California ZEV Investment Plan: Cycle 4

Public Version

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electrify america

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1. List of Acronyms

Please note – further definition of select terms found in the ZEV Glossary in Section 14.

AADT	Average Annual Daily Traffic
BEV	Battery Electric Vehicle
BESS	Battery Energy Storage Systems
BNEF	Bloomberg New Energy Finance
CARB	California Air Resources Board
CSR	Corporate Social Responsibility
CVRP	Clean Vehicle Rebate Program
DAC	Disadvantaged Community
DCFC	Direct Current Fast Charging
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
EVSE	Electric Vehicle Supply Equipment
FCEV	Fuel Cell Electric Vehicle
ICCT	The International Council on Clean Transportation
ICE	Internal Combustion Engine
KPI	Key Performance Indicator
kW	Kilowatt
kWh	Kilowatt Hour
LCFS	Low Carbon Fuel Standard
LIC	Low Income Community
MHD	Medium- and Heavy-Duty Vehicles
MSA	Metropolitan Statistical Area
MUD	Multi-Unit Dwelling
OCPI	Open Charge Point Interface
OCPP	Open Charge Point Protocol
OEM	Original Equipment Manufacturer
PESO	Paid, Earned, Shared, and Owned
PEV	Plug-In Electric Vehicle
PHEV	Plug-In Hybrid Electric Vehicle
RFI	Request for Information
RFP	Request for Proposal
TNC	Transportation Network Company (e.g., Uber, Lyft)
VPPA	Virtual Power Purchase Agreement
ZEV	Zero Emission Vehicle

2. Executive Summary

Electrify America is pleased to present this Zero Emission Vehicle (ZEV) Investment Plan for its fourth cycle of ZEV infrastructure, education and awareness, and access investments in the State of California. As required by 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, Volkswagen Group of America is investing $800 million over 10 years to support the increased adoption of ZEV technology in California. This investment represents the largest commitment of its kind to date. This Cycle 4 plan is the culmination of nearly a year of collaboration with the California Air Resources Board (CARB) and defines the investments to be made or targeted in Cycle 4, which spans July 2024 through December 2026.

After nearly seven years of investing in ZEV adoption, Electrify America has opened over 843 ultra-fast charging stations nationwide[1], deployed over 2,828 Level 2 workplace and multi-unit dwelling (MUD) charging ports, and run multiple brand neutral marketing campaigns collectively garnering over one billion impressions. Electrify America has made these investments with the primary goal of accelerating electric vehicle (EV) adoption at a critical juncture in the automotive industry.

For market context, automotive manufacturers across the globe have committed to electrification, bringing electric vehicles to market with new body styles, longer ranges, and higher charging speeds. In parallel, state and federal governments are bolstering ZEV programs and offering a range of tax credits, funding grants, and incentives for both fueling infrastructure and ZEVs. In particular, the State of California has committed to a target that 100% of new passenger vehicles will be zero emission by 2035 (Advanced Clean Cars II) and to a zero-emission truck and bus fleet by 2045 (Advanced Clean Fleets). The state has also committed billions of dollars to ZEV adoption through the state budget and state ZEV and infrastructure funding programs. All of these developments and advancements in the market contribute to the dynamic and rapidly evolving ecosystem in which Electrify America operates.

Against this backdrop, Electrify America has undergone a multi-faceted planning effort to develop this Cycle 4 plan, which will advance the company's efforts to enable electric transportation by providing a high-quality, reliable charging experience. Electrify America aims to accomplish this objective while also supporting environmental sustainability, creating positive community impact through education and access programming, and fostering equality and diversity to ensure its investments are leading toward a cleaner, more equitable, and just future. To develop this plan, Electrify America has applied lessons learned from experience gained in Cycles 1 through 3. Electrify America combined those lessons with insights and perspectives from a broad outreach effort that included reviews of academic literature, engagement with state and local government officials, and thorough discussions with leaders of ZEV nonprofits and community organizations, in addition to customers. Each touchpoint yielded valuable perspectives and recommendations, many of which complemented Electrify America's own internal thinking. The company is deeply grateful to all those who took part in this effort.

During the Cycle 4 National Outreach Process (NOP), Electrify America hosted webinars, sent personalized emails to relevant parties, and invited general input through a public-facing submissions page on ElectrifyAmerica.com. These combined efforts took place over multiple

[1] Unless noted otherwise, "National" or "Nationally" refer to the United States, excluding California. References to "network-wide" or "nationwide" refer to the United States, inclusive of California.

months to allow interested parties the chance to contribute. Electrify America hosted eight webinars over five weeks designed to inform government officials, nonprofit leaders, and academics about its previous investment cycles and invite them to become involved in the Cycle 4 planning process. Throughout these stakeholder interactions, participants emphasized the importance of charging station reliability. During interactive webinar polls, stakeholders shared that station reliability is the largest current barrier to zero-emission vehicle adoption, even as they ranked it as the most important element of a successful charging experience. Receiving this feedback reinforced to Electrify America the importance of delivering a reliable charging experience to customers.

Making smart, data-informed investments is core to Electrify America's approach and will continue to be the focus to overcome remaining barriers to EV adoption. Consumer awareness and education about ZEVs continue to be important components of the ZEV transition, as noted by the July 2023 report by the National Renewable Energy Laboratory (NREL).[2] On infrastructure, utility interconnection costs and demand-based rates and fees continue to pose challenges to the long-term economic viability of DC fast charging stations, while site acquisition and development timelines continue to be a barrier to rapid deployment of EV charging and, in turn, more widespread ZEV adoption.[3] For example, it was more expensive to construct in California in 2022 than in other states. Electrify America approaches these challenges with solutions that involve working with stakeholders, regulatory engagement, and sharing lessons learned, all with the goal of ensuring efficient and impactful investments in the ZEV ecosystem.[4]

Electrify America's Cycle 4 investments will focus on Infrastructure, Education and Awareness, and Access. Consistent with guidance from CARB, Electrify America will strive to achieve that 35% of Cycle 4 investments benefit low-income or disadvantaged communities in California. Electrify America uses definitions for low-income and disadvantaged communities established by the State of California.[5]

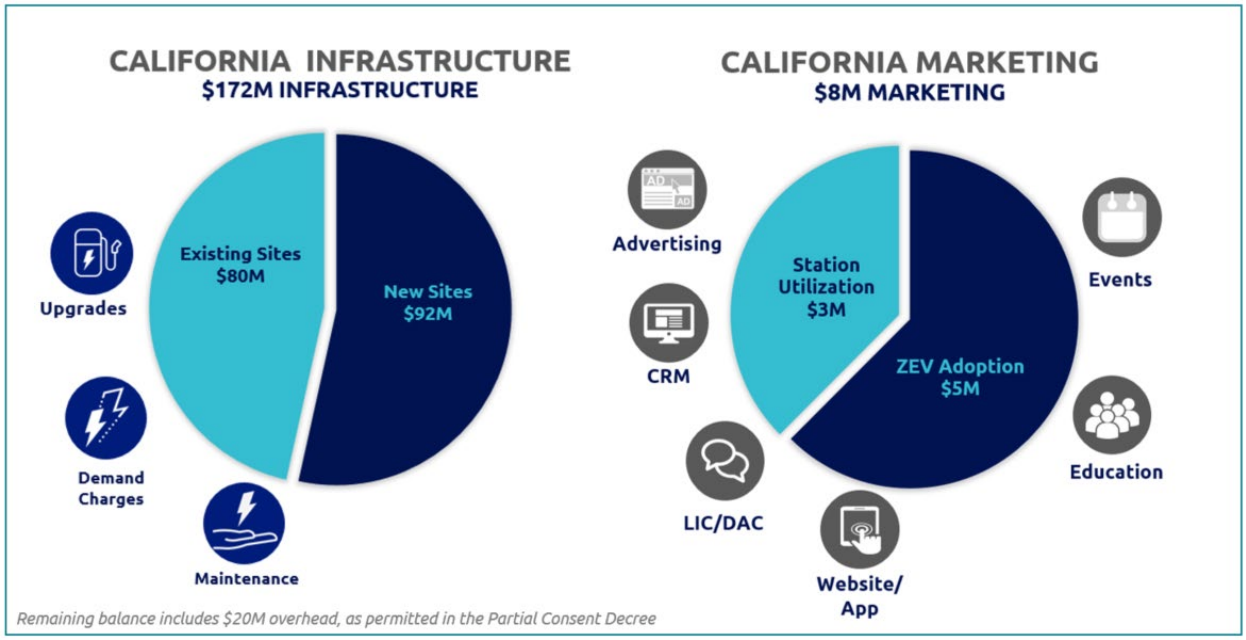
[2] National Renewable Energy Laboratory, "The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure"

[3] Electrify America, "2022 Annual Report to California Air Resources Board – Public Version"

[4] National Renewable Energy Laboratory, "The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure"

[5] Disadvantaged communities are designated by the California Environmental Protection Agencies utilizing the CalEnviroScreen mapping tool, which helps identify communities in the state that are particularly affected by, and vulnerable to, pollution. CalEnviroScreen 4.0 can be found here: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40. Low-income communities are defined by AB 1550 (Gomez, Chapter 369, Statutes of 2016) as "census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093."

Figure 1: California Overview of Investments



2.1 Infrastructure Investments

In Cycle 4, Electrify America plans to invest approximately $172 million in EV charging infrastructure to support continued ZEV adoption. Using the latest Geographic Information System (GIS) analysis and site selection modeling, Electrify America expects to build between 360-740 new chargers in California, with a target of 530. To best serve the increased demand for EV charging, Electrify America continues to increase the average number of chargers at each station, within the constraints of real estate and power availability. To this end, the final number of stations will vary based on Electrify America's ability to build larger stations where conditions support. The final number of chargers installed will ultimately depend on the install cost per charger.

Intentional Site Selection: In prior cycles, Electrify America used the best available data to inform site selection. At that time, there was lower EV adoption and minimal available data on charging. Taking what Electrify America learned in Cycles 1-3, as well as the patterns in Electrify America's own data, the site selection model has become increasingly robust and is continually improving. The model now analyzes 100+ inputs, such as utilization, EV adoption, socioeconomic, and geographical data. This model serves as the basis for informing site selection with the goal of deploying sites in locations that will continue to drive ZEV adoption.

