Supplement to the California ZEV Investment Plan

Cycle 1

JUNE 29, 2017

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1 Introduction

Electrify America welcomes the opportunity to provide additional information on its plan to invest $200 million in the first 30-month cycle to support Zero Emission Vehicle (ZEV) use in California, consistent with the ZEV Investment Commitment laid out in Appendix C to the 2.0-Liter Partial Consent Decree entered by the U.S. District Court for the Northern District of California on October 25, 2016. We are proud of the research, analysis, and consultation we have conducted over the past six months to bring us to this point, and we believe this new information will help to demonstrate the substantial additional benefits that this investment will produce for Californians from all communities.

There has been some confusion about the requirements applicable to the ZEV Investment Commitment, but this Supplement will make one thing clear: Electrify America's Cycle 1 CA ZEV Investment Plan would result in substantial investment in and benefit to underserved, low-income, and disadvantaged communities that are among the State of California's priorities because investing in these communities often makes sound business sense. The Cycle 1 CA ZEV Investment Plan lays out a business investment, not a penalty payment plan, but that investment is designed to advance the goal of increased ZEV use shared by both Electrify America and California.

This supplement will also add new investments to the Cycle 1 ZEV Investment Plan. We have added the Fresno metro area as a focus for community charging investments, developed an education and outreach proposal targeted at the unique barriers to ZEV use in low-income and disadvantaged communities, and presented a new strategy to explore the use of more affordable pre-owned ZEVs.

Finally, this Supplement will provide additional information on how Electrify America intends to plan and operate. We describe ongoing work with the ZEV charging industry, utilities, local leaders, and experts to ensure that Electrify America's investments are as impactful as possible. We present more information on our approach to future planning cycles, where we will evaluate emerging ZEV technologies, such as heavy duty hydrogen fuel cell technologies, for potential investment. Finally, we provide a detailed description of how Electrify America plans to oversee and maintain its investments.

Electrify America is committed to investing in the infrastructure and education that California needs to reach 1.5 million ZEVs on the road by 2025, helping the state reduce its dependence on foreign oil, and helping consumers save money at the pump, while dramatically reducing smog and greenhouse gas emissions that endanger the health and welfare of Californians. Electrify America intends to make investments that supply a much needed benefit to all Californians, including low and moderate income residents, and those who live in disadvantaged communities.

Electrify America has begun investing in the rest of the United States and has already installed its first charging stations on the East Coast. We urge rapid consideration of this supplement, and quick approval of the Cycle 1 CA ZEV Investment Plan, so we can begin to create jobs, reduce emissions, and provide much needed services to all Californians.

2 The ZEV Investment Commitment

Starting in December 2016, Electrify America solicited proposals, recommendations, and comments from stakeholders regarding the Cycle 1 CA ZEV Investment Plan, and these comments and recommendations have significantly informed Electrify America's investment priorities. However, Electrify America is concerned that some comments submitted to CARB on the Cycle 1 CA ZEV Investment Plan demonstrate a misunderstanding regarding the requirements and intent of the ZEV Investment Commitment included in Appendix C, as well as Electrify America's plans within this space. For example, commenters expressed the view that the ZEV Investment Commitment was a punishment for pollution instead of an investment, urged CARB to require Electrify America to spend money in locations and on programs without regard to whether such spending could be economically justified as an investment, urged that CARB require investment for the purpose of benefitting specific communities, and urged that CARB direct the specific location and nature of the Electrify America investment – often without regard to the important consideration that investments be made where they are likely to be well utilized.

The court-ordered, legally binding settlements reached between California, the Federal Government, and VW will result in VW providing the State of California with $688 million, which the state can spend as it desires, on the priorities of state government, without regard to investment prerogatives. This includes $25 million that Volkswagen specifically agreed to provide to CARB for its programs to advance ZEV deployment in low-income and disadvantaged communities, as well as $423 million for the NOx Mitigation Trust, including contributions specified in both the 2.0 Liter and 3.0 Liter settlements.

VW Settlement Commitments in California

Settlement	Monetary	Injunctive
2.0 Liter Diesel	$381 million (Trust)	$800 million
3.0 Liter Diesel	$42 million (Trust) $25 million (APCF[1])	New ZEV Models/Types
Unfair and Deceptive Acts (UDAP)	$86 million (AG's office)[2]	
Penalty/Civil	$154 million (APCF[1])	
Total	State to Manage **$688 million**	Electrify America to Manage **$800 million**

1 Air Pollution Control Fund
2 $76M for legal fees, $10M to be distributed at the attorney general's discretion to state and local agencies as research grants

According to the 2.0 Liter consent decree, "the purpose of the Mitigation Trust is to fulfill the Settling Defendants' environmental mitigation obligations under the Consent Decree. All payments to and expenditures from the Mitigation Trust shall be for the sole purpose of fulfilling the Settling Defendants' environmental mitigation obligations under the Consent Decree." The Consent Decree explicitly directs that this funding should be spent – by the State and the Trustee without any influence or control by Volkswagen – on action that "mitigates the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions."

In contrast, in Appendix C, Volkswagen committed to make an $800 million investment which would advance the use of ZEV technology in the state of California, but, in the words of CARB Chairman Mary Nichols:

> *Appendix C, the ZEV investment settlement, is not either a civil penalty or mitigation. It does commit Volkswagen to investing $800 million in California on ZEV infrastructure, brand-neutral*

public awareness marketing, increasing access to ZEVs, and green city projects. So if done well, this investment will benefit Volkswagen in their new ventures into the ZEV world without a doubt. But it will also benefit equally, if not more so just based on numbers, the other firms and stakeholders that are involved in ZEV as well [CARB Hearing].

Similarly, the head of EPA's Enforcement Office testified before the U.S. House of Representatives that "In this case, this is a part of the injunctive relief; this is not a penalty…. It's an investment that VW is making in ZEV infrastructure" [*Giles*]. All parties understood that this investment would have to be guided by business needs, in order to increase the likelihood that Electrify America is able to create a sustainable network that provides services to Californians for longer than the ten years covered by the Consent Decree.

> "In this case, this is a part of the injunctive relief; **this is not a penalty…it's an investment** that VW is making in ZEV infrastructure"
>
> *-- Cynthia Giles, EPA Assistant Administrator in a hearing before the US House of Representatives*

Appendix C requires that infrastructure investments "should support and advance the use of ZEVs in the United States by addressing an existing need or supporting a reasonably anticipated need." (1.10.1)

Electrify America will be investing in disadvantaged, low-income, and underserved communities because we believe these investments are economically justified and meet an existing need, as well as being consistent with California priorities.

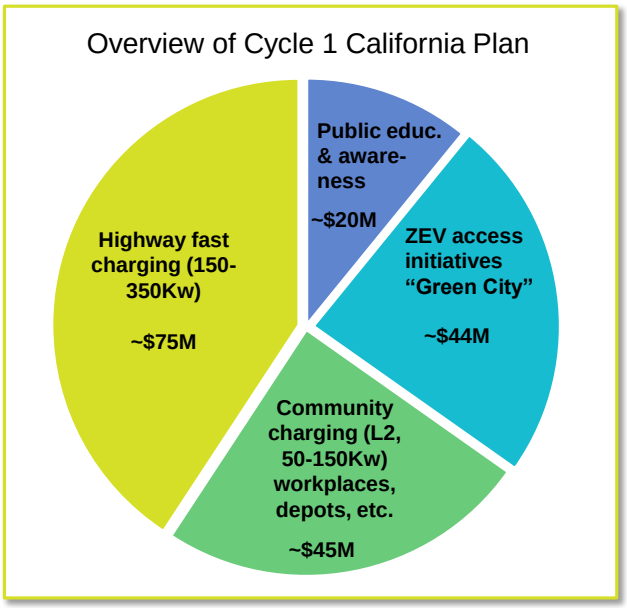
After California, the United States and Volkswagen reached agreement upon the terms of and signed the 2.0 Liter Consent Decree establishing the ZEV Investment Commitment, California's legislature passed legislation (AB 1550) requiring a portion of its own cap and trade dollars to be spent specifically within certain census tracts that the state has labelled "disadvantaged" and "low-income." Some commenters incorrectly believe that this requirement applies to Electrify America's investments presented in the Cycle 1 ZEV Investment Plan. However, the California Office of Legislative Counsel interprets that this requirement is applicable to State of California allocation of funds raised through cap and trade auctions. The requirement does not apply to all state spending, such as the California Energy Commission's spending on ZEV infrastructure authorized through 2024 under AB 8. This requirement also does not apply to private business investments in vehicle fueling infrastructure, whether the investment is in gasoline stations and CNG stations distributing a fuel regulated under cap and trade, or hydrogen stations and electric vehicle charging stations supporting ZEV technology use.[1]

[1] Under SB 350, California's investor-owned utilities were authorized to build charging equipment and pass that cost on to customers through their rate base, subject to PUC approval. In rate cases before the PUC, the utilities agreed to build 10-15 percent of stations specifically in census tracts that the state has designated as "disadvantaged," to study utilization in these areas, and to study barriers to further adoption of ZEVs. But this condition is not a statutory requirement.

3 10-Year Vision

Electrify America LLC, headquartered in Virginia, is a wholly-owned subsidiary of Volkswagen Group of America (VWGoA) created to fulfill VWGoA's ZEV Investment Commitment. Electrify America is investing $800 million over the next 10 years in zero emission vehicle (ZEV) infrastructure, education, and access (including the Green City Initiative) to support the increased use of ZEV technology in California, representing the largest commitment of its kind to date. Based on figures from the Council of Economic Advisors and U.S. Department of Transportation related to highway and transit investments, the $800 million being spent is estimated to support up to 8,500 jobs over the 10 year course of the investment *[Dept. of Transportation, Council of Economic Advisors]*.[2]

Electrify America's vision is to establish a premier ZEV charging network that is comprehensive, technologically advanced and customer-centric -- to drive ZEV adoption by reducing charging anxiety and increasing convenience, which clearly benefits Californians using ZEVs as a primary vehicle. We will build a nationwide network of workplace, community, and reliable highway chargers that are easy to find and use. Our infrastructure investment, combined with our education and access programs, will enable millions of Americans to discover the benefits of ZEV driving.



As laid out in both the Cycle 1 CA ZEV Investment Plan and the EPA-approved Cycle 1 National ZEV Investment Plan, one of Electrify America's guiding principles is to build **a long term, economically-sustainable network that provides services beyond the 10 year consent decree window**. The first cycle of investment will focus on establishing the largest nationwide network of non-proprietary charging infrastructure, deploying high power charging stations capable of refueling a ZEV at 10-20 miles of range per minute. The stations will be compatible with EVs from all major brands, not just those produced by Volkswagen Group brands. Instead, the goal is to promote universal access to the extent possible. In particular, multiple technologies (L2, DCFC) and multiple non-proprietary connectors and charging protocols (e.g., CHAdeMO, CCS) will be offered to maximize public access to Electrify America's charging infrastructure.

