America initiated an advertising purchase in early 2017. However, upon the unexpected and significant changes to the schedule for review of the Cycle 1 California ZEV Investment Plan, Electrify America cancelled all education and awareness efforts in the second quarter of 2017, including the purchase of advertising time that had been successfully acquired by PHD USA at a discount.

#### 4.1.3. Costs and Program Spending

The 2017 fees for the creative and media services provided by Deutsch LA, Inc. and PHD USA are included in Chapter 8 regarding Creditable Costs.

#### 4.1.4. Program Outcomes

In future years, Electrify America will report on surveys and marketing metrics resulting from education programs.

### 4.2 Learn and Drive Experiential Education

In 2017, planning began for experiential education "Discover and Drive" events in California to help increase ZEV access and public exposure in 12 California markets. These events allow individuals to experience ZEVs without having to purchase a vehicle, and they feature several different models of new and used EVs, as well as a hydrogen fuel cell vehicle. The curriculum, which is offered in both English and Spanish, highlights the benefits and cost effectiveness of ZEVs in California. Late in 2017, Electrify America and its partners, Gail and Rice and Forth, initiated the development of design materials (see Figure 17) for the first of these events, which were scheduled to launch in 2018.



Figure 17: Rendering of a "Discover and Drive" Event



### 4.3 Partnerships

Electrify America received nearly 150 comments and proposals through the National Outreach Plan process on education and outreach, which made clear the extensive need for ongoing ZEV Education and Outreach efforts. Electrify America intends for its investment to leverage and reinforce these ongoing efforts. In 2017, we began conversations with a number of potential partners on educational initiatives, including Plug-in America, the Electrification Coalition, MDR (a Dunn and Bradstreet Company focusing on school education curriculum), a coalition of automotive companies and states, and Veloz.

### 4.4 Problems, Concerns, and Lesson Learned

To develop a Cycle 1 Education and Awareness Plan, we used various research studies to evaluate the current state of ZEV adoption in the USA. What the research showed and what was known from ZEV sales statistics is that a majority of the general public is not aware of ZEVs.

For Cycle 1, the Education and Awareness plan leveraged insights from third-party experts and research to help develop our marketing plan. From the research, we learned that out of all new car buyers, 59% of all Americans and 51% of Californians had not heard of an electric vehicle. Since losing over half of our target audience at the awareness phase of the purchase funnel, we developed a brand neutral campaign that will help move the awareness needle beginning in 2018.

Electrify America developed a robust plan for buying media in low-income and disadvantaged communities and includes targeted execution and tracking of TV, radio, print, and out of home media, and implementing ride and drive activities. The media Education and Awareness Campaign will go live in Q2 of 2018. The learnings from these campaigns will be described in future reporting.

## 5. INVESTMENT IN DISADVANTAGED AND LOW-INCOME COMMUNITIES

### 5.1 Investment in Disadvantaged and Low-Income Communities

Electrify America focused on planning and building capacity for ZEV Investments during 2017. Through its planning effort, Electrify America determined that a significant portion of business-driven ZEV investments will be in disadvantaged or low-income California communities.<sup>12</sup> It also determined that factors outside of the company's control (e.g., the electrical grid interconnection necessities moving planned charging stations to new locations) make it extraordinarily difficult to determine the exact percentage of ZEV investment likely to be in a disadvantaged or low-income community.

In future annual reports, Electrify America will be able to report the locations of site-specific Cycle 1 ZEV Investments, including the locations of charging stations and “discover and drive” education programs. Electrify America will share the census tracts and communities in which the investments are made, and it will distinguish whether that specific location is a disadvantaged or low-income community.

### 5.2 Strategies by which Electrify America Strives to Ensure Investment in Disadvantaged and Low-Income Communities

Electrify America implemented numerous strategies striving to ensure investment in disadvantaged and low-income communities during 2017, across all of its investment categories, including ZEV infrastructure, the Green City Initiative, and education and awareness.

#### 5.2.1. ZEV Infrastructure Investments

Under the Cycle 1 California ZEV Investment Plan, Electrify America is focusing community-based charging station investments in six beachhead communities (see Figure 18). In 2017, Electrify America brought under contract three turnkey vendors to build approximately 1,500 charging stations at more than 250 workplace and multiunit dwelling charging station sites in these communities, and each vendor is contractually-obligated to build 35% of the station sites in disadvantaged or low-income communities. Under the terms of the contracts, vendors must prioritize the site acquisition, validation, and construction of these station sites.