Station Reliability Upgrades: As Electrify America continues to improve upon the network developed in Cycles 1-3 drawing on evolving best practices and technological advancements, the company will focus on upgrading under-performing legacy equipment to its newest generation chargers in Cycle 4, which will continue to improve the customer experience, especially with regard to reliability, and thus making public fast charging a more seamless process.

2.2 Public Education, Awareness, Access, and Marketing

Over the next few years, new vehicle launches will provide consumers more options; and strong policy support at the local, state, and federal levels will help make EVs even more affordable. However, to drive EV adoption, public education and marketing will be critical to informing consumers of this new era, as noted in NREL's recent EV charging infrastructure report.[6] To address this, Electrify America has planned brand neutral education, awareness, and access initiatives, as well as a branded marketing campaign to drive station utilization.

Brand Neutral Campaign: Boosting ZEV Adoption through Education and Awareness: Similar to Electrify America's Cycle 3 investments, in Cycle 4 Electrify America plans to drive increased education and awareness through social responsibility and the ZEAP program as further described in Section 6.

Branded Campaign: Boosting Station Utilization through Branded Marketing: Electrify America will also invest in increasing utilization of its charging network through events, promotions, and marketing. As outlined in Appendix C of the Partial Consent Decree, Electrify America must target utilization to demonstrate its investments are "addressing an existing need or supporting a reasonably anticipated need." According to focus groups convened by Electrify America, consumers (including ZEV owners and those who are considering purchasing a ZEV) have significant knowledge gaps around charging. Many drivers are unaware of the charging options around them and are unfamiliar with terminology related to the charging experience. To address these needs, Electrify America will conduct a branded marketing campaign to educate consumers and drive station utilization based on four pillars: charging speed, locations/accessibility, quality customer experience, and social responsibility.

2.3 Conclusion

Electrify America's investments are summarized in Figure 2. Cycle 4 builds on the successes achieved during Cycles 1 through 3 — building an expansive, open, ultra-fast network in the U.S., featuring state-of-the-art charging speed, customer-centric sites, industry-leading quality, and executing at a construction pace unmatched in the industry — while also unlocking emerging areas for ZEV adoption.

[6] National Renewable Energy Laboratory, "The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure"

Figure 2: Cycle 4 California Budget

Category	Estimated Budget ($M)[1]
New Sites: Build costs; Operations and Maintenance	$92
Existing Sites: Station Reliability Upgrades, Operations and Maintenance, Demand Charges	$80
Brand Neutral Education, Access, and Awareness	$5
Branded Campaign: Boosting Station Utilization through Branded Marketing	$3
Electrify America Business Operation & Organization[2]	$20
TOTAL	**$200**

[1] Costs include creditable operating expenses and on-site storage where appropriate.
[2] According section 5.1 of Appendix C-1 of the Partial Consent Decree, Electrify America is permitted to spend 10% of the total budget on these costs.

3. Introduction: Who is Electrify America

Electrify America, LLC, was founded in 2016 with the mission of creating a high-quality network of ultra-fast electric vehicle charging stations to promote ZEV access and adoption in communities throughout the United States. In May of 2023, Electrify America celebrated the fifth anniversary of opening its first DCFC station in Chicopee, Massachusetts. The station featured the nation's first liquid cooled cable that permitted charging speeds of up to 350 kilowatts (kW). At the time, fast charging stations more commonly offered charging speeds of 50 kW. Since then, Electrify America has grown to be the largest network of open fast chargers in the country with over 843 stations and 3,702 chargers.

Each year, Electrify America's network has experienced a multifold increase in both the number of charging sessions provided and in gigawatt hours dispensed. In 2019, Electrify America's 381 stations nationwide provided over 100,000 charging sessions, dispensing 1.6 gigawatt hours of electricity. This is equivalent to avoiding the use of nearly 50,000 gallons of gasoline.[7] By 2022, Electrify America's nationwide network grew to over 800 stations, which provided more than 5.2 million sessions and dispensed 173 gigawatt hours of electricity. This enabled just under 500 million EV miles and avoided the combustion of over 21.5 million gallons of gasoline. The number of EVs on the road has grown exponentially during this period and could represent between 40 and 50% of total passenger car sales by 2030.[8] Accordingly, Electrify America remains committed to providing an expansive, high-quality network of fast chargers to support this anticipated increase in EVs and empower drivers to make the switch to driving electric.

3.1 Communicating and Realizing the Benefits of EV adoption

Part of Electrify America's strategy for empowering communities is to recontextualize electric transportation as something that is accessible and can provide benefits to community members' lives and wellbeing. Electrify America achieves that partly through its brand-neutral marketing campaigns seeking to engage with consumers on the benefits of EVs, while also making major investments in workforce development programs so everyone can share in the benefits of vehicle electrification.

The overarching themes across Electrify America's brand-neutral campaigns are that electric vehicles are a viable form of personal transportation and, as a result, are becoming a more common aspect of society. "*Jetstones,*" Electrify America's first campaign, highlighted the technological advances made in the EV industry regarding battery range and charging infrastructure. The goal was to refute the perception that long distances cannot be traveled in an EV. Afterwards, the "*Normal Now*" campaign sought to illustrate how commonplace EVs and charging infrastructure have become. Finally, the "*As Seen on EV*" campaign, launched in 2022, builds on the message of "*Normal Now*" by appealing to people's enjoyment of television streaming and enveloping EVs into their favorite TV genres to further normalize electric vehicles as part of the current culture and everyday life.

Since 2018, Electrify America has invested over $10.5 million in community-based and local organizations across the United States supporting workforce development programs and EV awareness and adoption campaigns. As part of this investment, Electrify America is working with local community organizations to host ride-and-drive events and with educational institutions to establish EV infrastructure training academies and programs. Key to a viable and

[7] U.S. DOE, "Fuel Conversion Factors to Gasoline Gallon Equivalents"
[8] Bureau of Labor Statistics, "Charging into the future: the transition to electric vehicles"

equitable EV future is for all communities to experience the benefits of widespread EV adoption. Increasing access and developing a workforce to support and maintain EVs and charging infrastructure are just a few ways Electrify America endeavors to ensure that communities are not left behind on the path toward vehicle electrification. These investments in equity and sustainability set a high bar for the EV charging industry with respect to the industry's social responsibilities.

3.2 Cycle 4 Investments

Ensuring the quality of Electrify America's charging network through intentional station placement and the design and deployment of next generation technology underpins the Cycle 4 investment plan. Electrify America approaches Cycle 4 having met the spending targets of Cycles 1 and 2 to the satisfaction of CARB and is on track to meet Cycle 3 targets. With the successful completion of Cycle 4, Electrify America will have fulfilled the 10-year investment commitment of $800 million in California (see Figure 3).

Figure 3: California Investment Cycles

Cycle 1 Q1 2017 – Q2 2019	Cycle 2 Q3 2019 – Q4 2021	Cycle 3 Q1 2022 – Q2 2024	Cycle 4 Q3 2024 – Q4 2026	Total
$200M	$200M	$200M	$200M	**$800M**

Since 2018, Electrify America has expanded its network to increase access to public charging infrastructure and to make road trips not only possible but also easy in an EV. Nationwide[9], the average distance between Electrify America stations in urban areas is 10.5 miles, and along highways the average distance between Electrify America stations is 23 miles. 97% of Americans live within 120 miles of an Electrify America charging station. On average, stations include 4.4 chargers, with larger stations becoming more common, and charging speeds between three and twenty miles of range per minute. Electrify America's upcoming Cycle 4 investments balance prioritizing intentional site selection (building new sites) with ensuring a reliable, high-quality charging experience for EV drivers (upgrading existing sites), while simultaneously taking into account the location of new federally-funded infrastructure deployments coming into California.

As such, in Cycle 4, Electrify America plans to dedicate a portion of investment towards station reliability upgrades and improvements. These efforts will focus on replacing older equipment that provide a degraded charging experience. Electrify America's new Generation 4 (Gen 4) chargers are better equipped to meet current and future demands for charging infrastructure.

During the National Outreach Process (NOP) and other public engagement efforts, stakeholders cited charger reliability as a key component of their experience as an EV driver or policymaker. Cycle 4 investments are intended to ensure a quality experience at Electrify America stations.

[9] The National ZEV Investment Plan submitted to EPA covers investment in the United States, excluding California, pursuant to Section 2.1 of Appendix C of the Partial Consent Decree. The California ZEV Investment Plan submitted to CARB covers investment in California, pursuant to Section 3.1 of Appendix C of the Partial Consent Decree. Unless noted otherwise, "National" or "Nationally" refer to the United States, excluding California. References to "network-wide" or "nationwide" refer to the United States, inclusive of California.

Electrify America determined that, to maintain a high-quality charging experience, Gen 4 equipment should replace some legacy charging equipment.

These newest generation of charger has proven its ability to deliver higher quality charging experiences as measured through multiple metrics when compared to legacy chargers. Upgrading older chargers for newer Gen 4 chargers, an effort which is a core component of Electrify America's Station Reliability Upgrade plan (as detailed in Section 5.3.1), improves the experience for the EV driver by providing them with more reliable hardware capable of ultra-fast charging speeds.

3.3 Guiding Principles

Maximize Availability and Power Delivery
Electrify America will prioritize site maintenance to ensure chargers are online and available to customers. Electrify America will modernize underperforming sites with the latest, high-quality technology to improve uptime and reliability.

Deliver a Successful Charging Session
Electrify America will provide a seamless charging experience from plug-in to session completion.

Drive Adoption and Usage
Electrify America's site selection tool will guide the site identification process based on customer demand as well as the utility and policy environments. Maintenance of the network combined with intelligent site selection will continue to reduce range anxiety and ensure customer awareness of Electrify America's charging availability via branded marketing. Electrify America aims to continue to drive ZEV education, awareness, and access through funding sponsorships and partnership programs.

Promote Sustainability, DEI, and Workforce Training (Education, Access, & Awareness)
Electrify America will continue to support programs within underserved communities to drive ZEV awareness, education, and access; and support ZEV workforce development programs to drive awareness and interest in ZEVs and invest in job readiness.

3.4 Good Faith Estimate

Electrify America notes that the estimated budgets represent a good faith estimate of Cycle 4 costs. Given uncertainties regarding both capital and operating costs, it is possible that total costs may exceed or fall below targeted levels. In the event that costs fall below targets, Electrify America will deploy additional investments in approved use cases to meet the Appendix C ZEV Investment commitment. If costs exceed budget forecasts, the number of investments will be reduced by a commensurate amount. Should investment targets in any new use case be unachievable due to practical considerations, the allocated funds will be redeployed into one or more of the other approved use cases to ensure the total investment fulfills Appendix C requirements.