These stations will be designed to be interoperable with other charging networks, pending agreements with other charging providers. They will be deployed in metro areas and along high traffic corridors where ZEV charging infrastructure is projected to be most in demand, utilizing an analysis-based

[2] The Council of Economic Advisors estimates that every $1 billion in federal highway and transit investment would support 13,000 jobs. This total count includes direct, indirect, and induced jobs. The estimate here is for the number of jobs created by infrastructure and Green City investments, and it does not include jobs created through brand-neutral education and awareness or Electrify America overhead. The estimate assumes that infrastructure and Green City investments will continue to be the same percentage of total spend that they are in Cycle 1, and that ZEV investments create a similar number of job-hours per dollar spent as highway and transit investments.

approach as strongly recommended by Federal experts [*Friedman*]. Electrify America envisions its access, education, and Green City investments to expose Californians from all walks of life to the benefits and utility of ZEV technology, resulting in widespread growth and depth of awareness and interest in ZEV technology among the general public.

Electrify America strives to be an analysis driven company that utilizes data to guide investment to maximize impact, learns from past failures in the ZEV refueling industry, listens to experts (e.g. UCLA, UC Davis, National Renewable Energy Laboratory, and the National Academy of Sciences), and future-proofs its investments whenever possible.

As Electrify America acknowledged at the March 24, 2017 CARB hearing, the timeline for developing the Cycle 1 California ZEV Investment Plan established by Appendix C is very short. Electrify America solicited and considered more than 500 suggestions, proposals, and guidance submissions for its Cycle 1 ZEV Investment Plans, including some from environmental justice organizations, and it has already responded to most submissions. These recommendations, suggestions, and proposals significantly impacted the Cycle 1 ZEV Investment Plans. However, the short timeline limited Electrify America's capacity to engage with stakeholders and produced some confusion about both Electrify America's intentions and the underlying nature of the ZEV Investment Commitment. Electrify America plans to engage in an even more robust outreach effort in future planning cycles.

Electrify America has strategically and consciously not begun planning for future investment cycles, as the company believes that each investment cycle offers the opportunity to consider new information, revisit past assumptions, and consider feedback. Electrify America will update its analytical models, engage in a robust National Outreach strategy, monitor new technology and public policy developments, track evolving consumer expectations, and fully explore the merit of the full set of allowable ZEV Investments during the planning and development of each future ZEV Investment Plan.

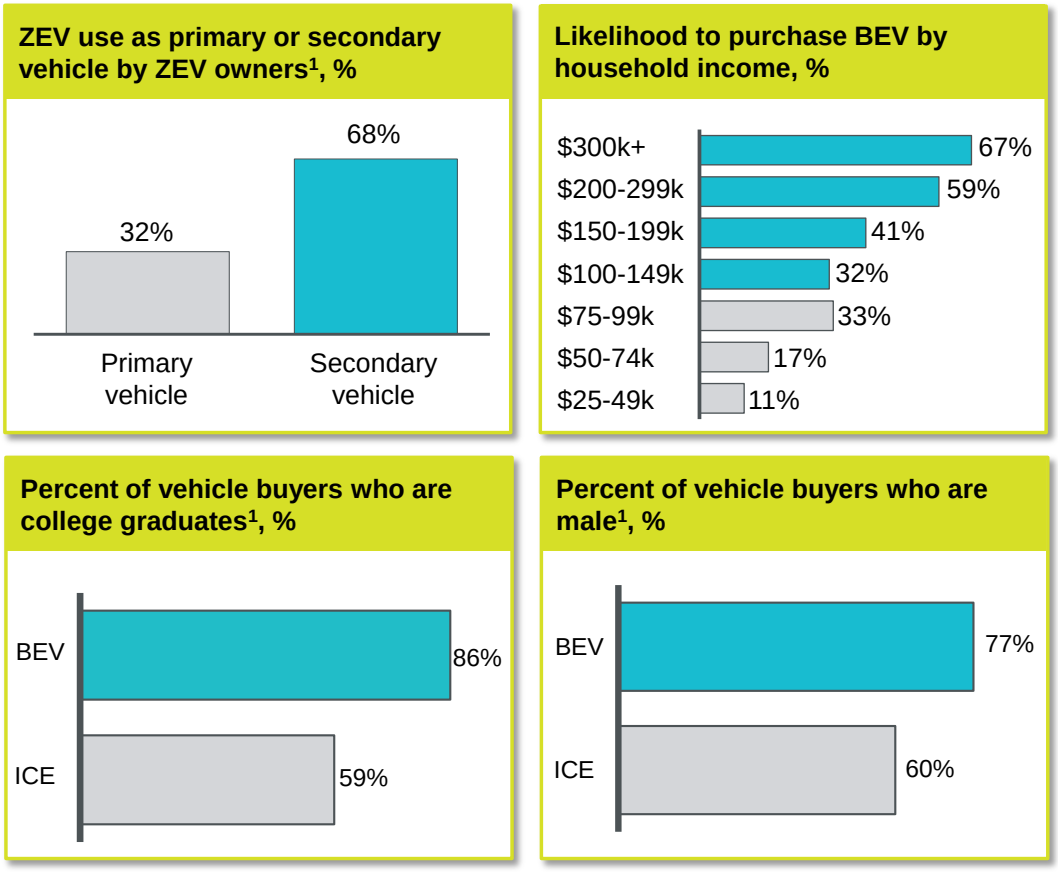
Conceptually, Electrify America envisions that it will use an analysis driven process to identify investments in Cycles 2-4, and likely investments could include adding new routes to expand the breadth of the ZEV highway charging network, reducing spacing between stations, increasing the charging density within existing metro areas, focusing investment in additional metro areas, expanding education programming, and deploying successful access programs in a second Green City. Electrify America notes that it was not able to select every metropolitan area that submitted a strong proposal, but it will likely expand its community charging investments into metro areas with supportive government policies and strong utility integration.

Electrify America's goal of an economically sustainable charging network will be easier to realize if the ZEV consumer market expands. According to the National Academy of Sciences and UCLA's Luskin Center for Innovation, current ZEV consumers are predominantly well-educated males, the majority of whom purchase a ZEV as a secondary vehicle (see *Figure 1*.) Regardless of infrastructure, ZEV cost of ownership is and will continue to be a barrier to adoption for low-income consumers, as more than 95% of ZEV vehicle models projected to be on the market between now and 2021 are projected to sell for $30,000 or more.

These demographic realities are issues that Electrify America will work to address through its brand-neutral education and awareness efforts, and active engagement with auto dealers and local stakeholders, including the environmental justice community, provides an important opportunity to

address this challenge. Electrify America is committed to collaborating with and obtaining input from environmental justice, equity, and other community-based groups serving low-income residents to help inform future investment cycles, as part of the Outreach process. Electrify America will welcome meaningful input from all stakeholders on where ZEV investments are most needed and will be most utilized.

Figure 1: Demographics of ZEV Buyers in the United States



1 US consumers only
SOURCE: National Academy of Sciences, UCLA Luskin Center, RECS 2015, Experian, HIS, McKinsey Sustainable Mobility Initiative: 2016 Electrified Vehicle Consumer Surveys

Electrify America will strive to address the needs of the market, and it will support advanced new ZEV technologies to the extent practicable for vehicle adoption. Our hope would be that at the end of the ten year period, not only has the $800 million investment in California been successfully deployed, but Electrify America is also acknowledged to be a change agent for infrastructure development in general – from its scientific and collaborative approach to its highly utilized and impactful investments. We would also like to be known as a unique company that has not only quickened the pace of securing California's goal toward emission free driving, but has encouraged and guided others to invest appropriately as well.

3.1 Differences between the Cycle 1 National and California ZEV Investment Plans

Electrify America has one vision, presented in both the EPA-approved Cycle 1 National ZEV Investment Plan and the pending Cycle 1 California ZEV Investment Plan. The plans were developed using similar methodologies and analysis. But to implement that vision, the two plans differ in a few notable ways.

First, the Cycle 1 CA ZEV Investment Plan proposes a substantial investment in providing ZEV access for those who do not own ZEVs, or cannot afford to own ZEVs, and therefore represent a key underserved population. The $44 million Green City Initiative is California-specific, while the brand-neutral Education and Awareness programs in California will include access programs, such as ride and drives. These access efforts are not currently a focus of Electrify America investment outside California.

Second, consistent with California stakeholder comments and feedback emphasizing the importance of community charging, the Cycle 1 CA ZEV Investment Plan proposes to build nearly 90 percent of its charging stations at the community-level, including at multi-unit dwellings, workplaces, retail establishments and public parking lots in California. This represents a larger proportional investment at the community level than Electrify America plans to make in metro areas outside of California. Electrify America's community charging proposal for California has a larger budget ($45 million) than community charging at the national level ($40 million), and it is to be spent in approximately half as many metro areas. When combined with Green City Initiative investments, $89 million will be spent at the community level in California during Cycle 1.

4 Additional Information on the Cycle 1 California ZEV Investment Plan

In its February 17th guidance letter to Electrify America, CARB "urged" Electrify America to prioritize investment in "**disadvantaged, low-income, underserved, and disproportionately impacted communities**." Appendix C did not include a goal of benefiting any specific community or type of community. However, at the March 24th hearing, Electrify America agreed to study how the investments proposed in the Cycle 1 ZEV Investment Plan impacted the communities prioritized by CARB in its February letter.

Electrify America notes that CARB prioritized "underserved" communities in its guidance, and that Appendix C requires the ZEV Investment Plan to describe how some, but not all, of the investments will "increase access in underserved areas" (3.3.2.1).[3] Throughout this document, Electrify America has used the definitions of disadvantaged and low-income communities, and census tract designations, published by CARB this year [*CARB 2017*].

After considerable study and review, Electrify America concludes that the analysis-driven and economically-justified business investments laid out in its Cycle 1 CA ZEV Investment Plan represent a potentially substantial benefit to underserved, disadvantaged, and low-income communities urged by CARB for prioritization. We appreciate the opportunity to explain how.

4.1 A High-speed Highway Network

A statewide, $75 million network of fast charging stations will serve all of California's ZEV drivers, but it is especially important to those who want or need their ZEV to serve as a primary vehicle that meets all transportation needs.

The California highway network was designed to place high-speed charging stations along the long-distance routes which are anticipated to be most underserved and which link prioritized metro areas, in order to form a cohesive statewide network. At a high level, ZEV traffic was estimated along every major route in California, 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 most underserved and in greatest need for new infrastructure investment.