With regard to DC fast charging stations along high-traffic highway corridors and in the six targeted metropolitan areas, in 2017 Electrify America determined that a significant portion of its target station locations were in disadvantaged or low-income communities. However, Electrify America's station target locations frequently incorporate a stretch of highway or an area covering multiple census tracts. Electrify America tracked its progress validating leads, establishing relationships with landowners, and finalizing leases with all DC fast charging station sites throughout 2017, and tracked the percentage of these stations in disadvantaged and low-income communities as well. While a significant portion of the station sites in

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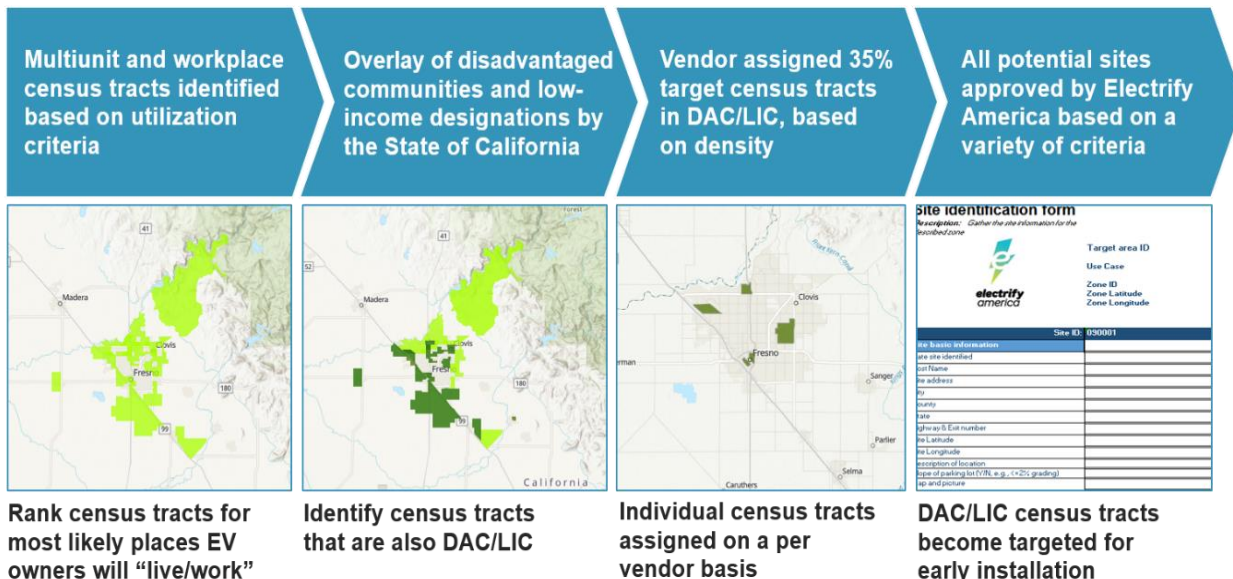
<sup>12</sup> Electrify America uses definitions for low-income and disadvantaged communities established by the State of California, which are published and mapped by CARB on its “Disadvantaged and Low-income Communities Investments” webpage: <https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/communityinvestments.htm>



California are still to be finalized, as of the date of this Report, Electrify America continues to anticipate 35% of ZEV Infrastructure Investment will be in disadvantaged or low-income communities.

Figure 18: Deployment in Low-Income and Disadvantaged Communities

**Electrify America has developed an enhanced process to deploy 35% of workplace and multiunit dwelling charging stations in low-income or disadvantaged census tracts**



### 5.2.2. Green City Initiative

As detailed in Chapter 3 and the Cycle 1 California ZEV Investment Plan, the Green City Initiative is extremely focused on providing service and access to underserved areas. When selecting a city for its first Green City investment, the opportunity to serve disadvantaged and low-income areas was one of Electrify America’s key selection criteria. Sacramento, with 59% of its census tracts classified as disadvantaged or low-income communities, was selected in part because it represented a strong opportunity to make a considerable impact in these communities.

Since kicking off the Sacramento Green City Initiative in August 2017, Electrify America has strived to ensure investment in disadvantaged and low-income communities by prioritizing serving underserved areas during procurement activity and contract negotiation, in consultation with the City of Sacramento, and in charging station siting activity.

### 5.2.3. Education and Awareness

Electrify America's brand neutral Education and Awareness program is heavily invested in increasing ZEV awareness in disadvantaged and low-income communities.