4. National Outreach Efforts

4.1 Introduction

Electrify America built upon previous national outreach processes to conduct this fourth round of targeted stakeholder outreach to help inform the creation of the Cycle 4 ZEV Investment Plan. Each national outreach process yields important learnings, and this year the team focused on purposeful engagement with state transportation officials, non-profit representatives, and academics. Electrify America wanted to learn from this specific audience how it can augment its efforts over the past three cycles to deliver the reliable charging experience that is so critical to ZEV adoption.

During the Cycle 4 National Outreach Process (NOP), Electrify America hosted webinars, sent personalized emails to relevant parties, and invited general input through a public-facing submissions page on ElectrifyAmerica.com. These combined efforts took place over multiple months to allow interested parties the chance to contribute thoughts. Throughout all of those interactions, participants emphasized the importance of charging station reliability.

4.2 Feedback from Specific Groups

In addition to targeted media notifications, Electrify America conducted one-on-one outreach to several transportation organizations to request their assistance in amplifying the NOP submission portal. The following groups were primary targets for outreach given their representation of thousands of professionals working in the zero-emissions transportation sector.

- American Association of State Highway Transportation Officials
- ITS-America
- National League of Cities
- National Association of City Transportation Officials
- U.S. Conference of Mayors
- National Governors Association

Electrify America also worked with academics at University of California, Davis, the National Renewable Energy Laboratory, the Transportation Research Board, and the nonprofit VELOZ to encourage additional submissions.

4.3 Webinar Insights

Electrify America hosted multiple webinars designed to inform attendees about its previous investment cycles and explain how to become involved in the Cycle 4 planning process.

Throughout the webinars, held over five weeks, Electrify America engaged directly with government officials, nonprofit leaders, and academics from the following states:

Figure 4: States represented on the NOP webinar series

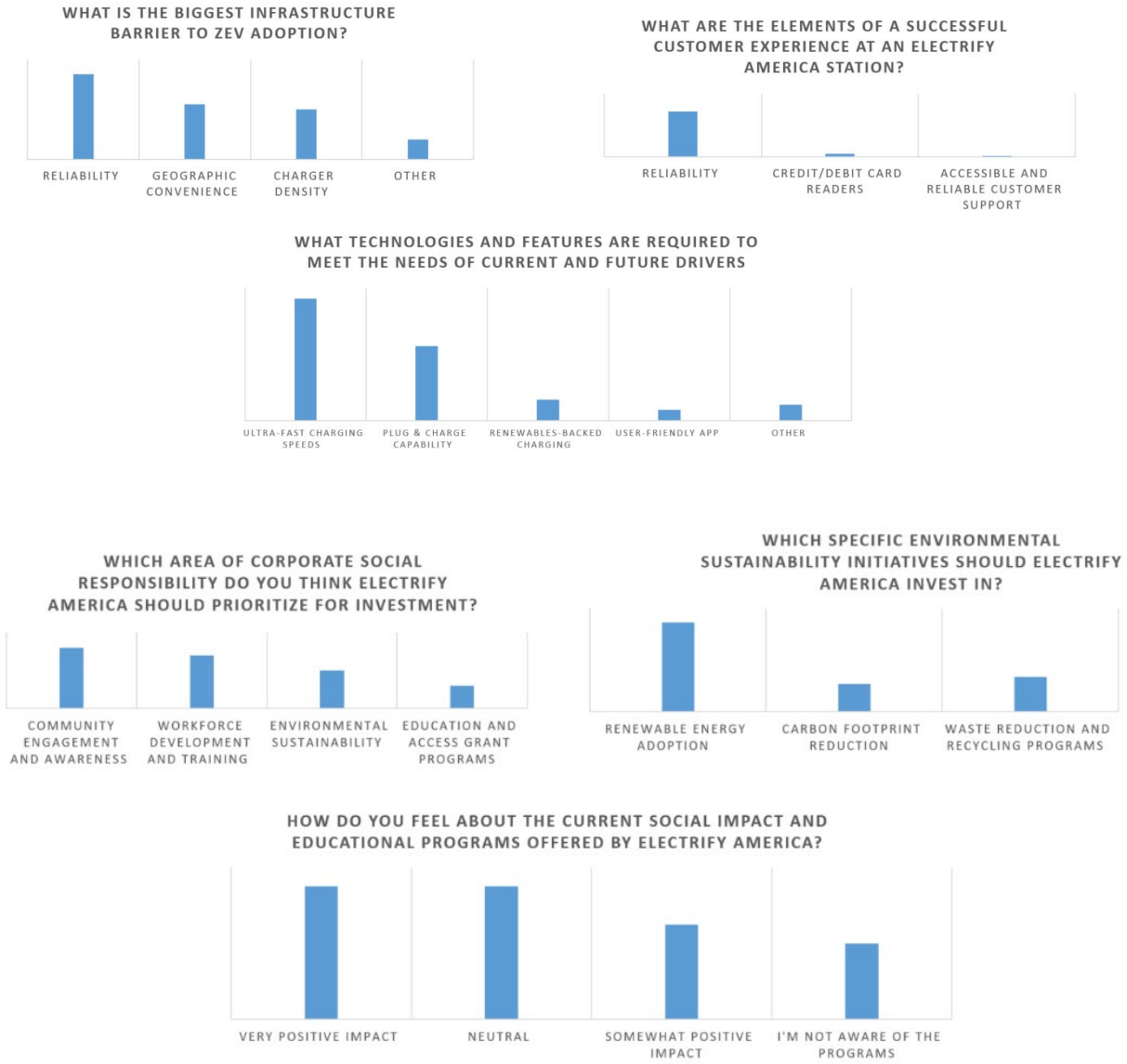
Maine	Massachusetts	New Hampshire
Rhode Island	Vermont	Maryland
New York	Pennsylvania	Florida
Louisiana	North Carolina	South Carolina
Arkansas	Nebraska	Ohio
South Dakota	Arizona	California
Hawaii	New Mexico	

Electrify America administered live polls designed to make the webinars interactive while soliciting important information from attendees. This added element of interactivity allowed Electrify America to solicit input and suggestions in real time from attendees, all of which was captured through detailed notetaking.

4.4 Submission Portal Results

Compared to previous cycles, Electrify America received fewer submissions through the public-facing online portal, despite consistent efforts to encourage engagement. There could be many reasons for this decline, including the fact that, as compared to previous investment cycles, battery electric vehicles and the wider ZEV space are much more popular, accessible, and normal. There is also more capital in the EV charging space, as well as more actors/charging providers, compared to previous cycles. The new element of live polling during webinars may have also led attendees to feel as if their views were adequately shared in that format versus feeling a need to provide further thoughts via the online portal.

Figure 5: Answers to Poll Questions Administered During NOP Webinars



The team conducted an analysis of who answered the call for input, and the table below shows submission demographics for those submissions received by June 30, 2023. That date was the deadline set by Electrify America to allow adequate time for consideration of submissions.

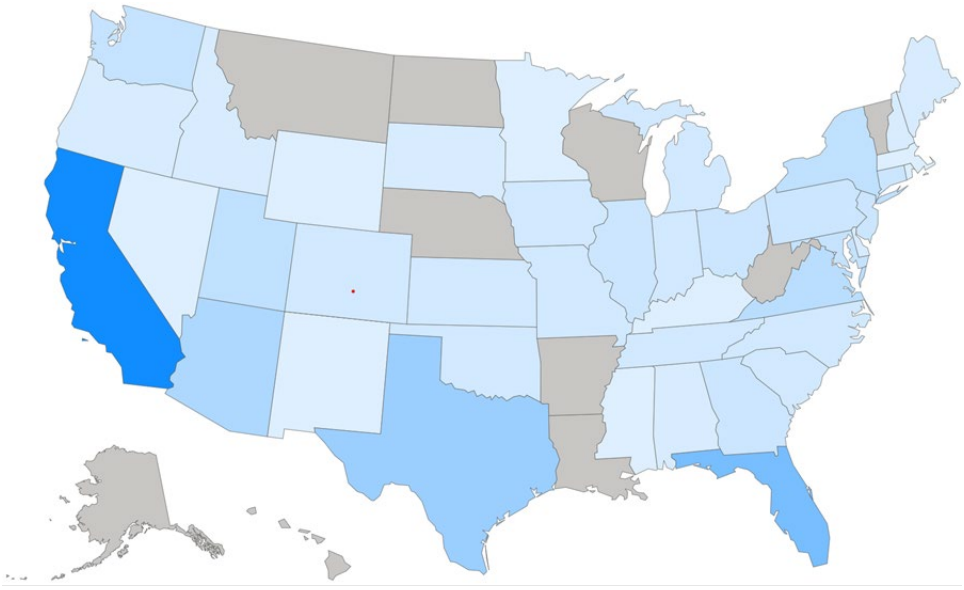
Figure 6: NOP Submission Demographics

Submitter Category	Number of Submissions Received
Federal agencies	1
State, local, tribal, and territorial governments	9
Environmental justice groups, community-based organizations, and other non-profits in a relevant field	4
Academic institutions, researchers, and experts	5
Electric utilities	2
Ineligible Submitters	161
Total	182

Ineligible submitters were those individuals who contributed thoughts about where new sites should be located. Unlike in previous cycles, those submissions were not in the scope of information required in building out the Cycle 4 plan.

Assessing submissions geographically, the map below represents the number of submissions by the submitter's state. Darker shades indicate that more submissions came from that state. California and Florida had the most submissions.

Figure 7: Submissions by State



Submission topics included site suggestions, technology products, workforce development, education, and vendor interest inquiries. Each respondent received a follow-up from Electrify America, and a subset of those responses received a phone call from Electrify America staff.

4.5 Learnings and Insights from the NOP

Charging station reliability was prominently highlighted through the National Outreach Process, via portal submissions and in webinar conversations. As illustrated by the polling question graphs above, stakeholders shared that station reliability is the largest current barrier to zero-emission vehicle adoption, while also ranking it as the most important element of a successful charging experience.

Hearing this feedback was helpful to the Electrify America team and reinforced the importance of delivering a reliable charging experience to customers. Electrify America sincerely appreciates everyone who took part in the NOP webinars and spent time submitting information through the online portal.