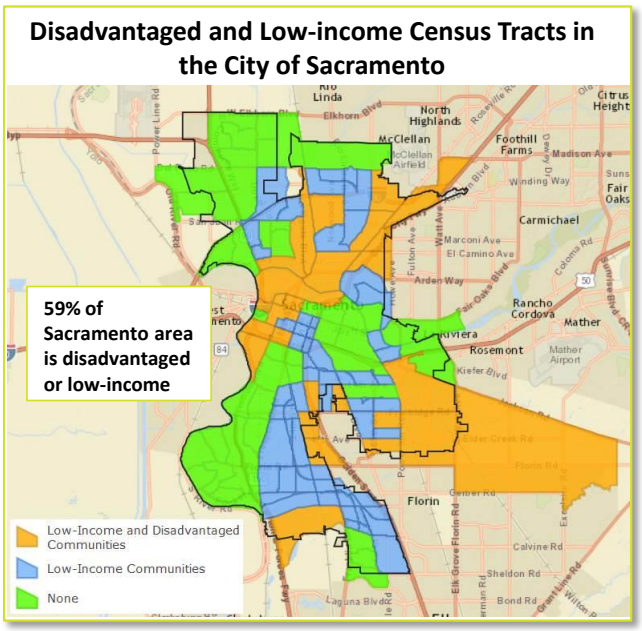
In addition to serving the most underserved routes, a network of super-fast charging ZEV stations will increase the utility of ZEVs, allowing low and moderate income Californians to choose a ZEV as their one and only vehicle. Extensive research by UCLA shows that "highly-educated, high-income households working in management have a higher propensity to purchase BEVs" today, and that 68 percent of consumers purchase a ZEV as a secondary vehicle. These trends are seen even with regard to lower cost ZEVs, in part because lower and moderate income Californians require that their one vehicle meet all of their needs [*NAS, Sheldon-UCLA*]. As a result of the Electrify America network of fast charging stations, low and moderate income Californians will be able to drive ZEVs to all areas of the state with fewer

[3] "Underserved" is not defined in Appendix C. Electrify America has used the Oxford English Dictionary definition: "inadequately provided with a service or facility."

range restrictions from a lack of infrastructure, stopping at stations that can potentially add up to 20 miles of driving range per minute of charging. They will be able to reach Mono Lake or Joshua Tree for the weekend, or visit family across the whole state, from Imperial Valley to Eureka, or from San Diego to Lake Tahoe.

Thus, the full highway network will be to the benefit of ZEV drivers who live in disadvantaged or low-income communities. In addition, our initial analysis shows that more than 50 percent of these stations will be in a census tract that CARB designated in 2017 as disadvantaged or low-income [*CARB*]. Many of these highway station sites may move slightly within the same geographic area during the site validation and acquisition phase as a result of cost, convenience, utility service, or other considerations, but the initial target sites indicate that the highway network will likely represent a very substantial investment in communities prioritized by CARB.

4.2 Building a Green City for ZEV Access



The $44 million Green City Initiative will be launched in Sacramento, pending approval of the Cycle 1 CA ZEV Investment Plan. It will provide access to ZEVs to those who do not own ZEVs, or cannot afford to own ZEVs, and therefore represent a key underserved population. Sacramento has already initiated a car sharing service that serves low-income communities as a result of a CARB grant, and Electrify America intends to build on that work. University of California research shows that "carsharing programs that feature PHVs and EVs are providing access to those who would otherwise not have access to such vehicles," and "in light of current model availability and EV costs, these programs provide exposure to a demographic that otherwise has a lower propensity to own such vehicles. The result of this access is an improved impression of ZEVs and a stronger affinity toward ZEV technology" [*Shaheen*]. All of this investment will be available to and increase ZEV access for residents of disadvantaged, underserved, and low-income communities prioritized in the CARB guidance.

A Green City Initiative in the City of Sacramento will result in considerable investment in CARB priority communities. Sacramento Mayor Darrell Steinberg noted in a letter to CARB that Sacramento is "one of the most racially, ethnically, and culturally diverse cities in the nation" and that "a disproportionate share of Sacramento's residents live in disadvantaged communities" [*Steinberg*]. The specific locations of Green City investments will be spread across Sacramento and will likely move on a daily basis. But Electrify America's geospatial analysis, presented in the map above, shows that approximately 59

percent of the Sacramento census tracts in the target geography for Green City Initiative investments are designated as disadvantaged or low-income by California.

4.3 Community Charging

The National Academy of Sciences' 2015 comprehensive report on overcoming barriers to ZEV deployment endorsed a strategy focused on specific geographies or "beachheads," stating that a strong strategy to increase ZEV adoption "logically would focus on key geographic regions or regional corridors where momentum has already been established; infrastructure is more readily available; [and] word-of-mouth between neighbors, friends, and co-workers can occur more readily" [*NAS, 2015*]. Through the National Outreach Plan process, Electrify America received approximately 50 proposals from cities for concentrated ZEV infrastructure investments in specific metropolitan areas, and many additional recommendations from states (e.g. Virginia), local governments and other stakeholders expressing support for concentrating investment in metropolitan areas.

Under the consent decree, Electrify America is required in the ZEV Investment Plan to describe how some of its investments will "increase access in underserved areas." The Cycle 1 CA ZEV Investment Plan originally proposed to concentrate a $45 million Metro Area Investment in five "beachhead" metros. We are proposing to expand this to a sixth metro area in this Supplement.

To select these metro areas, Electrify America conducted an analysis to determine which communities would likely be most underserved through 2020. Specifically, Electrify America analyzed ZEV sales projections from Navigant Research and infrastructure data from the National Renewable Energy Laboratory (NREL) to project the amount of infrastructure investment needed in each major metropolitan area. By establishing the anticipated gap between demand for charging infrastructure and the current supply of charging capacity, Electrify America was able to identify the communities projected to be in most need of additional charging services. Electrify America's Cycle 1 CA ZEV Investment Plan directs investment at the most underserved metro areas as determined by this analysis, and therefore we believe that all of the metro investments will be consistent with Appendix C and the prioritization guidance provided by CARB.

Using this methodology, five underserved California metros were identified: (1) Los Angeles-Long Beach-Anaheim, (2) Sacramento-Roseville-Arden Arcade, (3) San Diego-Carlsbad-San Marcos, (4) San Francisco-Oakland-Hayward, and (5) San Jose-Sunnyvale-Santa Clara.

Metropolitan Areas Prioritized for Community Charging Investment

Based on new information provided through the public comment process and ongoing refinement of the gap analysis, Electrify America intends to add the Fresno metro area as a new target for community charging in Cycle 1. Analysis of Fresno's inclusion is ongoing, so this section presents the beachhead communities as originally proposed in the Cycle 1 CA ZEV Investment Plan. Electrify America notes that other metro areas will be considered for investment in future cycles, and Electrify America will continue to refine its methodology as the industry develops.

Within each metro area, the Cycle 1 CA ZEV Investment Plan proposes to focus investment across five use cases: workplaces, multi-unit dwellings, retail, charging depots, and municipal lots and garages. These were selected in part based on the degree to which they meet an underserved need.

For example, Electrify America has identified residents of multi-unit dwellings (MUD) as a seriously underserved population. About 25 percent of U.S. households live in multifamily residential complexes. But according to the National Academy of Sciences, "Although 61 percent of single-family houses had access to charging, only 27 percent of multifamily dwellings had parking spaces with access to charging…. Multifamily residential complexes can face many challenges in installing PEV charging equipment; some are similar to a typical commercial building, and others are unique to multifamily dwellings" [*NAS, 2015*]. Similarly, a report by the UCLA Luskin Center for the California Energy Commission on the barriers to plug-in vehicle adoption in the South Bay area of Los Angeles concluded that "the MUD barrier is likely serving as a significant constraint to PEV adoption" due to high installation costs. The report recommends substantially greater investment in MUD charging equipment, especially grouped to increase cost effectiveness, which is Electrify America's intention [*Turek*].

In addition, UCLA researchers found that the creation of charging depots (a second metro use case proposed in the Cycle 1 CA ZEV Investment Plan) in neighborhoods where the MUD inventory is too old, upgrades are too costly, or where building owners are unwilling to invest, is another important strategy to meet the underserved residents of MUDs. The researchers write that a "strategy of building or encouraging EVSE development in proximity to clusters of MUD properties may prove successful to the continued development of the EV market" [*Turek*].

Within each selected metro area, Electrify America is engaging in a rigorous, analytical process consistent with the Department of Energy's guiding principle that infrastructure investments should be analysis-driven and focused on investment that will most substantially increase ZEV deployment [*Friedman*]. Electrify America is using analytics to identify census tracts for each use case 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 and a high daytime population will be prioritized for the workplace charging investment.

Through this process, Electrify America has prioritized 1,500+ census tracts for community charging investments, and more than 35 percent of these census tracts are identified by CARB as disadvantaged or low-income communities. Electrify America has budgeted to construct community level charging stations at approximately 350 sites in the Cycle 1 California ZEV Investment Plan, so Electrify America does not have the budget to invest in all 1,500+ census tracts prioritized for stations in Cycle 1. Electrify America notes that it will likely endeavor to continue investment in prioritized census tracts during future investment cycles, if the analysis continues to support investment in such areas. Furthermore, Electrify America continues to refine and add new data to its model based on internal and external feedback, as well as updated forecasts.