First, the "Discover and Drive" program, planned in 2017, scheduled a majority of its events in low-income or disadvantaged communities. Vendors were also required to provide curriculum, experts, and registration in both English and Spanish, and to conduct extensive outreach to disadvantaged and low-income communities in partnership with community-based organizations, legislators, city leaders, and CARB's Associate Administrator for Environmental Justice.

Electrify America also committed in 2017 to develop a \$2-\$3 million education and awareness program, in partnership with local organizations, to increase ZEV awareness specifically in low-income and disadvantaged communities, particularly focused on the economic attractiveness of ZEVs.

Finally, the media plan for the mass market ZEV awareness campaign was modified in 2017 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 explored at the end of 2017 to ensure mass market media campaigns provide Education and Awareness in disadvantaged and low-income communities.

## 6. ECONOMIC IMPACT

### 6.1 Vendors, Jobs, and Hiring

Electrify America's recent formation is directly responsible for new jobs, with a concentration of direct employees based out of the company's Reston, Virginia, headquarters. Overall, our investment in increased EV infrastructure is estimated to support up to 23,000 jobs at suppliers and vendors nationwide over ten years.<sup>13</sup> These investments will enable millions of Americans to discover the benefits of electric driving, while supporting a growing industry's workforce needs.

Electrify America's robust hiring processes allowed the company to grow substantially in 2017, and it maintains a workplace that promotes nondiscrimination and equality of opportunity in employment. The Electrify America team is comprised of industry leaders from the auto sector, real estate, business, and government, and consisted of 59 employees in 2017, including staff responsible for work in investment regions across the country.

#### 6.1.1. Creating Jobs in California

Electrify America is highly committed to ensuring the investment under the Cycle 1 California ZEV Investment Plan reflects the rich and diverse characteristics of the state and its people.

As part of this commitment, Electrify America has reached out to and met with dozens of California-based entities -- including construction contracting firms, labor organizations, EV equipment companies, public utilities, battery manufacturing firms, community-based and environmental justice organizations, OEMs, and other potential partners -- in order to share information about our Cycle 1 California ZEV Investment Plan, our procurement activities, and the unique requirements that apply to Electrify America's \$800 million ZEV Investment Commitment in California. For example, at the suggestion of CARB Chairman Mary Nichols, Electrify America's Chairman of the Board, Chief Executive Officer, Chief Operating Officer, and most senior construction manager participated in multiple meetings with Local 11 of the International Brotherhood of Electrical Workers (IBEW) and the Los Angeles County Chapter of the National Electrical Contractors Association (NECA) to discuss opportunities for collaboration, especially with regard to workforce development, training and hiring of Veterans.

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<sup>13</sup> The jobs estimates, presented in the Cycle 1 National ZEV Investment Plan and the Supplement to the Cycle 1 California ZEV Investment Plan, are based on The Council of Economic Advisors' estimate that every \$1 billion in federal highway and transit investment would support 13,000 jobs. This total count includes direct, indirect, and induced jobs.

As part of its oversight of Electrify America’s investment in Cycle 1, CARB requested that Electrify America provide information on outreach efforts, to survey its vendors regarding ownership and hiring information, and to submit periodic reports on those outcomes. To help evaluate those outreach efforts, Electrify America surveyed our 60+ vendors under contract in February 2018 to request information regarding their workforce.<sup>14</sup>

### 6.1.2. Vendor Survey

Electrify America vendors were contacted a total of four times about the survey, both by email and via personal correspondence to vendor company senior executives from Electrify America President and CEO

“ I write you today to highlight a survey my team has sent to your company requesting information about the workforce you have employed focusing on work related to Electrify America’s ZEV Investment Plan in 2017.... I would greatly appreciate it if you would be willing to prioritize the consideration of this request.... If it is feasible for you to respond, your efforts would help to ensure that our reports to regulators accurately reflect the impact of the \$2 billion investment on job creation and economic opportunity. ”

—Mark McNabb  
Source: Vendor Survey Letter

Mark McNabb. Roughly 40% of our vendors (25 in total) replied to the survey. All have allowed Electrify America to compile the responses to prepare this Annual Report, although most vendors requested the information be anonymized. It must be noted that vendors cannot require their employees to provide demographic information, and Electrify America cannot independently verify the residence information provided regarding vendor employees.