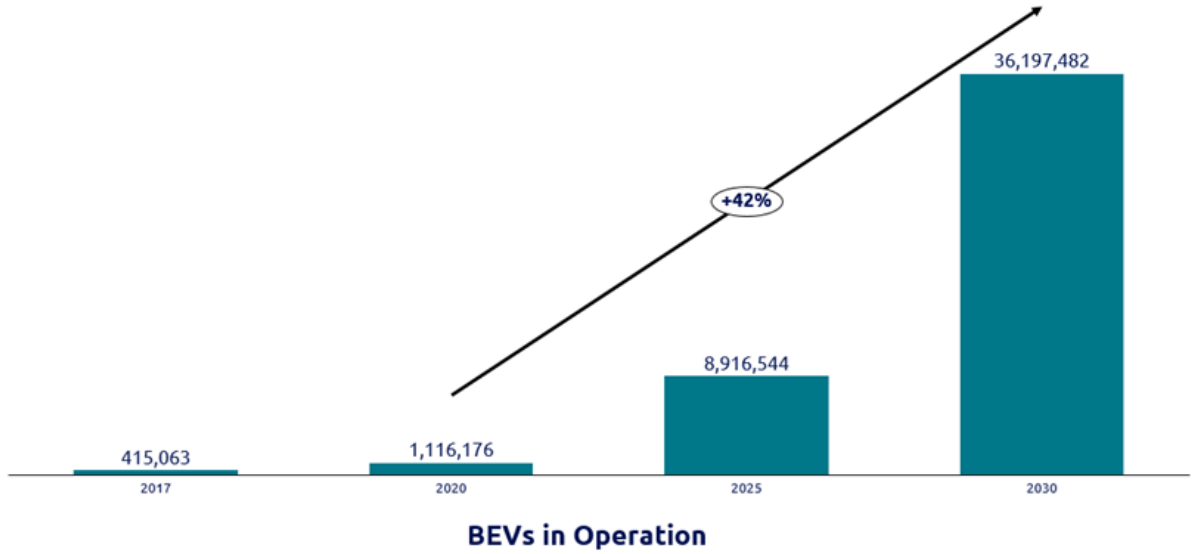
5. Infrastructure Investments

Electrify America plans to invest approximately $172 million in charging infrastructure in California.

5.1 Introduction

Electrify America is embarking on its fourth cycle of investment at a critical time in the battery electric vehicle (BEV) industry. There are an increasing number of newer EV models that require DCFC entering the market, with an estimated 42% annual growth in EV sales expected in the next 10 years.[10] Since the start of Cycle 3, Electrify America has deployed chargers spanning two cross-country routes, both of which have been vital to break barriers to EV adoption. Through over 2.3 million charging sessions in California in 2022, customers have relied on Electrify America to enable their EV transportation.

Figure 8: BEVS in Operation according to Bloomberg NEF



As Electrify America continues to serve current customers while preparing for the influx of new EV drivers to come, the quality of the network has been a priority.

Cycle 4 offers Electrify America another opportunity to focus on providing EV drivers with a reliable network. While this current investment is not large enough to address all outstanding needs for public charging infrastructure, these investments do aim to substantially advance the state of the industry not only with charging density, power, and quality but also through lowering the barriers to entry for other private and public sector organizations through supplier alternatives, skilled construction resources, and best practices/lessons learned. Electrify America's Cycle 4 infrastructure investments focus on three priorities: improving quality by upgrading legacy and underperforming sites, maintaining quality at other sites, and continuing to develop new sites using the current generation of equipment and latest insights into quality and best practices. Electrify America determined these priorities based on internal analysis, but also through feedback from external stakeholders, especially insights from the National Outreach Process.

[10] BloombergNEF "Electric Vehicle Outlook 2023"

5.2 Distilling Insights from the National Outreach Process and Cycles 1 - 3

Electrify America's National Outreach Process, as described in Section 4, provided the planning team with data and perspectives on industry trends. These insights helped shape investment decisions. From the NOP, it was evident that reliability is the most critical part of the customer charging experience.

5.2.1 Network Must be High Quality

Electrify America will focus on Station Reliability Updates in Cycle 4. Electrify America will replace legacy chargers that no longer meet the quality criteria (more details in Section 5.3.2) with its newest generation of chargers.

5.2.2 Network Growth Must be Intentional

Electrify America has developed an innovative site selection model to ensure that new sites are selected with intentionality. This approach includes taking into consideration that the federal government's National Electric Vehicle Infrastructure (NEVI) Program will also fund new sites, which Electrify America envisions will be complementary to the Consent Decree investments, particularly given that by Electrify America's calculation, the majority of existing sites that meet NEVI requirements for four 150 kW or higher dispensers are Electrify America sites. Electrify America will also aim to leverage NEVI funds as an owner and operator, as well as on behalf of commercial customers, in compliment to Consent Decree investments.

5.2.3 Public Charging Must be Fast

Electrify America's network is the largest open DCFC network, and the future of high-powered ZEVs will drive increased demand for DC fast charging. Public charging must be fast to support current and future EVs on the road.[11]

5.3 Electrify America Customers Expect a High Quality, Reliable Network.

Within the U.S., there are currently ~160,000 charging ports at 59,698 stations,[12] serving the 2.4M electric vehicles on U.S roads today.[13] The average public DCFC station utilization varies from 2 kWh/port/day to 26 kWh/port/day.[14] Electrify America's usage is notably higher, especially in some areas of California.[15] With this level of utilization distributed across available chargers comes increased "wear and tear" on the hardware, resulting in a negative impact on charger reliability and the customer charging experience. This dynamic has led to an overall decline in customer satisfaction with public charging generally, falling to its lowest level recorded during the first half of 2023 and satisfaction with DC fast chargers sinking 20 points between 2022 and 2023.[16] One in five public charging attempts industry-wide failed in the first half of 2023[17] (20.8%), up from 14.5% two years prior,[18] causing frustration amongst EV drivers and impacting adoption rates.

[11] Recurrent Auto, "Fastest Charging EVs"
[12] Alternative Fuels Data Center, "Alternative Fueling Station Locator"
[13] Alternative Fuels Data Center, "Vehicle Registration Counts by State"
[14] Transportation Research Journal, "Public electric vehicle charging station utilization in the United States"
[15] Electrify America, "Appendices to the Q2 2023 Report to California Air Resources Board"
[16] J.D. Power, "Public Charging Issues May Short-Circuit EV Growth"
[17] Automotive News, "EV Charging Satisfaction Continues to Drop"
[18] USA Today, "How reliable are public EV charging stations? Report shows many EV drivers have issues"

Electrify America's charger reliability has specifically been identified as an area for improvement, ranking fourth place the 2023 J.D. Power's Overall Customer Satisfaction Index Ranking.[19] In addition, during CARB's public meeting to solicit comments in August 2023, a number of constituents stated that Electrify America needs to prioritize reliability and maintenance.

To continue providing a network that delivers the reliability necessary to meet customer needs and drive EV adoption, Electrify America's campaign to improve station reliability will focus on retrofitting and refurbishing underperforming chargers. An underperforming charger is one that delivers a substandard charging experience potentially due to poor uptime, dispensing at low power (electrical degradation), poor plug-in success, etc. Electrify America plans to continue this effort in Cycle 4 to equip more existing stations with hardware that can meet the demands of increased EV adoption.

5.3.1 Investment Overview of Station Reliability Upgrades

Station Reliability Upgrade Plan

Electrify America has determined that to uphold a high-quality network, it will upgrade sites that meet the parameters outlined in the company's replacement methodology as described in section 5.3.2. For these prioritized sites, Electrify America will deploy the redesigned, latest generation ultra-fast chargers capable of 350 kW, which at the time of writing, is the Gen 4 charger. Electrify America has determined that in order to maintain a high-quality charging experience, the chargers that fit the replacement methodology parameters should be replaced.

Raising the bar: Optimized quality through process improvement

Electrify America's quality process begins with its vendors. From RFP to development, Electrify America engineers are heavily involved in the design and development process, working with vendors to first develop a prototype which can be tested in a lab environment for safety, reliability, and quality. This is done using an Electrify America designed quality assurance process, which includes extensive testing requirements, reporting, and a vendor/client feedback loop.

Electrify America has invested extensive time and effort to continually improving its testing lab, the Electrify America Center of Excellence, through testing interoperability between charging hardware, software, and vehicles. The process begins with operational data, engineering analyses, or customer feedback provided by the marketing and customer contact center teams. Electrify America is able to review and assess products with deep involvement in not only upfront development, but also ongoing, operational improvements.

During the development of the Gen 4 charger, the engineering team focused on improving diagnostic capabilities through hardware and firmware improvements. Electrify America technicians can now identify specific fault conditions (e.g., thermal derating) to enable the Network Operations Center (NOC) and field service teams to apply countermeasures more effectively while also collecting more granular data to identify the root cause of fault conditions. In 2022, Electrify America insourced charging software and has been able to capture high quality data that is used to improve the customer experience.

[19] J.D. Power, "Public Charging Issues May Short-Circuit EV Growth"

As Electrify America has grown, the Center of Excellence has progressed through many milestones, including the launch of Plug&Charge, which allows for a charging session to begin automatically by simply plugging in. In October 2020, Electrify America was the first charging company to develop and release a Plug&Charge feature globally[20]. Other providers had not taken the opportunity to test and implement this feature. Electrify America engineers and lab technicians work collaboratively with vendors and a first set of OEM partners to successfully launch and add the Plug&Charge capability to the Electrify America network.

Since becoming a pioneer in the EV charging space, Electrify America has had the opportunity to learn from successes and shortfalls on the network. The company's team of skilled and experienced engineers has developed processes and procedures to ensure that high quality products will continue to support a reliable network for EV drivers for years to come.

Electrify America is confident in the performance of Gen 4 chargers

Many aspects of Electrify America's business processes related to technology have improved. In 2018, Electrify America commercialized the first set of 150 kW CCS-1 chargers in the United States. With this initial deployment, these assets have not performed to Electrify America standards.

Today, in Cycle 4, Electrify America has not only matured, but the industry has developed as well, providing new advancements in technology as well as multiple vendor options. The engineering team is more involved in developing requirements, designing, testing, and building a better product that meets internal processes and delivers a consistent high-quality charging experience. As a result of being a pioneer in the industry, the knowledge gained from Electrify America's growth at a time when resources were limited have enabled its engineers to become experts in this new industry.