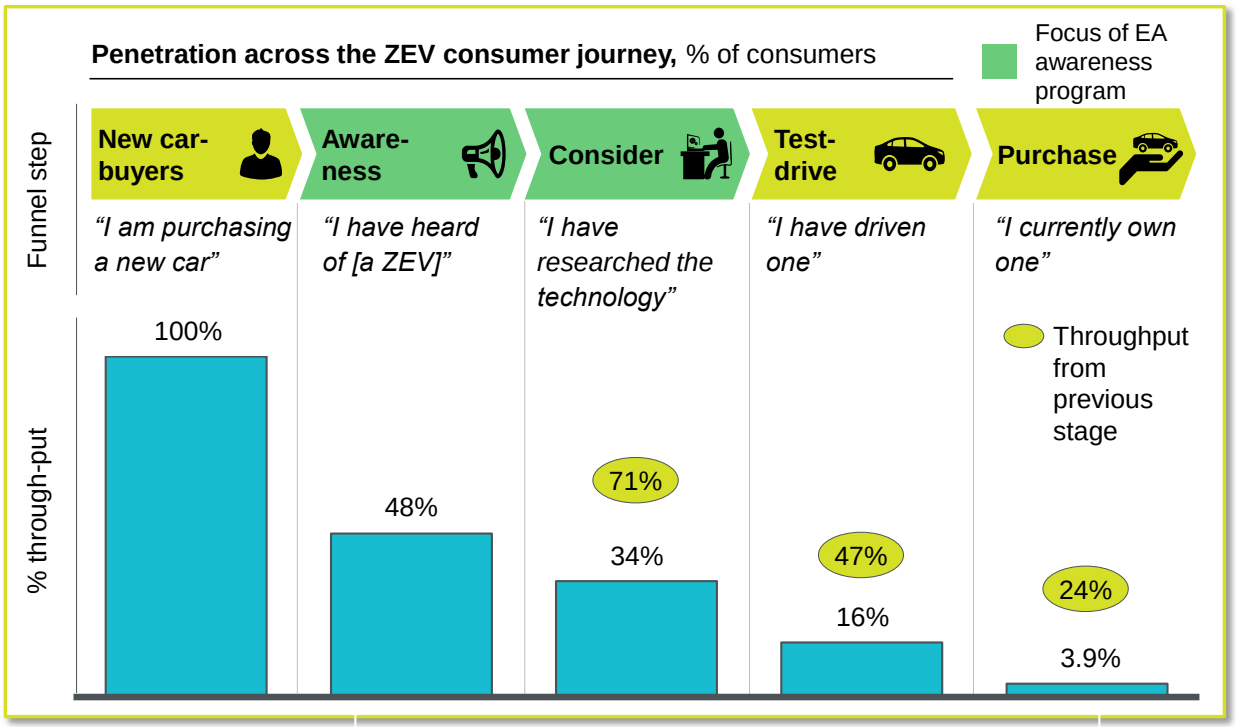
To identify the 350 sites, prioritized census tracts will serve as guidance to suppliers and in-house site acquisition teams for "boots-on-the-ground" and more qualitative follow-up due diligence. This process is on hold pending approval of the Cycle 1 CA ZEV Investment Plan, so Electrify America does not know which prioritized census tracts will host stations at this time. Wherever possible, Electrify America will also work with local stakeholders and utilities to further identify site opportunities and accelerate installation in favorable areas.

The bottom line is that Electrify America's metro investment will be made in what objective analysis found to be the most underserved metro areas of California, and the use case investments will serve underserved populations within those communities. Furthermore, while no station sites have been selected to date, Electrify America's analysis-driven process to identify census tracts for targeted investment include a significant percentage of census tracts identified by CARB as disadvantaged or low-income communities.

4.4 Brand-Neutral Public Education and Outreach Activities

Electrify America plans to invest approximately $20 million in the first cycle in education and outreach programs in California. As shown in Figure 2, recent survey data showed that only 48 percent of vehicle buyers in California have heard of ZEVs, which is only slightly higher than the 41 percent of comparable consumers nationwide, despite the vast number of initiatives in California to promote ZEV technology. The investment during the first 12 months, as we note in the Cycle 1 CA ZEV Investment Plan, will focus on broadly educating the public on the fun to drive, utility and other benefits of driving ZEVs through mass, digital, and experiential marketing. This is intended to be a broad awareness and education effort targeted at all consumers, including those who live in disadvantaged, low-income or underserved areas.

Figure 2: The ZEV Consumer Journey in California



SOURCE: Strategic Vision NVES 2016

In months 13-22, we will explore more targeted awareness initiatives, as well as potential education partnerships. We 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 its investment to leverage and reinforce these ongoing efforts. We have already begun 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), and a coalition of automotive companies and states. In partnership with other groups, Electrify America will also develop materials on the benefits of ZEVs, conduct ride-and-drive events, and further build public awareness of ZEVs through proven awareness strategies.

These efforts will be deployed across the state – not just in metro areas targeted for infrastructure investment – and they will include activities in areas that the state classifies as disadvantaged or low-income. They will also be in a language other than English where appropriate.

4.5 ZEV Access Initiatives

Numerous governments and other stakeholders proposed ZEV access programs in their comments to Electrify America, which are currently under review. Experiential initiatives like ride-and-drive events are being considered to help increase ZEV access and exposure for as many Californians as possible,

including in underserved, disadvantaged, and low-income areas. Electrify America plans to fund these investments from budgets currently allocated to education and outreach activities. According to the U.S. Department of Energy, experiential learning activities are one of the most effective ways to drive ZEV adoption because they allow consumers to discover that ZEVs are fun to drive and have other benefits relative to cars with internal combustion engines [*DOE Workplace Charging Challenge*]. The purpose of these activities is to increase the public's awareness of and access to ZEVs and allow them to experience ZEVs without having to purchase a vehicle.

4.6 Commitment to Workforce Development and Supplier Diversity

Electrify America plans to hire an initial workforce of just over 70 employees, with most personnel focused on real estate procurement, operations, and hardware/network, which are the critical functions for charging infrastructure deployment. This team intends to leverage outside vendors, including real estate firms, EVSE installers, equipment and construction suppliers, site host partners, advertising agencies, and car sharing service providers in order to cost-efficiently complete Electrify America's investments at an unprecedented scale and speed. Most of these suppliers will be U.S.-based firms. As such, Electrify America's $250M investment in infrastructure implementation and maintenance across the nation, and the additional $120M investment in California, is expected to create significant opportunity for the existing American charging industry and employment in many American communities.

Electrify America is committed to ensuring that investment under its ZEV Investment Commitment reflects the rich and diverse characteristics of California and its people. To meet this commitment, Electrify America staff plans to conduct outreach efforts and activities to: ensure potential new suppliers and contractors are aware of RFP opportunities resulting from the ZEV Investment Commitment; to encourage greater participation by underrepresented groups including certified veteran-, women-, and minority-owned businesses; and to assist applicants in understanding how to participate in the RPF process.

As an initial step, bidders to Electrify America's construction RFP are being asked to include information regarding certified minority-, women-, and veteran-owned business enterprise participation in base bids and options. Electrify America plans to request that contractors report on participation while under contract, and Electrify America will share this information with CARB as appropriate.

4.7 Summary of Investments Consistent with CARB Priorities

Electrify America has looked carefully at how the investments proposed in the Cycle 1 CA ZEV Investment Plan will impact the disadvantaged, low-income, and underserved communities identified as priorities in CARB's February 17 guidance.

As explained in this section, Electrify America anticipates (but does not guarantee) that more than 35 percent of the ZEV Investments proposed in the Cycle 1 CA ZEV Investment Plan will be in census tracts

that CARB specified as low-income or disadvantaged in April 2017. Electrify America anticipates that significant investment in these low-income and disadvantaged communities will occur across all four major investment categories, which include the High-speed Highway Charging Network, Community Charging, the Green City Initiative, and Education and Awareness programs.

Electrify America also anticipates that substantial Cycle 1 investment will be in or will serve "underserved areas" explicitly referenced in Appendix C and CARB's guidance.

Electrify America must highlight that each potential secured station site requires consideration of at least five other locations in the same vicinity based on real estate validation and contract realities typical of charging infrastructure deployment. Therefore, we will need to evaluate multiple sites concurrently, often across multiple census tracts, which helps explain why Electrify America has only identified priority census tracts for metro station investments at this time. Site selection is paused until such time that an approved plan by CARB will enable specific site host discussions and contracts. It should be noted that the site validation and acquisition phase may dictate that sites move as a result of cost, permitting, utility service, or other considerations.

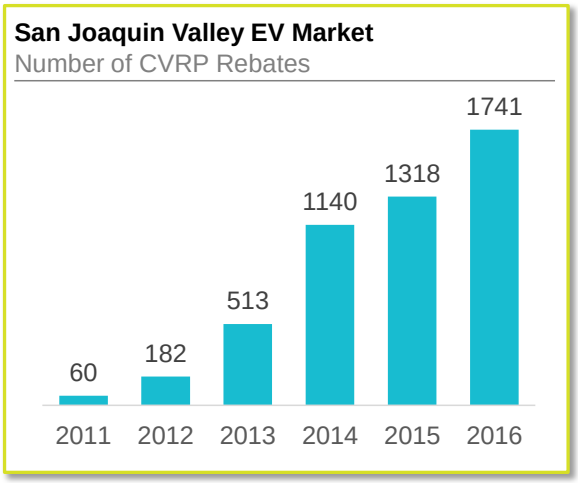
5 Additional Steps to Support Disadvantaged, Low-income, and Underserved Communities

Electrify America has listened closely to the requests and suggestions of California stakeholders throughout multiple comment periods, and we believe that the explanation in Section 4 will address most of their concerns with regard to underserved, disadvantaged, and low-income communities. Electrify America believes that investments proposed in the Cycle 1 CA ZEV Investment Plan would be consistent with the requirements of Appendix C, and would be of substantial benefit to the communities prioritized by CARB for investment in its February guidance letter.

To further accommodate the suggestions and requests and further demonstrate its common commitment to California's priorities and values, Electrify America supplements its Cycle 1 CA ZEV Investment Plan in the following ways.

5.1 Expanding Community Charging to Include the Fresno Metro Area

Electrify America intends to add the Fresno metro area as a sixth beachhead for community charging investment. Electrify America's analysis, described in Section 4, did not project that Fresno would be one of the five most underserved metro areas of California in 2020 in terms of ZEV infrastructure. However, new data included in the San Joaquin Valley Electric Vehicle Partnership's letter to CARB shows growth in ZEV deployment within the Central Valley, suggesting that the Fresno area may be a more rapidly emerging ZEV market than previous analysis has shown [*Williams*]. Electrify America plans to reallocate resources from within the existing Cycle 1 Community Charging budget to accommodate the addition of the Fresno metro area.



SOURCE: San Joaquin Valley EV Partnership CARB Comment

5.2 Focus Education in CARB-prioritized Communities

CARB's recent report, Overcoming Barriers to Clean Transportation Access for Low-Income Residents, recommends "funding to expand clean transportation and mobility option education and outreach efforts and opportunities in low-income and disadvantaged communities to increase awareness." In response to this recommendation, Electrify America intends to modify its Cycle 1 Brand-neutral Education and Awareness spending plan to commit $2-3 million – a very substantial portion of its education partnerships budget -- to seek partnerships with entities with particular access and credibility within California's disadvantaged and low-income communities. Electrify America will explore through

these partnerships a culturally appropriate awareness campaign (in a language other than English where appropriate) which could incorporate the activities recommended by CARB's report, including providing educational curricula for kindergarten through 12th grade students, increasing knowledge of ridesharing (including carpooling) and car sharing options that utilize zero-emission vehicles, and conducting ride and drive and other access activities.