Of the overall pool of 61 vendors, nine California-based vendors replied to the survey. Amongst the total vendor pool, three certified minority-owned enterprises (MBE) and one women-owned enterprise (WBE) are under contract for work with Electrify America; one MBE vendor and the WBE vendor replied to the survey. Electrify America anticipates it will engage with veteran-owned

businesses in 2018 when site construction begins and encourages all qualified vendors to participate in the RFP and bidding processes.

Of the survey respondents’ total domestically-employed workforce, approximately 20% (9,638 employees) were employed in California. Of the total employees who performed work related to Electrify America projects in 2017, 156 vendor employees, including subcontracted personnel, resided in California. Among vendors who provided information regarding employee demographics, 17% of California-based employees resided in a disadvantaged or low-income community, while 10% of their employees self-identify as veterans. Lastly, three vendors reported having offices located in disadvantaged or low-income California communities.

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<sup>14</sup> As a voluntary request, vendors were informed that completion of the survey was not a requirement to engage in contractual business with Electrify America, LLC.

Though not reflected in the Vendor Survey, of the total committed volume of purchase orders and multi-year contracts related to all of Electrify America's investment planning to date, roughly \$21 million has been awarded to minority- and women-owned vendors.

## 6.2 Minority, Women, and Veteran Business Outreach Efforts During the RFP Process

To ensure a diversity of vendors are aware of the RFP process, Electrify America's Purchasing Team works with the VWGoA's Supplier Diversity Manager. If a vendor notes an interest in doing business with VWGoA and the vendor's capabilities may match the industries Electrify America is investing in (real estate, construction, charging hardware, electrical installers, etc.), the Supplier Diversity Manager sends vendors to the Electrify America team. The same manager also attends supplier diversity meetings and conferences and distributes contact information for the Electrify America Purchasing Team to vendors matching the company's needs. An influx of companies seeking more information about engaging with Electrify America often immediately follows one of the conferences.

Additionally, Electrify America is keeping record of any diversity supplier who seeks to do business with Electrify America and reaches out directly through the [info@electrifyamerica.com](mailto:info@electrifyamerica.com) and/or [nationaloutreach@electrifyamerica.com](mailto:nationaloutreach@electrifyamerica.com) email addresses. Electrify America informs potential vendors of any upcoming opportunities or shares how the vendor might fit within future investment plan cycles.

## 7. CORPORATE CITIZENSHIP

### 7.1 Clean Energy Access Working Group

Electrify America is an active member of the Clean Energy Access Working Group, launched by Southern California Edison and The Greenlining Institute, to develop community-centric solutions for healthy air and environment, to identify barriers to ZEV adoption in low-income and disadvantaged communities, and to explore viable solutions to these barriers. The Working Group harnesses environmental, faith-based, and community groups to inform members of the public vulnerable to the adverse effects of pollution, which include disadvantaged and low-income communities. The organization highlights the benefits of adopting clean technologies, such as electric vehicles, as pathways to improve the air quality in and around their communities.

### 7.2 50 by 50 Commission

In October 2017, the Alliance to Save Energy chartered the Commission on U.S. Transportation Sector Efficiency (the “50 by 50” Commission). Comprised of business executives, local elected officials, utility representatives, and other key stakeholders, the Commission will look at ways to reduce energy use in the United States transportation sector by 50% by 2050 while meeting future mobility needs. Electrify America is represented on the Commission by its President and CEO, Mark McNabb.

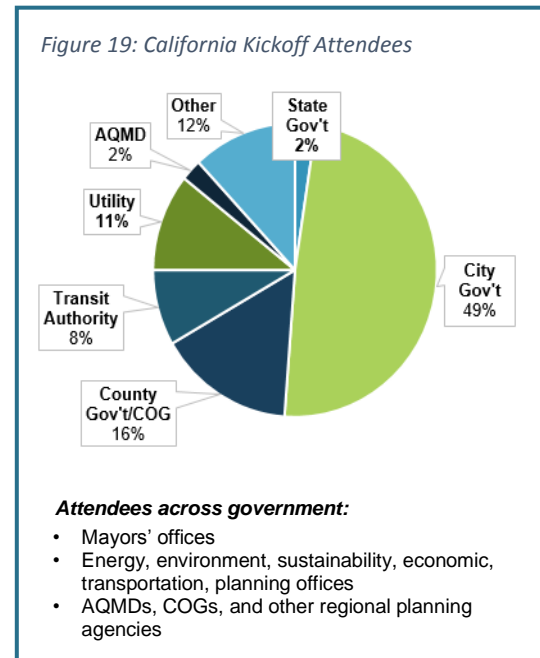
Working through six technical committees, the Commission will develop the regulatory, policy and investment pathways needed to achieve the “50 by 50” energy use reduction goal. Following an outside peer-review process, the Commission plans to publish its final report in late 2018 and will engage local, state, and national officials, key stakeholder groups, and the public to act on the recommendations.