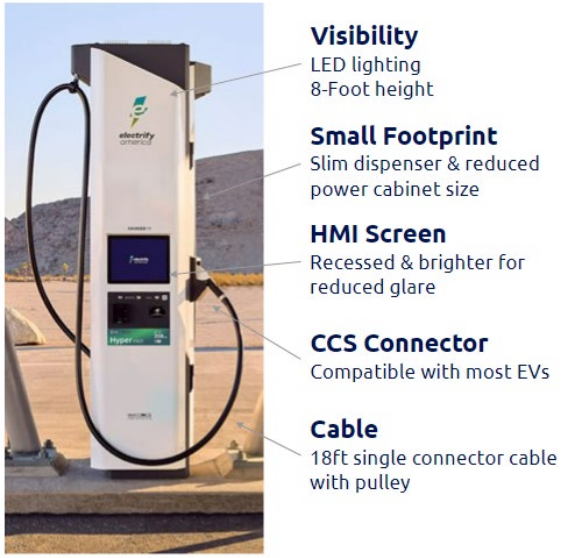
The Gen 4 charger is a custom redesign of Electrify America chargers with an improved human machine interface (HMI) screen, 18-foot cables, and enhanced remote diagnostic abilities, built upon several years of operational data and observations that went through exhaustive testing internally and externally.

[20] Electrify America Newsroom, "Electrify America, Hubject Announce Launch of "Plug&Charge" to Streamline EV Charging Payment Process"

Product Features
Gen 4 chargers have been equipped with:

- New and more robust power modules
- New boards with improved uptime
- Better firmware
- Increased frequency in sending error codes and diagnostics
- Improved availability as compared to legacy chargers

Figure 9: Gen 4 key features



Improved uptime at Gen 4 stations
Gen 4 uptime data exceeds the performance observed on the legacy chargers. The capabilities to resolve issues remotely on the Gen 4 chargers are greater than the legacy chargers, reflecting a 10% average increase in issues resolved remotely.

By focusing efforts on station reliability upgrades and investing in Gen 4 chargers, Electrify America will work to continue to provide a positive charging experience to EV drivers. This commitment to reliability and customer experience will further drive EV adoption through meeting escalating customer demands for reliable, fast, public charging.

5.3.2 Investment Selection Methodology for Station Reliability Upgrades

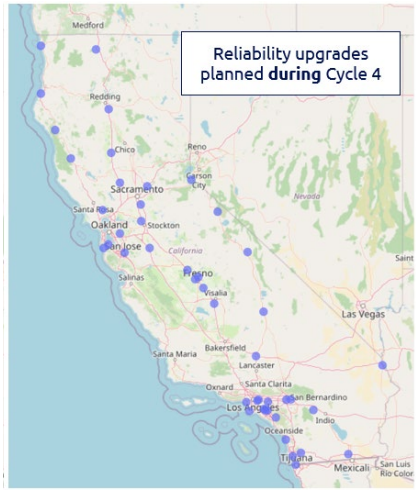
While expected useful life is the starting point for planning station reliability upgrades, the full methodology considers a variety of factors. These factors may include assessing the status of following:

- Age of the charger
- Utilization
- Uptime performance
- Number/type of work orders
- Customer sentiment (based on PlugShare, Electrify America app, etc.)
- Location on key travel routes
- Parts availability
- Serviceability

This methodology blends optimizing total cost of ownership with providing a high-quality charging experience. Maintenance costs rise as the equipment ages, defining an optimal point for upgrading equipment. Further, unreliable equipment delivers a poor charging experience as chargers may be offline/unavailable, derated, or otherwise inoperable. These data sets are overlaid to inform station reliability upgrades. Optimizing creditable ZEV investment dollars while

providing a quality charging experience is critical as Electrify America operates efficiently at scale and ensures long-term continued investment in new charging stations.

Figure 10: California locations planned to be upgraded during Cycle 4



5.3.3 Investment Details for Station Reliability Upgrades

Electrify America plans to invest up to $25 million on upgrading equipment as part of Cycle 4. About 600 chargers (about 130 sites) installed in Cycles 1 and 2 will reach their end of useful life during Cycle 4 (as defined in Section 5.3.2 above). Electrify America intends to continue to monitor performance and optimize the replacement timeframe to maximize reliability and availability with prudent spending of creditable ZEV investment dollars. As such, the total amount of chargers and dollar value may vary based on actual performance and degradation of the existing hardware. In the case that the cost of upgrading equipment exceeds the investment spend available in Cycle 4, Electrify America intends to fund this hardware sustainment from other sources (which would not be subject to the regulatory requirements applicable to Consent Decree funds). Likewise, in a scenario where upgrading equipment is below planned costs, Electrify America will develop additional charging stations, above the Cycle 4 targets detailed below, but using the same site selection methodology.

Early generation hardware installed for much of Cycles 1 and 2 was purchased with the expectation that the end of useful life would be reached by Cycle 4. With the opening of the first stations 2018, the first tranche of hardware is now approaching the end of its useful life in 2023. Cycle 4 is the first cycle where Electrify America will have many chargers reach their end of useful life each year. As in any asset-heavy operation, reinvestment will be required each year to sustain the network at scale.

In addition, Electrify America anticipates that upon fulfilling its obligations to invest $200 million consistent with the Cycle 3 California ZEV Investment Plan, there may be stations in the planning, development, or construction stages not yet completed. Those stations will be completed using Cycle 4 funding as a part of this Cycle 4 budget, after all Cycle 3 investment obligations have been met.

5.4 Growing the Public Network with Intentionality

5.4.1 Investment Overview for Network Growth

A primary goal of these investments is to accelerate EV adoption. In Cycle 4, the focus has shifted from the aggressive network expansion of previous cycles to delivering a consistently reliable charging experience.

A review of studies and research papers presents various forecasts for the number of DCFC chargers needed to support the anticipated 2030 light duty vehicle EV fleet in the US. These forecasts range widely, with some anticipating a need as high as 600,000 chargers. However, a consensus median forecast value is emerging around 180,000 DCFC chargers needed by 2030. This is supported by the recent NREL study which forecasts a base case value of 182,000

chargers.[21] ICCT in 2021 forecasted 180,000[22], and S&P Global in 2023 forecasted 172,000 DCFC chargers needed by 2030.[23] A few high-end estimates also exist, in the 300,000+ range (BNEF, Atlas Public Policy).[24] Assessing announcements from the recent 7-OEM joint venture, Tesla, EVgo, and other EV charging providers related to each entity's 2030 build targets adds up to about 125,000 - 150,000 chargers currently planned. Many of these announcements may be optimistic, as some providers have yet to open any charging stations. Regardless, there is likely *at least* a 15-25% gap between the currently announced build out of chargers by 2030 and the anticipated requirement of DCFC chargers to support the forecasted 2030 EV light duty fleet. This presents an additional opportunity for Electrify America to continue to expand its buildout plan to meet the anticipated additional need.

5.4.2 Investment Selection Methodology for Network Growth

Electrify America has leveraged internal and external data to develop and improve a set of models to analyze where EV drivers need fast charging across the United States. This model considers over one hundred parameters from across the categories of traffic and travel, charging, socioeconomics, and housing data. Due to the geographic distribution, size, and high use on its charging network, Electrify America anticipates that its data is one of the more robust and comprehensive data sets available, specifically in representing the kWh of DCFC demand across geographies and use-cases. Ultimately, this modeling allows Electrify America to identify where there is additional consumer need for DCFC to optimize its site selection and creditable spend.

To forecast the kWh of DCFC demand at a given site, Electrify America assesses a number of modeling techniques, including linear regression models (e.g. Lasso, Elastic Net, ARD) and other non-regression models (e.g. KNN, Decision Trees, Random Forest). Electrify America trains these models on their existing network of stations across the country to predict the kWh at an unknown location. Error measurement and improvement over time is measured with a variety of metrics to include R-squared/adjusted R-squared values, MSE, and MAE.[25] This modeling work has increased in complexity as the available data set has grown in robustness to support more complex analysis.

Electrify America's modeling work further considers the implications of supply and demand as the EV charging market continues to mature in various metro areas. While the continued adoption of EVs will lead to continued growth in DCFC demand, this does not necessarily solve for utilization, as the supply of chargers continues to increase in parallel. Thus, identifying the balance of supply and demand is necessary to identify areas of unmet demand. Electrify

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[21] National Renewable Energy Laboratory, "The 2030 National Charging Network: Estimating U.S. Light-Duty Demand for Electric Vehicle Charging Infrastructure"

[22] The International Council on Clean Transportation, "Charging Up America: Assessing the Growing Need for U.S. Charging Infrastructure Through 2030"

[23] Stephanie Brinley, S&P Global Mobility, "EV Chargers: How many do we need?"

[24] BloombergNEF, "Electric Vehicle Outlook 2023;" Atlas Public Policy, "U.S. Passenger Vehicle Electrification Infrastructure Assessment"

[25] **R-squared**: Percentage of variance in total energy usage that can be explained by the model. In other words, it measures how well the data fits the model.
Adjusted R-squared: Adjusts the above metric by taking into account the number of predictors.
MSE (Mean Squared Error): Measures how close the regression line fits to the data points
MAE (Mean Absolute Error): which is the error between actual & predicted in the test dataset.

America seeks to identify and meet these areas of unmet demand to continue to power EV adoption in the United States.

At a macro level, Electrify America expects the interplay between growth in supply (new DCFC stalls built) and demand (total EV DCFC GWh dispensed) to adjust over time based on supply chain constraints, public funding, market participants, and a variety of other factors (see figure 11 below). First, as vehicle charging power continues to increase, each installed charger can support additional throughput at the same utilization level. For example, dispensing 50 kW for six hours a day (25% utilization) would result in 300 kWh a day, or ±110 MWh for the year. The same charger at the same utilization but dispensing at 100 kW for six hours a day (25% utilization) would dispense 600 kWh a day, or ±220 MWh for the year. Effectively, increasing charge power (i.e., speed) allows the same install base to dispense more energy in the same amount of time, mitigating some of the need for additional capital investment to install new hardware. This does not eliminate the need to build new stations; as demand growth will continue to outpace but does present an opportunity to more efficiently meet that demand with an optimally designed network. Electrify America is well positioned to capture this trend due to the company's future-proofed portfolio of 150 kW and 350 kW capable hardware.