Electrify America will also explore, through these partnerships, communicating the economic appeal of adopting ZEV technology in low-income California communities as a result of current ZEV incentives. As a result of new incentives, the ZEV mandate, and Federal tax incentives, a ZEV is in some cases the most affordable new car available for low and moderate income consumers in California [*Auto Alliance*].[4] However, CARB data shows that more than a fifth of ZEV buyers in California fail to claim the state rebates to which they are entitled due to lack of awareness and auto dealer assistance, and interest in owning a ZEV is concentrated in upper income brackets as shown in Figure *1* [*Williams 2015*]. The gap between the perceived and actual affordability of ZEVs appears to be considerable, and it presents a very meaningful opportunity for an effective, targeted education effort.

5.3 Increasing Access to a High Speed Highway Charging Network

Electrify America's high speed charging network is designed to provide statewide fast refueling for ZEVs, substantially increasing the utility of ZEVs used as primary vehicles. All Californians who drive a ZEV will be able to benefit from this network, refueling their vehicles whenever necessary using any one of numerous easy payment options, including credit cards. However, Electrify America plans to take the following additional steps to increase access to the highway network for those from low-income and disadvantaged communities.

Improve Access for Used Cars: Electrify America has approached several vehicle manufacturers to explore partnerships through which the vehicle manufactures would provide access to Electrify America's charging network as part of the cost of purchasing or leasing a new ZEV. But Electrify America plans to study whether such a partnership could extend to the purchase or lease of pre-owned ZEVs, as we are aware that moderate and low-income Californians are more likely to purchase or lease pre-owned vehicles. Such a partnership could be established with either vehicle manufactures, who frequently sell ZEVs after they come off leases, or with large independent retailers of pre-owned vehicles. Electrify America is committed to exploring this as a means to increase ZEV infrastructure access for moderate and low-income Californians.

Complement California Programs: To complement California ZEV programs, such as CARB's programs under the Charge Ahead California Initiative authorized in SB 1275 (de León) and the Initiative's program to help moderate and low-income Californians to scrap their old vehicle and replace it with a ZEV,

[4] According to Auto Alliance analysis, in February 2017, low-income Californians could lease multiple models of BEV at no or even negative net cost. Specifically, the Alliance found that the total cost of three year leases advertised in California for five models of BEV, including monthly and down payments, was nearly the same as California's incentive for low-income residents to lease a ZEV. For low-income residents of the San Joaquin Valley, where an additional incentive is available, the Alliance concluded that low-income residents would actually make more than $1,000 by signing an advertised three year lease of any of five BEV models [*Auto Alliance*].

Electrify America will work with CARB and other stakeholders to study ways to facilitate easy access to its ZEV Investments among program participants.

5.4 Participating in Efforts to Identify Market Barriers

Barriers to entry for low and moderate income Californians are not well understood. Investor-owned utilities have begun a process to study these barriers and offer solutions, while CARB has separately published a draft report, titled Overcoming Barriers to Clean Transportation Access for Low-Income Residents, on this topic on which it is soliciting feedback. Additional ideas, insight, and research are still required. Electrify America is committed to being an active participant in the ongoing efforts within California to identify market barriers and advise California on public policy solutions.

6 Planning, Transparency, and Coordination

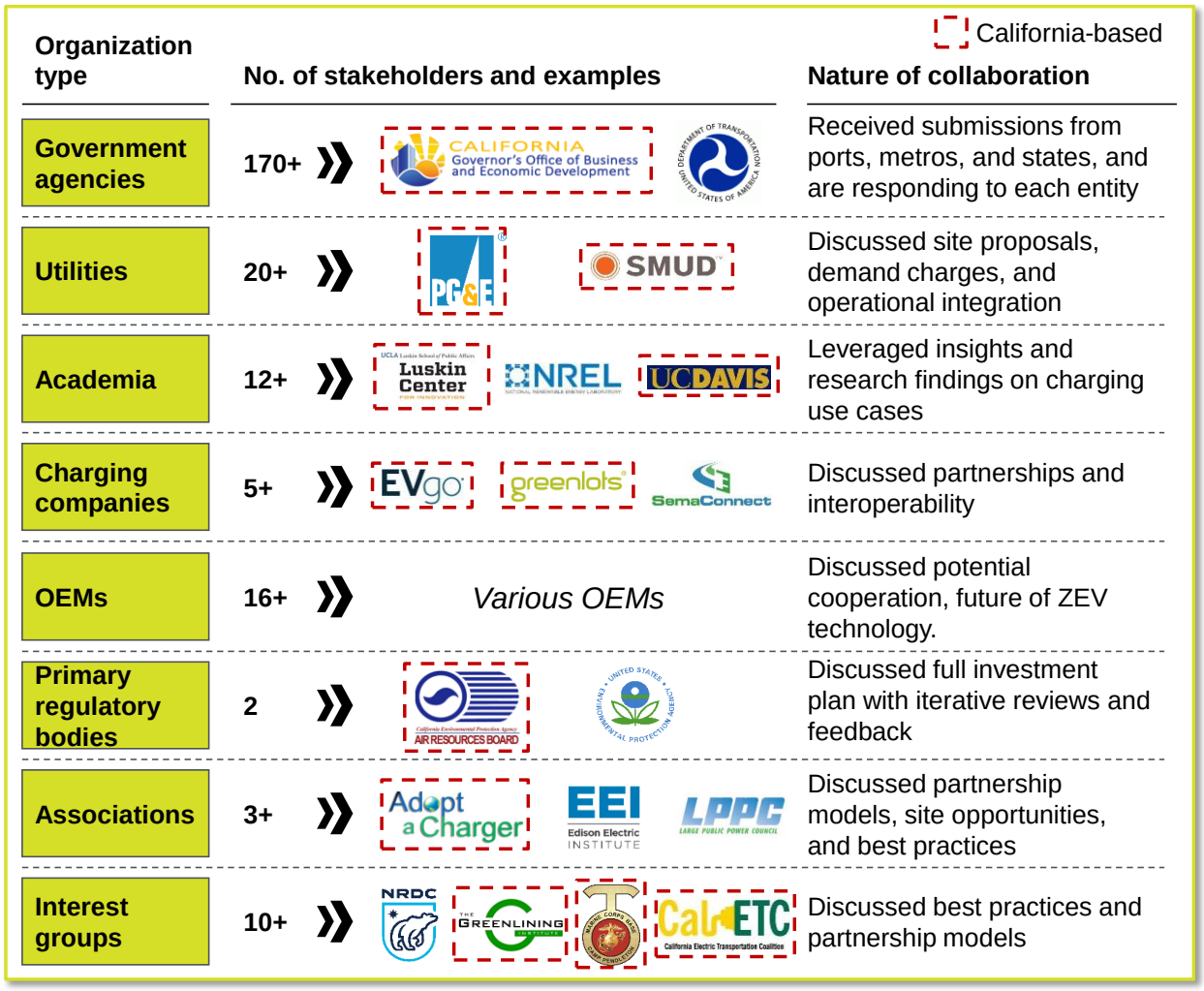
6.1 Partnerships

Throughout its development of the Cycle 1 CA ZEV Investment Plan, Electrify America consulted knowledgeable experts in the ZEV field with extensive automobile manufacturing, utility, infrastructure, policy, communications, technology, and consumer advocacy backgrounds.

Electrify America met with both the U.S. Department of Transportation and the U.S. Department of Energy, who provided detailed information on the Federal government's Smart City effort, their process for designating EV charging corridors along highways under the FAST Act, lessons learned from the EV Project and the Workplace Charging Challenge, and ongoing work to support deployment of non-proprietary DC fast charging at power levels up to 350 kW. Additionally, most vehicle manufacturers were consulted, and we collected their feedback about a new, comprehensive charging network that would best suit their future ZEV customers.

Electrify America has conducted robust and frequent discussions with California organizations and stakeholders in the charging infrastructure ecosystem including government, utility and other organizations. These discussions were set up to not only to explain Electrify America's objectives and approach, but also to establish relationships for future dialogue aimed at helping Electrify America improve its charging infrastructure planning and deployment (with an emphasis on speeding processes such as permitting, easements, and other typical factors that slow down charging infrastructure installations). These conversations also helped identify other charging infrastructure programs or private/public funding opportunities that could be leveraged with Electrify America's investments to further increase the net funding in infrastructure. Example organizations we have had discussions with (beginning in 2016) include: The California Energy Commission, California Public Utilities Commission, California Go Biz, CalTrans, CalETC, NRDC, and the Greenlining Institute. Electrify America plans to continue these discussions during the first and subsequent cycles to better ensure continuity and value for our deployments in California. At the same time, Electrify America hopes to work with the California entity responsible for managing the $423 million that the state may spend from the NOx Mitigation Trust, once California designates the state agency that will serve as its beneficiary under Appendix D, to avoid potential duplication or non-complementary infrastructure investments.

Figure 3: Electrify America Stakeholder Engagement



In the summer of 2016, Electrify America began engaging in conversations with California's major utilities, including Southern California Edison, Pacific Gas and Electric, San Diego Gas and Electric, L.A. Department of Water and Power, and Sacramento Municipal Utility District. A key early goal of the utility discussions was to better understand potential approaches for collaboration, co-investment, site planning, speedier utility service and complementing existing utility-led workplace charging programs.

Electrify America discussed with investor-owned utilities their investments in Level 2 charging, which were recently approved by the CPUC. The investor-owned utilities will invest primarily in the workplace and multi-unit dwelling use cases, and they will not build DC fast charging stations. The dialogue confirmed that Electrify America and investor-owned utilities plan to invest in different but complementary workplace and MUD projects during Cycle 1, using a different selection methodology.

Going forward, we plan to continue these discussions and seek opportunities for cooperation, especially as utilities explore investment in DC fast charging. As CARB staff noted at the March 24th hearing, Electrify America's charging infrastructure investment "is expected to satisfy less than 10 percent of California's estimated demand based on the State's goal to have enough infrastructure in the state to

support 1 million ZEVs by 2020" [*CARB Hearing*]. Electrify America believes this demonstrates that strong investments from other entities like utilities will be needed for the foreseeable future. Electrify America hopes to help inspire, galvanize and guide these incremental investments on top of our own.