In addition to looking at hydrogen and natural gas as alternative fuels to reduce energy consumption by 2050, electrification of the transportation sector is a focus of the Commission’s work. The future infrastructure and policy needs to support electric vehicles will be analyzed and highlighted in the Commission’s final report.

### 7.3 Kickoff Meetings

Upon approval of the California ZEV Investment Plan, Electrify America believed it was critically important to meet with government leaders, stakeholders, and utilities in the six metropolitan areas selected for charging station investment in Cycle 1 (see Figure 19). These sessions began in June 2017, nationally, and in September 2017 in California and were an opportunity for Electrify America to provide a deep dive to the various communities on its mission, methodology, and plans for infrastructure investment in each metropolitan area. Furthermore, the forums conveyed tremendous insight to the Electrify America team on how it and its community partners could best prepare for the planned investments set to take place over the course of Cycle 1.

These ‘kickoff’ sessions were also invaluable to the process of looking for potential site hosts and locations for charging installations and also helped familiarize Electrify America with what planning and permitting requirements would need to be considered in each metropolitan region. Over the course of the year, Electrify America has continued these dialogues with leaders and stakeholders in each of the six metropolitan areas and has hired a team of seasoned individuals familiar with state and local issues to further communicate Electrify America’s investment efforts to government leaders and stakeholders, especially in the Cycle 1 investment regions.



### 7.4 Advancing ZEV Awareness at Public Events

Electrify America executives and staff were asked to speak or participate in dozens of meetings, conferences, and other events regarding electric vehicles, charging technology, and ZEV mobility in 2017. Electrify America does not accept most invitations received, in order to focus resources on ZEV infrastructure and investment executions. However, Electrify America attempts to participate in events which are specifically focused on ZEV technology, which are likely to grow ZEV awareness, and which are consistent with Electrify America’s obligations and spirit of the National Outreach Plan. These forums have allowed Electrify America to increase general awareness of ZEV technology, to introduce audiences to the Cycle 1 ZEV Investment Plans, and to collaborate with a small, but ever-growing industry focused on increased ZEV adoption.

## 8. CREDITABLE COSTS

For the reporting period of October 1, 2016, through December 31, 2017, Electrify America had the following creditable costs. Creditable Costs are in accordance with the final National Creditable Cost Guidance approved by EPA in a letter dated March 21, 2017, and the California Creditable Cost Guidance approved by CARB in a letter dated August 4, 2017.

| Creditable Cost Schedule for the Reporting Period<br>(October 1, 2016 to December 31, 2017) |   |                      | Applicable to each Plan |                      |
|---|---|----------------------|-------------------------|----------------------|
|   | Category                                      | Total                | California              | National             |
|   | Personnel*                                    | 7,619,005.32         | 2,343,483.86            | 5,275,521.46         |
|   | Travel Expenses*                              | 461,969.36           | 142,094.37              | 319,874.99           |
|   | Office Rent*                                  | 221,444.16           | 68,112.67               | 153,331.49           |
|   | Company Vehicles*                             | 116,839.36           | 35,937.91               | 80,901.45            |
|   | Office fixtures and equipment*                | 65,542.25            | 20,159.75               | 45,382.50            |
|   | Insurance*                                    | -                    | -                       | -                    |
|   | Office Supplies*                              | 73,405.25            | 22,578.28               | 50,826.97            |
|   | Taxes and governmental fees*                  | 12,458.74            | 3,832.11                | 8,626.63             |
|   | IT expenses*                                  | 49,834.91            | 15,328.42               | 34,506.49            |
|   | Utilities*                                    | -                    | -                       | -                    |
|   | Service Level Agreements (SLAs)*              | 389,395.86           | 119,771.92              | 269,623.94           |
|   |   |                      |                         |                      |
|   | Goods and Services from Third Party contracts |                      | -                       | -                    |
|   | Infrastructure                                | 4,270,760.96         | 1,260,278.85            | 3,010,482.11         |
|   | Green City                                    | -                    | -                       | -                    |
|   | Education/Awareness                           | 402,811.80           | 177,237.19              | 225,574.61           |
|   | National Outreach Plan                        | 788,303.42           | 242,469.49              | 545,833.93           |
|   | Brand Campaign                                | 614,039.72           | 188,868.77              | 425,170.95           |
|   | Overhead*                                     | 1,655,179.41         | 509,106.65              | 1,146,072.76         |
| <b>Total Creditable Cost</b>  |   | <b>16,740,990.52</b> | <b>5,149,260.24</b>     | <b>11,591,730.28</b> |