Second, initial buildout efforts have focused on enabling long-distance travel to alleviate range anxiety at the expense of utilization. Most highway sites are underutilized, but the density is necessary to enable long distance travel. As these highway routes begin to stabilize, Electrify America anticipates (and already sees) a shift in the industry to prioritize further buildout in more densely populated areas, with an exception for NEVI-specified routes. From a strict supply-demand perspective, this is the more optimal matching of supply (stalls) with demand (DCFC GWh). However, as a key component of Electrify America's mission to enable EV adoption, Electrify America will also continue to develop highway sites to enable long-distance travel and alleviate range anxiety.

Electrify America continues to refine the predictive models as additional data becomes available. This continuous improvement process delivers an incrementally more refined output over time. In the past 12 months, successive iterations resulted in meaningful improvement in the output quality. For some exemplary sites, model improvements have reduced some error measures by approximately two thirds. Electrify America expects further improvement in model outputs as analytical capabilities and data sets mature.

Two commonly cited barriers to EV adoption include vehicle price and availability of chargers. As the price of EVs becomes more accessible and as more automakers enter the space, the secondary market gains more volume. Electrify America continues to tackle the second barrier: availability of chargers. As such, the model is designed in part to understand how to best resolve this barrier to adoption. Therefore, important features to the model include traffic and travel patterns, socio-economic data, and pre-existing charging stations. To summarize the model at a high-level (see figure 11), it looks for locations with high EV traffic that support key travel routes (long distance drives, commuting patterns, retail trips, etc.), are not near pre-existing stations, and in areas that may be newer to the EV adoption space.

Figure 11: Site model categories

5.4.3 Investment Details for Network Growth

Electrify America has spent the first three cycles of the investment program focused on rapid buildout of cross-country routes and metro area charging to support ZEV adoption. While the DCFC market changed drastically in the past five to seven years, with several new market entrants also building out charging networks, Electrify America continues to operate an open national network that truly enables cross-country travel. As a result, it continues to see a substantial increase in usage across the network.

As Electrify America looks to the final cycle of this investment program, it plans to continue the work to transition from a period of rapid buildout to a more measured approach balanced with re-investment required to sustain and enhance the existing network. Public outreach as well as internal customer sentiment assessments continue to emphasize the importance of availability and reliability—it is an insufficient solution to focus solely on building more stations absent a robust plan to sustain and enhance the existing stations.

Electrify America intends to continue expanding its network of charging stations each year and continues to develop a variety of funding mechanisms to achieve this goal. This may include self-generated cash flow, external investments, incentive programs, and other sources of income.

Using the Electrify America site selection model, the following locations have been selected as potential areas where new stations may be built. In Cycle 4, Electrify America continues to increase the average number of chargers installed at a station to meet the growing demand. Where possible, Electrify America intends to build stations with 10 or more chargers. However, real estate and power constraints may make this infeasible in some locations. As such, the final number of stations will vary based on how many chargers are installed at each site.

Figure 12: Low and high ranges of site locations

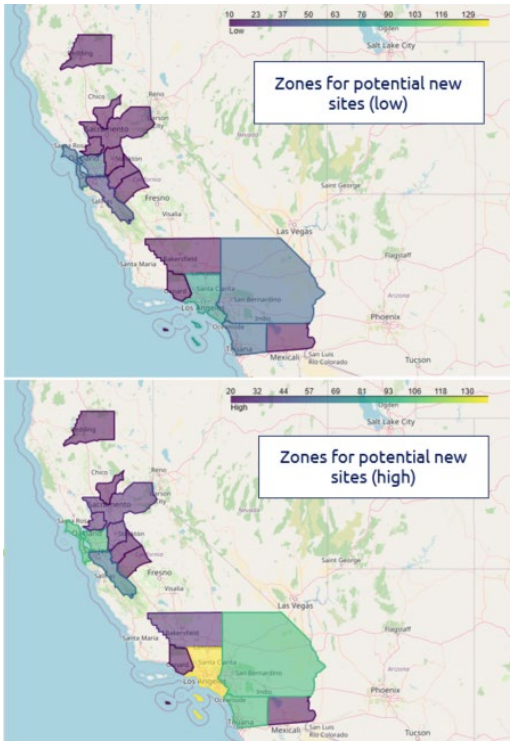
CBSA	Low	High
Bakersfield, CA	10	30
El Centro, CA	10	20
Los Angeles-Long Beach-Anaheim, CA	80	140
Merced, CA	10	20
Modesto, CA	10	20
Oxnard-Thousand Oaks-Ventura, CA	10	20
Redding, CA	10	20
Riverside-San Bernardino-Ontario, CA	50	100
Sacramento-Roseville-Arden-Arcade, CA	10	30
San Diego-Carlsbad, CA	50	100
San Francisco-Oakland-Hayward, CA	50	100
San Jose-Sunnyvale-Santa Clara, CA	50	60
Stockton-Lodi, CA	10	30
Vallejo-Fairfield, CA	10	30
Yuba City, CA	10	20
TOTAL	360	740

The low and high ranges are based on the modeling described previously and reflect the anticipated gap between growth in supply and demand in EV charging. The actual value for each area will be based on the ability to secure real estate, power, permits/approvals, etc. that are necessary to build a site. Electrify America will target the middle of each range, but due to emergent limitations or opportunities may end at the higher or lower end of the range for any particular area. Electrify America intends to prudently spend the budget amount for construction

of new sites, and the final number of chargers and sites built in Cycle 4 will vary based on the costs incurred.

Electrify America will continue to strive to achieve the requirement that 35% of spending benefit disadvantaged or low-income communities. Utilizing its current methodology, more than 50% of Electrify America's public ultra-fast charging stations at every stage of development are in disadvantaged or low-income communities, exceeding the 35% target. As such, Electrify America continues to be intentional about disadvantaged and low-income community investments through education, access, and awareness initiatives.

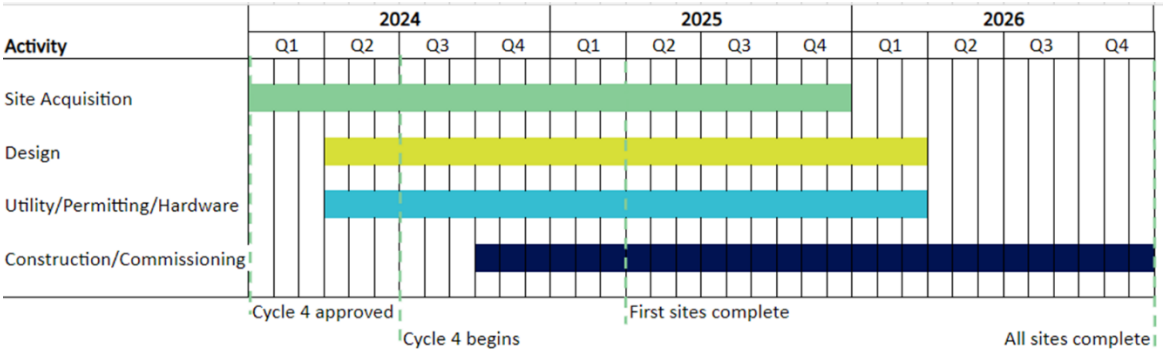
Figure 13: Zones for potential new build in California (low)
Figure 14: Table of proposed areas for chargers to be built in California (high)



While traffic and use patterns vary across space and time, locating chargers at highway exits often coincides with other retail and restaurants, presenting an attractive array of amenities within walking distance. Stations that can serve both highway and local demand also benefit the long-term viability of the site and best support EV adoption. For sessions where there is location data available, almost 50% of Electrify America highway sites predominantly serve customers located within 15 miles of that station. Further, when looking at all stations (highway and metro stations) located in disadvantaged or low-income communities, 45% of these stations predominantly serve customers located within 15 miles.

The future of EVs is dependent on a reliable and available network, which is the primary focus of Electrify America during Cycle 4. In addition to this, as manufacturers develop high powered EVs, Electrify America stations must also be equipped with high powered, balanced chargers to keep up with the industry.

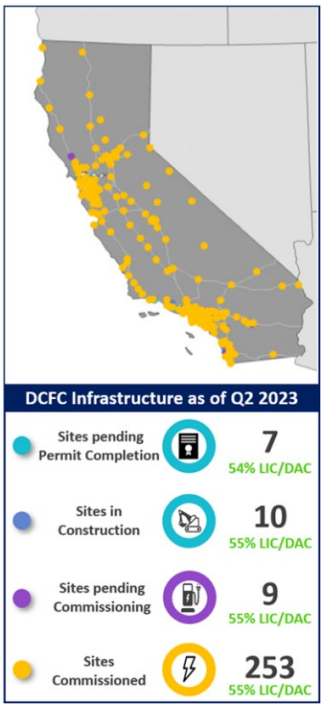
Figure 15: Timeline of site completion



5.5 Public charging must be fast to support continued EV adoption

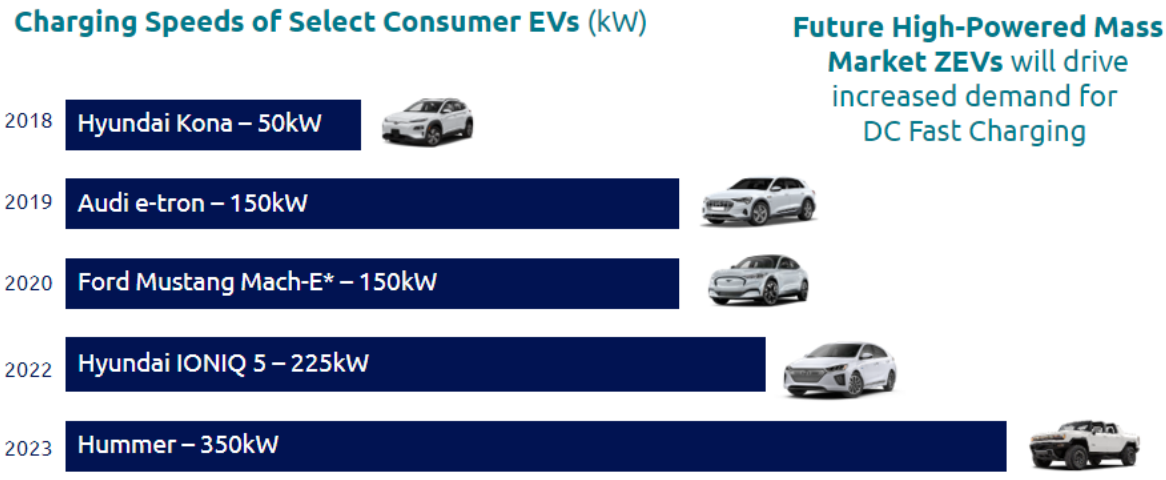
While EV adoption is nearing the tipping point that will lead to mass adoption, concerns related to charging speed continue to increase, despite available vehicles offering higher charge power ratings.[26] The customer expectation for the charging experience is informed by the gas station fueling experience. Particularly for long trips, fast charging is critical to deliver a similar travel experience to internal combustion engine vehicle drivers in terms of dwell time, without adding hours to the total travel time for charging stops.