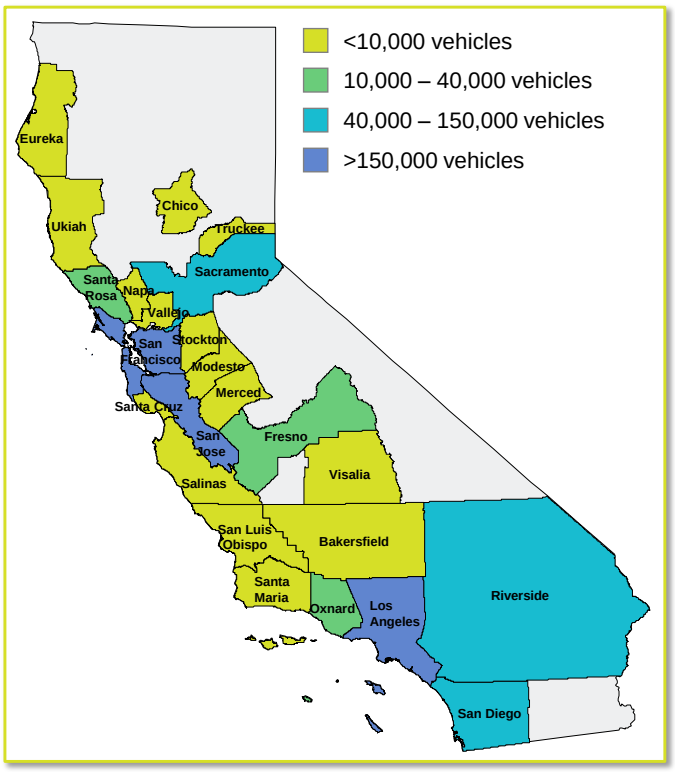
Electrify America has also had numerous conversations with Adopt-A-Charger, led by Kitty Adams, to understand and potentially deploy Level 2 charging infrastructure in California state parks, which would be consistent with goals set forth by the Governor's office.

Finally, in terms of understanding existing charging infrastructure, Electrify America intends for its investments to supplement other investments. Electrify America has been using data on existing infrastructure from NREL, and we have now secured a license to use Recargo's Plugshare "Data on Demand" service to ensure we have nearly real time access to infrastructure as it is deployed. For near future planned investments, Electrify America plans to secure this information from regular information exchanges with the CEC and other government agencies to segregate charging infrastructure investments for more complementary results.

6.2 Additional Information on Infrastructure Planning Processes

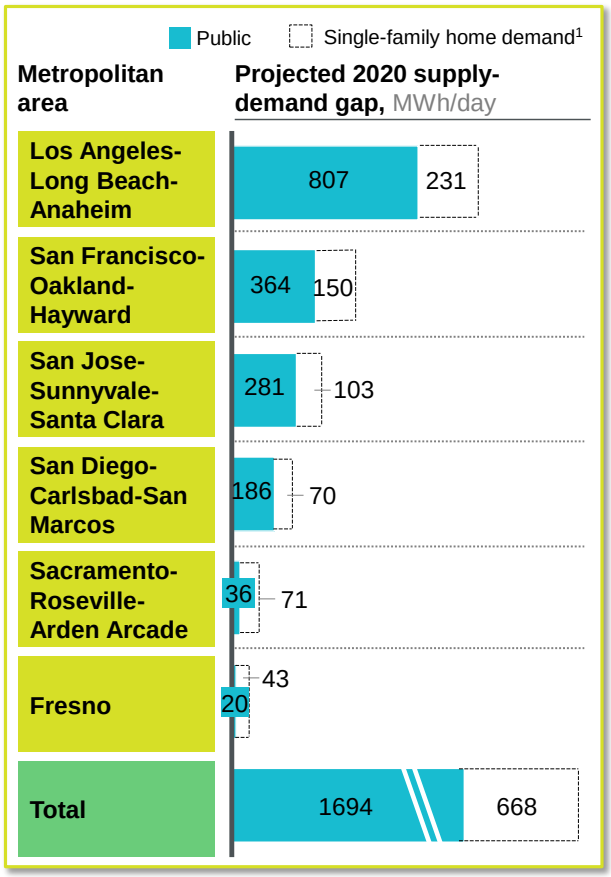
Electrify America developed a new proprietary methodology to identify the California metro areas expected to be most underserved and in need of charging infrastructure associated with forecasted EV sales growth and fleet size by 2020 (see Figure 4). This new approach, in simple terms, derives the daily charging power needs (expressed in megawatt hours/day) for ZEV drivers outside their residence, assuming that 78 percent of ZEV charging needs will be met at home, as NREL research shows. Outside the home could include workplace, community charging in a variety of shopping, restaurant and other parking venues, as well as on highways. The charging power gap used assumptions including the battery size, charging power and range efficiency (assumed 3.5 miles per kWh) for the expected future fleet of new EVs, including current EV units in operation. We then consulted the DOE's alternative fuel database and Plugshare data to understand current Level 1, Level 2 and

Figure 4: Projected Deployment of Electric Vehicles in 2020



SOURCE: Navigant, 2016

Figure 5: Supply-Demand Gap Analysis Results



DCFC infrastructure available today to calculate the power gap needed to solve the 22 percent of EV driver charging needs that are expected to be met outside the home.

Our methodology found -- in the six California metros selected for Cycle 1 investment -- that nearly 1,700 megawatt hours per day would be needed to bridge the gap between charging infrastructure in the ground today and what would be needed by 2020 (see Figure 5). For reference, one megawatt powers about 650 homes, so this power gap is substantial to say the least. This implies that considerable other private and public investment in charging infrastructure will be needed to reduce this charging power gap because Electrify America is targeting to reduce the gap by only four to eight percent by 2020 with its own investments.

The gap analysis results will be a key factor in determining the investment budget range per metro area. In the case of California, Electrify America intends to allocate its community charging budget across metro areas in an attempt to reduce four to eight percent of the gap in each metro area. Electrify America has set a minimum budget for any metro area selected for community charging investment in Cycle 1 nationally at $1 million -- an amount informed by infrastructure expert interviews in the Fall of 2016 on the investment level necessary to create the "beachhead" effect. Electrify America anticipates that all six of California's community charging metro areas will receive investment substantially above the minimum investment level in Cycle 1.

6.3 Additional Information on the Green Cities Selection Process

In order to determine the location of the initial Green City investments, Electrify America developed a detailed and comprehensive evaluation methodology. A full description of this methodology has been shared with CARB as confidential business information, but at a high level, Electrify America evaluated California cities across three primary dimensions: city size, mobility fit, and potential for impact.

Electrify America selected city size, mobility fit, and potential for impact as the criteria with the assumption that ZEV car sharing would be one of the primary initiatives developed over the first and second 30-month investment cycles. They were intended to ensure that the Green City initiatives were being developed 1) in a sizeable market where the initiatives could be scaled up over time, 2) in a market where there was demand for car sharing initiatives, suitable commute patterns, and a gap

between supply of existing car sharing fleets and potential demand, and 3) in a market which had a high potential for impact, based on the potential of increasing ZEV access to disadvantaged and low-income communities, the likelihood that the initiatives would be developed in an ecosystem supportive of ZEV mobility, and the ability of the investments in that city to influence broader awareness in California, nationally, and more broadly.

In analyzing California metro areas, city size selection criteria was first applied in order to develop a shortlist of California cities. The shortlist was then scored across various sub-criteria (detailed below) within the categories of mobility fit and potential impact and weighted based on relative impact of each sub-criteria (see Figure *6*). A brief description of these sub-criteria is provided as follows:

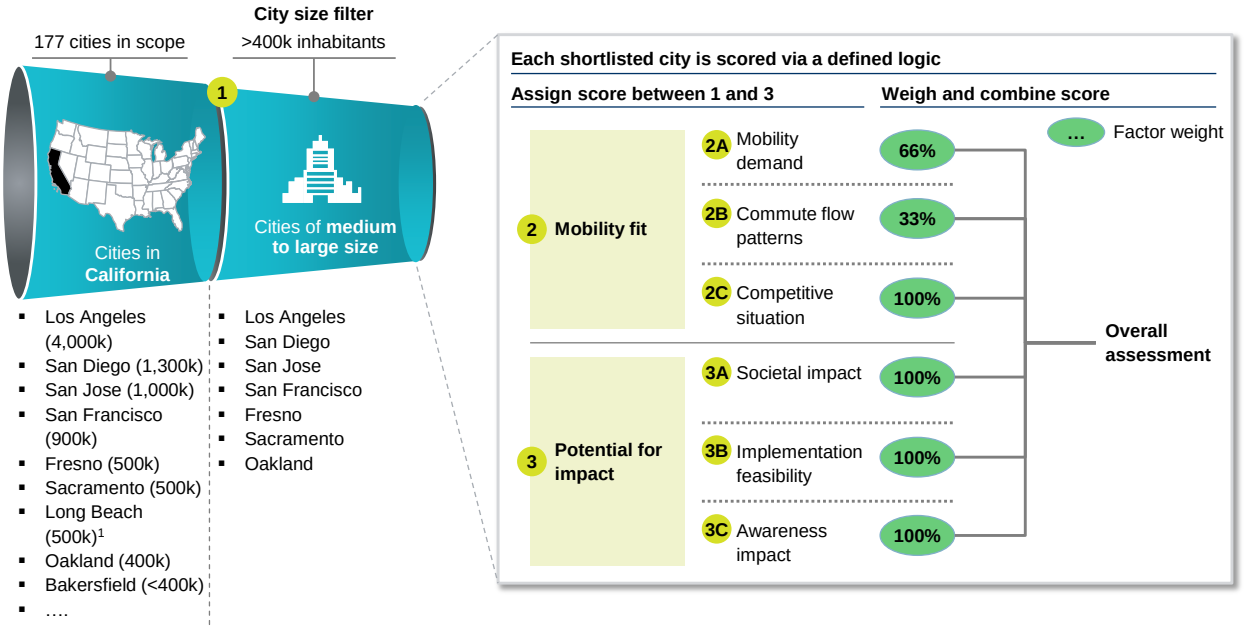
Mobility fit

- Mobility demand: success factors for car sharing at a zip-code level based on commute lengths and demographics, among other factors
- Commute flow patterns: identification of connected centers of high transportation flows within a metro area to allow for targeting of spend in areas where Green City services are most likely to be utilized
- Competitive situation: existing car sharing companies to determine extent of existing competition

Potential for impact

- Societal impact: presence of disadvantaged and low-income communities in each potential metro area, as ZEV car sharing and other Green City initiatives could positively impact these communities, particularly from an air quality perspective
- Implementation feasibility: existing infrastructure and ZEV incentives supporting the implementation and acceptance of ZEV mobility offerings
- Awareness impact: relevance in influencing decision-making on mobility concepts and public perception of ZEVs

Figure 6: Overview of Green City Selection Methodology



1 Direct border with Los Angeles, thus counted as greater Los Angeles

6.4 Response to Comments

As part of the National Outreach Plan required in Appendix C, Electrify America solicited proposals and recommendations from outside parties to help substantiate and improve its Cycle 1 ZEV Investment Plans. Electrify America notified stakeholders identified in Appendix C (i.e., states, municipal governments, federally-recognized Tribes, and federal agencies) of the proposal submission and comment period, which was initially opened from December 9, 2016 to January 14, 2017. Electrify America allowed a 3-week grace period and considered submissions received through February 6, 2017, when developing its Cycle 1 CA ZEV Investment Plan. A total of 484 submissions were received as of February 6, 2017. Electrify America has also kept the comment page active, and it continues to receive and review submissions relevant to plan implementation. In addition, CARB chose to hold two comment periods on its own, and also collected comments on the Cycle 1 ZEV Investment Plan at a public hearing. Electrify America has extensively considered the feedback from these processes when developing both the Cycle 1 CA ZEV Investment Plan and this Supplement.