**Notes to the Schedule of Creditable Costs:**

The basis of cost presentation is accrual accounting in accordance with VWAG IFRS accounting standards (reference VW IFRS Handbook – May 2017).

Under the IFRS accrual accounting basis, the costs presented include \$1,509,657 of accrued expenses included \$1,027,884 for vendor expenses not yet invoiced as of December 31, 2017, and \$481,773 for employee payroll taxes and benefits which were recognized as expenses but not yet incurred or paid.

In accordance with the National and California Creditable Cost Guidances, Cycle 1 will cover the period of January 2017 through June 2019 for the purpose of defining the 30-month period. However, costs incurred beginning in October, 2016 through December, 2016 are allowable expenses under the 2017 Annual Report. Therefore, the 2017 Annual report covers the period of October, 2016 through December, 2017 but officially counts as 12 months of the 30 month cycle.

Creditable Costs are in accordance with the published National Creditable Cost Guidance approved by EPA in a letter dated March 21, 2017, and the California Creditable Cost Guidance approved by CARB in a letter dated August 4, 2017.

\* Reported overhead in any given year will be provisionally treated as creditable, but EPA/CARB will only approve overhead costs for a particular investment cycle where the average overhead over a given 30-month cycle ends up being at or below the threshold specified in § 5.1 of Appendix C-1. The weighted average of 13 percent will be used as the overhead threshold for the first ZEV Investment cycle as a whole.

\* For 2017, the overhead costs as a percentage of total creditable costs exceeds the annual target. This is a result of the addition of staff in 2017 to complete the planning and procurement activities in advance of the investments being made. The first cycle planning demonstrates that the overhead costs in subsequent years will be below the threshold and the overall overhead costs for the Cycle is expected to be below the threshold. Therefore, we claim the overhead costs which are at and below the threshold as creditable and the overhead costs above the threshold as provisionally creditable, subject to measurement and verification at the conclusion of the first Cycle.

## 9. ATTESTATION BY THIRD-PARTY REVIEWER

Below is the letter of attestation from the third-party reviewer attesting that the costs claimed as creditable in Chapter 8 are consistent with the requirements of the Consent Decree, the Creditable Cost Guidance, and the Cycle 1 California ZEV Investment Plan.



Crowe Horwath LLP  
Independent Member Crowe Horwath International

### Independent Accountant's Report

To the Board of Directors and Management of Electrify America, LLC  
2003 Edmund Halley Drive  
Reston, Virginia 20191

We have examined the management of Electrify America, LLC's ("Electrify America") assertion that the amounts presented in the Creditable Cost Schedule for the Reporting Period ("Schedule") for the period of October 1, 2016, through December 31, 2017 ("Reporting Period") are creditable costs in accordance with Appendix C of the Partial Consent Decree dated June 28, 2016, and the approved California Creditable Cost Guidance (collectively referred to as "the Requirements"). Electrify America's management is responsible for its assertion. Our responsibility is to express an opinion on management's assertion about Electrify America's compliance with the specified requirements based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether management's assertion about compliance with the specified requirements is fairly stated, in all material respects. An examination involves performing procedures to obtain evidence about whether management's assertion is fairly stated, in all material respects. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risks of material misstatement of management's assertion, whether due to fraud or error. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

Our examination does not provide a legal determination on Electrify America's compliance with the specified requirements.

In our opinion, Electrify America's assertion that the amounts presented in the Schedule for the period of October 1, 2016, through December 31, 2017 are creditable costs in accordance with Appendix C of the Partial Consent Decree dated June 28, 2016, and the approved California Creditable Cost Guidance, is fairly stated, in all material respects.

This report is intended solely for the information and use of Electrify America, LLC, the United States Environmental Protection Agency, and the California Air Resources Board and is not intended to be and should not be used by anyone other than the specified parties.

*Crowe Horwath LLP*

Crowe Horwath LLP

Washington, D.C.  
April 26, 2018