Figure 16: Construction Map



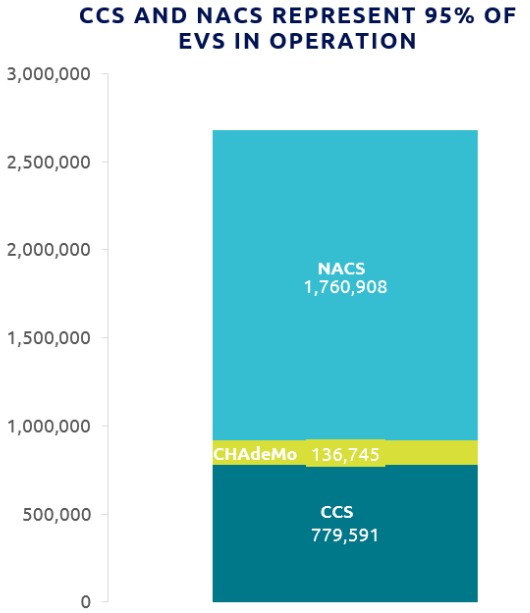
Electrify America's 350 kW Gen 4 hardware continues to be future-proofed and allows the fastest charging vehicles (e.g., IONIQ 5 at 225 kW[27]) to fully leverage the high-power charging architecture of the vehicle. Older generations of hardware would sometimes result in only one 350 kW capable charger per site. Gen 4 hardware allows every charger at the site to operate at 350 kW without having to rely on each driver to identify the appropriate charger for their vehicle. Electrify America's continued upgrading of equipment will enhance the 350 kW offering, which helps to solve both charging speed as well as reducing queueing/wait times by speeding up the charging process. Balanced chargers that can supply up to 350 kW between two vehicles are also more cost-effective than two dedicated 350 kW chargers, while still delivering high-powered charging to meet the needs of EVs today and over the life of the charger.

Figure 17: Charging Speeds



[26] Plug In America, "2023 EV Driver Survey: A Strong Year For EVs, but Charging Reliability Needs Improvement"
[27] InsideEVs, "Hyundai Ioniq 5 Amazes: Real Fast Charging Session Data Analyzed"

Figure 18: CCS and NACS in vehicles in operation



5.6 The Evolving Landscape of Charger Standards

North American Charging Standards (NACS): At the time of writing this investment plan, the North American Charging Standard (NACS) is under review by SAE as part of the standards forming process. In May and June of 2023, Ford and GM respectively announced that their EV customers would gain access to the Tesla supercharging network, and the companies would add the NACS port to future Ford and GM electric vehicles. Other automakers followed, and in response to the announcements, most of the major charge point operators also announced that they would incorporate the NACS connector on their chargers. Electrify America will continue the use of the CCS-1 plug standard, but will also add NACS connectors to its DCFC network in support of its commitment to enable the adoption of EVs for the drivers of today and the future. Electrify America will work to offer the NACS connector at existing and future charging stations by 2025 to make charging as convenient as possible for EV owners. Electrify America will also continue to monitor industry changes and will adjust its plans accordingly to best serve the EV charging population.

CHAdeMO The demand for CHAdeMO charging is on the decline as CHAdeMO-equipped vehicle sales continue to decrease through 2023 (see Figure 19 below). Electrify America's internal data shows that the proportion of kWh throughput on CHAdeMO versus CCS has declined over 95% since 2018. Importantly, today there are CHAdeMO charging stations within a 5 to 25 mile radius of an Electrify America station. New stations will not include CHAdeMO connectors, and Electrify America proposes to remove CHAdeMO connectors when upgrading a station if there is another CHAdeMO charging option within five miles of that site. The maintenance of a single CHAdeMO connector on a Gen 4 site increases not only maintenance costs, but necessitates additional storage to house supplies, manage inventory, and even can require a separate field team. This would dilute Electrify America's focus from the primary goal of station reliability upgrades for this cycle.

Figure 19: Decline of Utilization on Electrify America CHAdeMO chargers

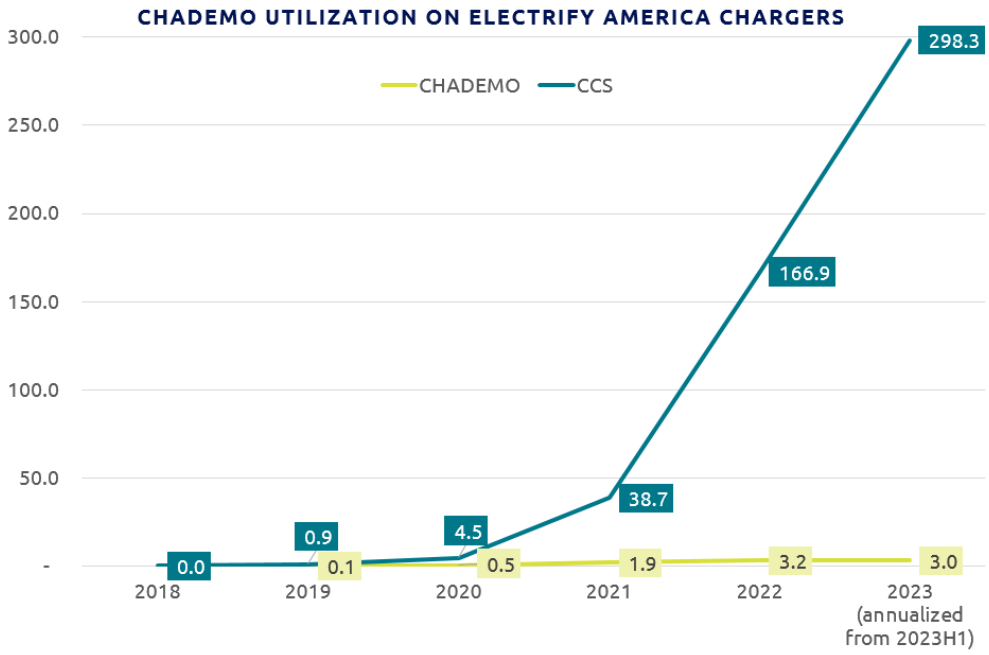


Figure 20: Decline of CHAdeMO vehicles

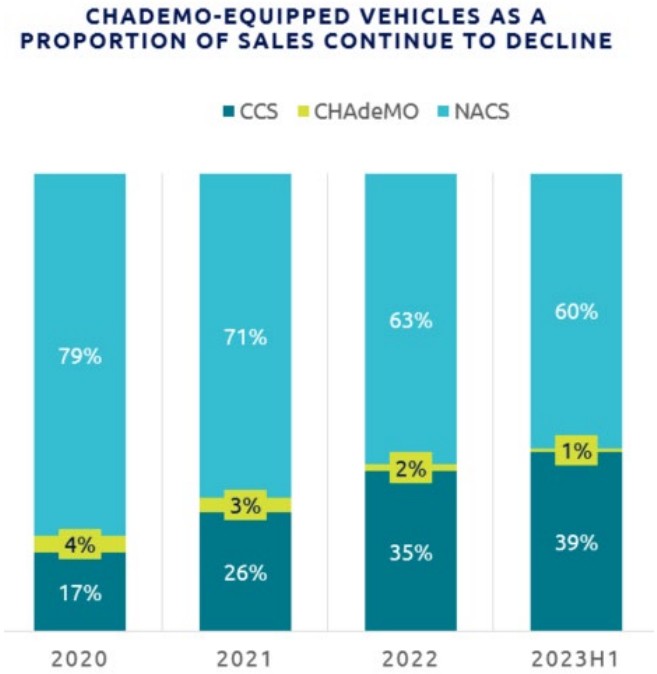


Figure 21: Case study on Electrify America site 210016 in Los Angeles, CA (April 2023 Utilization: ~33% site level; ~6% CHAdeMO) Sources: April 2023 Utilization data (Electrify America) & External CHAdeMO sites (Alternative Fuels Data Center)