The submissions and comments provided Electrify America with information on the level of public support for this plan's investment strategies, and it also provided specific project ideas. A selection of submissions includes the following:

- **Broad ZEV Industry Support:** During comments in California, the Cycle 1 CA ZEV Investment plan was strongly endorsed by almost every charging industry company, by the state's largest utility companies, and by the state's largest automaker. Many of these commenters also emphasized the enormous opportunity that this investment would create, and the urgency of rapid approval.

- **Charging Infrastructure Needs:** The overwhelming majority of comments supported and, in many cases prioritized, ZEV charging infrastructure deployment investments. This was true across the full spectrum of commenters, from comprehensive proposals from state governments to requests from small towns and 'mom-and-pop' stores for a single charger. Commenters highlighted that charging infrastructure investments meet an identified need and a recognized ZEV deployment barrier. Consistent with this feedback, Electrify America is maximizing infrastructure investment in this plan in ways consistent with the requirements of Appendix C.
- **DC Fast Charging along Highway Corridors:** More than 100 comments and proposals focused on the importance of and execution of a highway network, and nine states and numerous other submissions explicitly urged Electrify America to prioritize investment in highway charging as its highest investment priority. For example, the Sierra Club prioritized DC fast charging corridors, explaining that they would have the effect of "reducing range anxiety, raising public awareness of EVs, and spurring electric vehicle adoption outside of densely populated urban areas." Electrify America proposes to make its largest investment in this area, consistent with this recommendation.
- **Community Charging:** Comments from California-based entities expressed greater support for community-level charging than we heard from national stakeholders. As noted in section 3.1, this feedback validated the merit of greater community-level investment in California than elsewhere in the nation.
- **Local Support for the Green City Initiative:** Comments submitted to CARB demonstrated great local interest in the Green City Initiative. Written submissions to CARB demonstrated that the Sacramento Community has rallied behind the opportunity to host the Green City, which validates Electrify America's decision to select Sacramento as the first Green City, pending approval of Cycle 1 CA ZEV Investment Plan. There was also tremendous support for the selection of Los Angeles as a Green City expressed at the CARB hearing in Riverside. As a result, in May, Electrify America executives met with the Los Angeles Mayor's staff, local utilities, and members of the Green City coalition in Los Angeles. Electrify America presented the substantial level of community charging investment planned for the Los Angeles region, producing productive dialogue and excitement about the potential for investment in the Los Angeles region.
- **Support for Central Valley Investment**: Many commenters in California advocated for ZEV investments in California's Central Valley. The Cycle 1 CA ZEV Investment Plan proposed considerable investment along both the Interstate 5 and CA Highway 99 throughout the Valley, but the data driven feedback received has prompted Electrify America to propose new investment in Fresno, as detailed in Section 5.3.
- **Coordinated Planning with State and Regional Government**: Many submissions, especially from state agencies and regional coordinating entities like NESCAUM, emphasized the benefits of coordinating infrastructure investments with ongoing state activities. For example, CalTrans submitted a consolidated proposal to increase charging infrastructure through workplace charging, park-and-ride transit hub charging, and charging along key interstate corridors. These submissions have highlighted the value of coordinating with state agencies, and Electrify America has already initiated coordination as part of its outreach effort.

- **Workplace Charging**: Electrify America received more than 150 submissions supporting investment in workplace charging, which is an additional validation of the importance of this use case. Many Government submissions, such as the proposal from California's Department of General Services, proposed hundreds of workplace charging units at specific sites. Electrify America will closely consider sites identified in each target metro area.
- **Multifamily Dwellings**: More than 50 submissions proposed investment in the multifamily and residential use case, affirming the importance of this use case.
- **Destination Charging**: A small number of commenters suggested that Electrify America invest in destination charging at hotels, parks, and other long dwell time locations. This use case will receive more consideration from Electrify America given that some proposals had this focus, including some compelling programs like Adopt-a-Charger.
- **Airports**: The Federal Aviation Administration and submissions from 20 airports proposed charging infrastructure investment at airports. These proposals are being evaluated and may be a further extension of longer dwell time parking applications in future investment cycles, if utilization challenges can be addressed.
- **Environmental Justice:** The concerns, ideas, and recommendations put forward by the environmental justice community in their comments to CARB and to Electrify America received a thorough review. Their concerns are addressed in detail throughout Section 4, while many of their ideas and recommendations are embraced in Section 3 and Section 5.
- **Other Recommendations Out of Scope**: Electrify America also received comments and proposals that it is not able to act upon in Cycle 1, either due to restrictions on investment in Appendix C, or because the investments would be outside of this investment plan's focus on foundational infrastructure to serve ZEV driver needs. For example, some cities and other entities requested that Electrify America supply them with ZEVs of various size classes, which would not qualify as an investment. Additional proposals also recommended Electrify America invest in Level 1 charging, bicycle programs, and research projects, which are not creditable cost investments under Appendix C. While these submissions did not fit within the scope or timetable of the Cycle 1 ZEV Investment Plan, promising ZEV initiatives will be considered in later investment cycles.

6.5 Regular Updates on Implementation

Electrify America is ready and motivated to begin implementing its Cycle 1 CA ZEV Investment Plan, as it is now doing with the Cycle 1 National ZEV Investment Plan. Electrify America is developing and will track a robust set of metrics to not only monitor charger utilization and uptime once the network is operational, but actual operational performance through our deployment process; these performance criteria could include site acquisition performance (# of sites needed to achieve one successful sub-lease) through construction scheduling and spending versus budget allocation. We also plan to survey and study consumers -- not only existing ZEV drivers, but those considering ZEVs as well -- to understand Electrify America's progress in achieving infrastructure awareness and, ideally, incremental ZEV sales resulting from purpose-placed charging infrastructure and awareness and education campaigns. At six month intervals, we plan to share results of these metrics with CARB. Electrify America will also provide

a short (3-4 page) written status summary at that meeting that does not contain private customer data or confidential business information and can be shared publically. We are committed to making Annual and Final Reports available on our website as agreed to in section 3.6 of Appendix C.

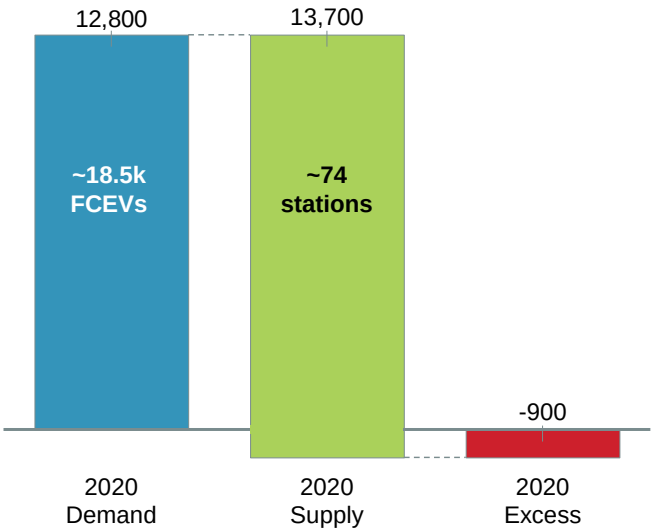
7 Hydrogen Fuel Cell Vehicle Technology

In its May 24, 2017 letter to Electrify America, CARB requested that Electrify America provide additional information about its intention to make education and infrastructure investments regarding hydrogen fuel cell vehicles in the Cycle 1 CA ZEV Investment Plan and in future planning cycles.

Electrify America plans to incorporate information on attributes of electric drive vehicles powered by both batteries and hydrogen fuel cells in its Cycle 1 California-specific Brand-neutral Public Education and Outreach activities, as CARB has requested.[5]

As detailed above and in the Cycle 1 CA ZEV Investment Plan, Electrify America is focusing its ZEV refueling infrastructure investments on filling the supply-demand gap to serve the greatest need for ZEV refueling. As of April 2016, 331 hydrogen FCEVs were registered with the California Department of Motor Vehicles [*CEC*]. California's Energy Commission and Air Resources Board jointly project that fuel cell electric vehicle (FCEV) population will grow to 18,465 vehicles in 2020 [*CEC & CARB*]. To fuel these vehicles, AB 8 requires California Energy Commission to allocate $20 million annually to build hydrogen fueling stations, expanding fueling supply.[6]

2020 FCEV demand and supply in California
Kg of hydrogen per day



"[Our projection] confirms that **today's statewide network is capable of dispensing more than enough fuel to satisfy the demand from FCEVs** for the next few years."

Joint Agency Staff Report, CARB & CEC
January 2017

According to the State's own 2017 projections, California will not have a supply-demand gap for hydrogen refueling in 2020 – in fact it will have an excess of approximately seven percent.

By comparison, the projected supply-demand gap for plug-in electric vehicles (PEVs) through 2020 is more than 90 percent. There are a quarter of a million PEVs on California's roads today, and CEC projects sales of PEVs to be approximately 200,000 annually over the next five years. Therefore, the state's own projections demonstrate that the supply-demand gap for PEV refueling infrastructure is

[5] The May 24, 2017 letter from CARB equates "brand neutral" with "technology-neutral." Brand neutral is defined in Appendix C as materials that "do not feature or favor Settling Defendants' vehicles or services." It does not reference technology neutrality. Electrify America will incorporate fuel cell technology in its brand-neutral public education efforts where appropriate.

[6] AB 8 directs the California Energy Commission to allocate $20 million per year for hydrogen refueling infrastructure "until there are at least 100 publically available hydrogen-fueling stations" or until CARB and CEC determine that "the private sector is establishing publicly available hydrogen-fueling stations without the need for government support."

projected to grow rapidly, in comparison to a hydrogen fueling infrastructure gap that has not yet emerged.

As stated in Section 3, Electrify America will update its analytical models, engage in a robust National Outreach strategy, and fully explore the merit of all allowable ZEV Investments during the planning and development of each future ZEV Investment Plan. As part of that process, Electrify America will reevaluate the degree to which investment in hydrogen refueling infrastructure would address an existing need, would be economically viable and consistent with Electrify America's goals, and would be incremental and additional to existing State of California commitments. Electrify America will meet with hydrogen station vendors as part of that process, and it will revisit the supply-demand gap analysis.

Electrify America recognizes the potential promise in heavy duty hydrogen projects. Some of the most promising opportunities are currently in the research, development and demonstration stages at this time, but Electrify America will continue an open dialogue with the industry to explore whether investment can be economically justified in future investment cycles.

Finally, Electrify America notes that CARB's May 24, 2017 letter asks Electrify America to discuss the potential for siting plazas that allow for both charging and hydrogen fueling stations. CARB did not ask Electrify America to prioritize such plazas for investment in its February 2017 guidance document, nor did it communicate this request in our April 27th meeting. However, while Electrify America does not see clear synergies gained by co-hosting a high-speed charging station and hydrogen refueling station at the same site, Electrify America will happily engage in dialogue with any hydrogen refueling station site host in California to explore whether the site would be an appropriate customer-centric, accessible, and purpose-placed charging station.

8 Costs and Other Data Requests

8.1 Creditable Costs

Creditable cost estimates are broken down by the twelve required categories for the entire 30-month spending cycle within the confidential Cycle 1 CA ZEV Investment Plan submitted on March 8, 2017. Electrify America's detailed, multi-year budget is confidential business information. Its public release could be highly detrimental to Electrify America, as it could provide other ZEV charging infrastructure companies with a competitive advantage and offer vendors information that could be exploited in contract negotiations.

8.2 Electrify America's Business Model

Like other private businesses, Electrify America considers business and revenue models to be critical pieces of confidential business information. Business and revenue models must also be flexible as economic requirements dictate. Broadly speaking, Electrify America intends to own and operate most of its ZEV infrastructure investments, while some investments will be owned, operated, and maintained by third parties under contract with Electrify America for services rendered. As pricing is a function of market conditions and Electrify America's costs, Electrify America would need to gain more information on the cost of its infrastructure through the RFP process before it could set pricing structures. With regard to preferential pricing or access concerns, Electrify America intends to create customer-centric charging stations accessible to all EV drivers, not just Volkswagen drivers. As stated in the Cycle 1 CA ZEV Investment Plan:

> *The ZEV infrastructure is intended for, and compatible with ZEV technologies that are not limited to ones supported by VW group brands. Instead, the goal is to promote universal access to the extent possible. In particular, multiple technologies (L2, DCFC) and multiple non-proprietary connectors and charging protocols (e.g., CHAdeMO, CCS) will be offered to maximize public access to Electrify America's charging infrastructure.*

8.3 Data Sharing

Electrify America fully intends to share data with CARB regarding cost, utilization, and performance of ZEV investments, consistent with the content and timing of reporting requirements established in Section 3.6 of Appendix C. Electrify America will work with CARB to ensure that private customer data and confidential business information are not released in these reports.

8.4 Monitoring and Maintenance of ZEV Investments

Electrify America is implementing a custom-built program management tool to monitor program status and inform decision making, based on industry best practices. The tool will integrate a number of Electrify America software systems to allow for efficient reporting and performance tracking. This includes the integration of customer relationship management (CRM) systems, geospatial tools, project scheduling, construction management and the network service solution that manages charger operations. The tool will track targeted metrics such as site selection progress, permit duration, construction schedule and timelines, on-time charger delivery, hardware vendor performance, charger utilization, and committed spend amounts.

To ensure ZEV infrastructure investments are maintained at levels that provide high customer satisfaction, Electrify America will manage network monitoring, call center and on-going maintenance.

8.4.1 Network Monitoring

As part of Electrify America's software integration efforts, a Request for Proposal (RFP) process is currently underway for the selection of a network services solution. This solution will support charger commissioning through operation and maintenance. Specifically, the network operator will be able to view a variety of functions and outputs to streamline analysis of charger use and customer behavior using a dashboard, network alerts and ticket management best practices.

Electrify America is planning a robust monitoring and control network system to monitor asset uptime and ticket resolution time. The network will be designed to support the most effective business process to minimize network or asset issues and to ensure the information is available to meet strict Service Level Agreements (SLAs) with internal and external partners to meet metrics, reduce errors, and providing swift issue resolution.

8.4.2 Call Center

Electrify America will also establish a multi-language call center to support end user contacts via phone, email, and chat. The call center will respond to consumers inquiring about or utilizing Electrify America products and services, and will initiate follow-up communication where appropriate. The call center will be evaluated based on performance metrics, such as (for

Figure 7: Call Center Metrics (Not Exhaustive)

Metric type	Customer service example metrics tracked
Charger issues	▪ Customer call volume (#) ▪ Issues by cause (%) ▪ Resolution rate (%) ▪ Goodwill debits ($)
Customer service quality	▪ Speed of answer (minutes) ▪ Call handle time (minutes) ▪ Service level (%) ▪ Customer call center satisfaction (1-10)

example) calls answered or abandoned, speed to answer, talk time, hold and wait time, time to resolve call (post initial call), handling time, queue metrics, and chat and email metrics.

8.5 On-going Maintenance

Charger availability is critical to both customer satisfaction and Electrify America's success, and Electrify America plans to develop tools and methodology to ensure high levels of network and charger uptime. Electrify America will be able to rapidly react, review and respond to issues as they occur by utilizing tools, including diagnostic tools with resolution paths. But Electrify America also plans to be proactive, with active system monitoring and management of issues, severity classification of issues, and selection and initiation of the appropriate service level to ensure minimal downtime. Additionally, the call center agents will be empowered with the capabilities to resolve and report on the majority of customer issues, often on a single call.

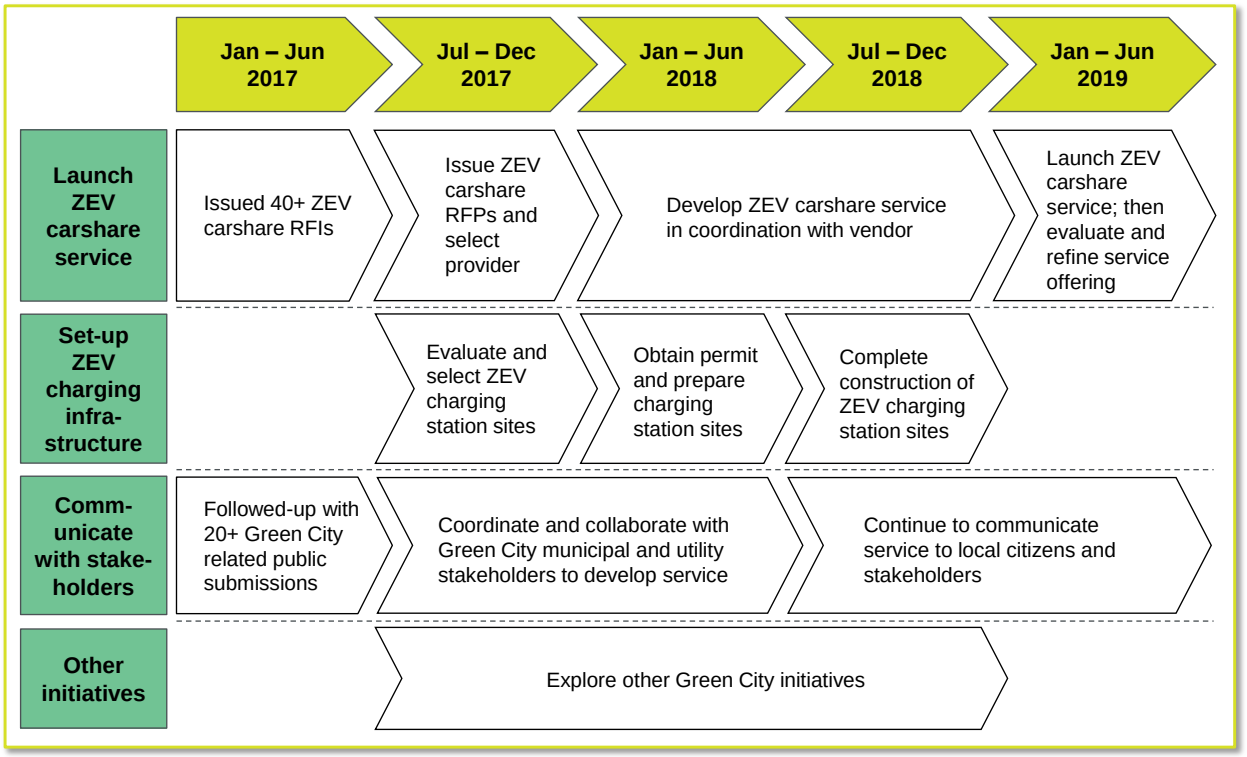
Agents and operators will have access to direct real-time status information about charging stations, and they will perform tasks such as reviewing unit performance histories, initiating a charge, resetting a charger, or performing other issue resolution tasks.

Electrify America expects to resolve the majority of support issues via the call center. Upon encountering an issue that cannot be resolved, a ticket will be generated to the next level support process. Electrify America may provide preventive and corrective maintenance of its stations utilizing third parties with credible expertise, where appropriate. Regardless of whether maintenance is performed in house or by a contractor, Electrify America anticipates setting a goal of resolving minor matters within 24 hours of a reported problem, while serious matters will be expected to be resolved within 48 – 72 hours.

8.6 Timelines

The Cycle 1 CA ZEV Investment Plan, submitted March 8th, laid out schedules for investment during the entire first cycle, which began in January 2017. The Plan presented significant work beginning in the first half of 2017. It set preliminary milestones for the construction of charging stations in California, broken down into six month intervals, laying out a firm schedule to complete construction of 400+ stations by the end of the first cycle. In addition, the full Cycle 1 CA ZEV Investment Plan laid out the Education and Awareness campaign by month. (Advertising purchase schedules are confidential business information.) Finally, the Cycle 1 CA ZEV Investment Plan laid out a schedule for Green City Initiative infrastructure construction. Additional detail on the Green City Initiative's six-month milestones is provided in Figure 8.

Figure 8: Green City Initiative 6-month Milestones



The schedules in the Cycle 1 CA ZEV Investment Plan called for Electrify America's investment in California to have already begun. However, Electrify America is not making additional investments before the Plan is approved, as it is not able to confirm that such investments would be creditable. All site evaluation and selection work in California has been put on hold indefinitely. The first contracts to build more than 100 charging stations by the end of 2017 are on permanent hold. And all advertising buys and other education efforts have been cancelled. As Electrify America and CARB have discussed, Electrify America will have to restructure its investment schedules and milestones to accommodate this unexpected delay, and the scale of that adjustment will be dictated by the final date upon which CARB approves Electrify America to begin investments. Electrify America's investment in California will be delayed – but it is not possible for Electrify America to provide a new schedule without knowing CARB's timing, or its intention to approve or disapprove the Cycle 1 CA ZEV Investment Plan.

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