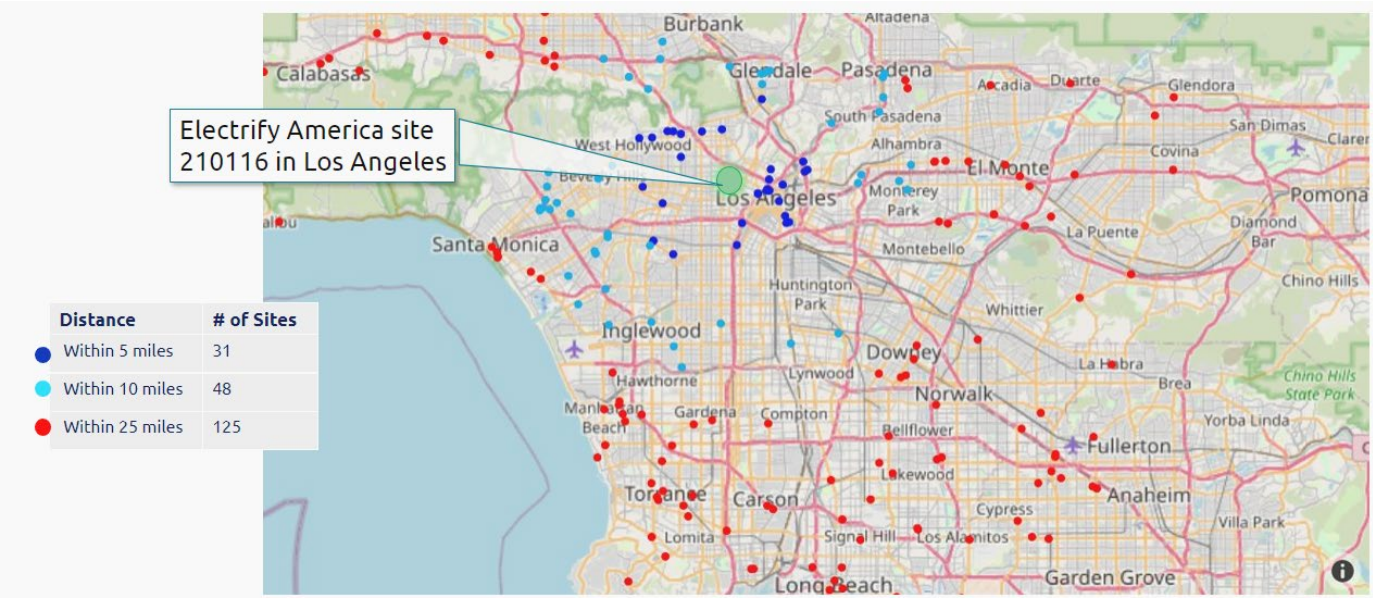
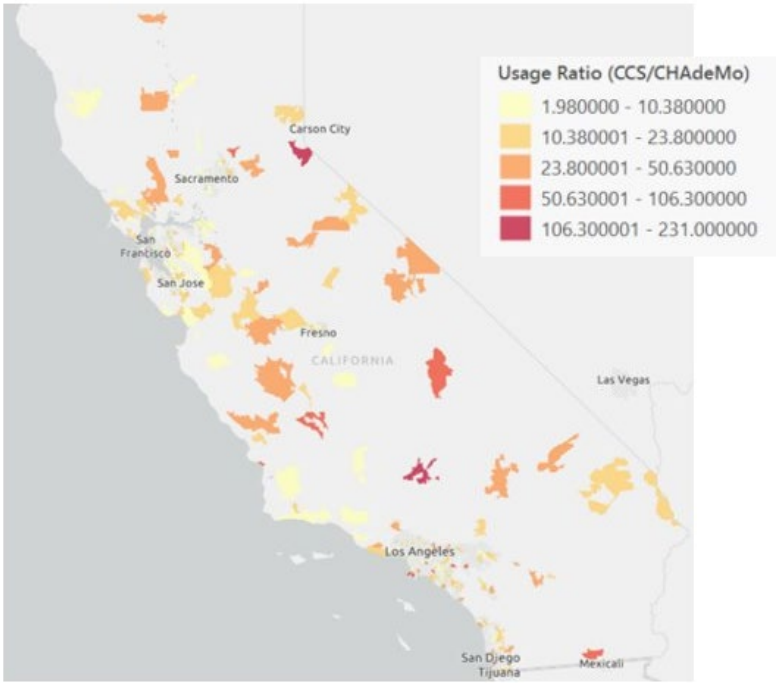


Figure 22: Usage Ratio in kWh per CHAdeMO Chargers vs kWh per CCS Charger -- I.e. CCS chargers dispense 1.98 - 231x more kWh than CHAdeMO chargers.



5.7 Infrastructure Investment Timeline and Milestones

As described in section 5.3, Electrify America will focus more of its investments on station reliability upgrades in Cycle 4, and invest in fewer new stations in California, compared to previous cycles. Since Cycle 1, Electrify America has learned from extensive experience the process and costs involved in efficiently installing EV charging stations across the United States. Deploying DCFC stations can be complicated since it requires substantial coordination between real estate owners, hardware vendors, construction contractors, utilities, permitting agencies, and Electrify America's own internal teams. To deliver the investments detailed in this section, Electrify America undertakes a range of activities including:

- Ordering equipment
- Developing new property leads
- Validating the suitability of multiple property leads per station
- Negotiating and signing lease or license agreements (or, where appropriate, purchasing property)
- Developing permitting/pre-construction packages
- Filing permits
- Warehousing equipment and performing quality assurance/quality control
- Securing permit approval
- Preparing the station site for construction
- Delivering equipment to the site
- Constructing the station
- Landscaping
- Coordinating with the utility on the grid/inspection and any additional utility preparation including new transformers or upgraded substations
- Commissioning

For Station Reliability Upgrades

- Ordering equipment
- Filing permits (if applicable)
- Warehousing equipment and performing quality assurance/quality control
- Securing permit approval
- Preparing the station site for construction
- Delivering equipment to the site
- De-constructing the existing station
- Constructing the replacement station
- General site maintenance (if needed)
- Commissioning

It can be difficult to estimate a standard timeframe required to go from securing a potential DCFC station to having it ready for customer use due to major station-by-station differences in real estate availability, utility capacity considerations, utility interconnection and energization timelines, local permitting agencies' timelines, required easements, and other often unforeseen business factors.

To aid in efficient roll outs, Electrify America has developed national portfolio agreements with major real-estate holders including Target, Walmart, Simon Property Group, Brixmor, Sheetz, Bank of America, and others. Partnering to install stations in the parking lots of these storefronts

reduces the time spent brokering unique contract agreements and negotiating over station configurations, while providing Electrify America with real estate in some of the most challenging charging station siting markets. Over the last three cycles, Electrify America has also focused on building constructive relationships with local utilities and permitting agencies. Electrify America has learned that these business-to-business relationships are essential for more predictable and streamlined station deployment.

Continuing a practice already begun in prior cycles, Electrify America will work closely with federal departments, state agencies, and local governments to improve charging infrastructure planning and deployment, to identify station site leads, and to improve processes such as permitting, easements, utility interconnection, and other factors that slow down charging infrastructure installations. These conversations also help identify other charging infrastructure programs or private/public funding opportunities that could be leveraged in parallel with Electrify America's investments to further increase the net funding for EV charging infrastructure.

Electrify America plans to begin development of the first Cycle 4 station reliability upgrades as soon as the California ZEV Investment Plan is approved by the Board at the CARB hearing. If this determination is made prior to the start of Cycle 4, specifically no later than six months prior, Electrify America will be able to conduct new RFPs, negotiate contracts, place orders for equipment, secure station sites, and begin other key development activities in advance of the beginning of Cycle 4. Based on this schedule, by Q4 2024, stations that have undergone reliability upgrades are expected to be online, with many additional sites well on their way through the development stage. In California, the preliminary planned rollout of Cycle 4 DCFC sites to be upgraded in Cycle 4 is estimated to be around 490 chargers.

5.8 Maintenance Plan for Infrastructure

Maintenance of the charging infrastructure is a crucial investment for Electrify America. To provide a reliable customer experience, chargers and stations undergo regular inspections, repairs and preventive maintenance services. Electrify America relies on contractual maintenance agreements to minimize downtime and keep sites operational and available. Skilled technicians promptly address any issues that may arise, ensuring the chargers are at acceptable uptime percentages. Charger maintenance includes software and hardware updates to keep chargers compliant with regulations and enables functional payment systems.

Pre-deployment maintenance: At Electrify America, maintenance and customer experience starts long before chargers and technology are deployed in the public domain. Electrify America's Center of Excellence testing lab allows the team to test new hardware and software releases before they roll out nationwide. In addition, Electrify America works closely with partners from nearly all automotive manufacturers to test upcoming vehicles before they hit the market and ensure any charging-related bugs are addressed prior to a customer reaching an Electrify America station.

Staff Training: Electrify America also invests significant resources in training its staff and the staff of its vendors. Electrify America has developed a curriculum to teach technicians how to safely and effectively perform both routine preventative and emergent maintenance on chargers. While the specific details of this program are proprietary, this program is a critical element in providing industry-leading service. All routine preventative, campaign, and emergency maintenance is conducted by in-house field service engineers and a team of contractors selected through a competitive bid process. Before the contract ends, or as needed,

Electrify America will solicit competitive bids to ensure no lapses in maintenance coverage for 10 years from the Partial Consent Decree effective date.

Recurring Preventive Maintenance Checks: Electrify America sends on-site field service engineers every six to twelve months. Preventive maintenance checks are based on manufacturer requirements, plus experience and best practices Electrify America has adopted since Cycle 1. The dispensers and power cabinets are checked for both external and internal maintenance issues. General site and switchgear are also assed to ensure hardware is operating at compliant levels. Results are reported back to the Network Operations Center to ensure issues are handled. Response time is dependent on issues urgency categories, such as Low, Normal, Critical, or Emergency.

Internal Field Service Engineer (FSE) Program: To help in reducing long duration outages, Electrify America is developing a team of internal FSEs to further improve response times to maintenance issues. The pilot program currently has engineers in both northern and southern California, and 8 other markets in the U.S. Electrify America FSEs currently supplement repair vendors to expedite complex repairs, but at the completion of program training, they will primarily be the engineers making repairs to be supplemented by vendors to maintain service level performance times.

Supply Chain Maintenance: It is an integral piece of maintenance to have successful supply chain management. The Electrify America supply chain team has contributed immensely to improving service lead times. The newly expanded warehouse and distribution capabilities have improved turnaround time for parts shipment and extensive efforts have been undertaken to proactively monitor inventory levels.

Contact Center: Since Cycle 3, all public stations are marked with a toll-free customer service hotline. The Contact Center has received repeated praise from consumers for its customer service. Calls received by the Contact Center include customer charging issues, payment issues, and troubleshooting. If there is a persistent issue or cause for concern, the call is reported to the appropriate operational team for further investigation and resolution. Agents and operators have access to real-time station status information and can perform tasks such as reviewing unit performance history, initiating a charge, resetting a charger, or other issue resolution tasks. The Contact Center can resolve most customer-related issues by receiving and triaging phone calls from customers. Ultimately, while total operating costs are increasing, the business continues to achieve operating leverage as the total usage grows much faster than costs. Since its inception, the average wait time to speak with a Charging Specialist was just over one minute. For non-English speaking customers, a translation line with three-way service is available to facilitate communication between the customer and the agent. Electrify America's customer communication channels include phone, email, live chat, social media, via the Electrify America app, or via an OEM phone app.

Network Operations Center (NOC): For customer issues that require further technical assistance, Contact Center agents work with Electrify America's NOC to identify a solution for the customer. The NOC team proactively manages the network by conducting daily sweeps of safety concerns and assesses chargers based on their uptime status. Electrify America also performs various status audits on the network related to Plug&Charge, security cameras, payment methods, and others. Additionally, the NOC team conducts root-cause analysis of customer issues, develops solutions with hardware manufacturers, functionally operates and

monitors charging assets, supports maintenance service personnel, manages field maintenance deliverables, drives key performance metrics, reports network trends, and works to maximize the value of equipment and service warranties.

Figure 23: Customer Support Center and NOC and Field Service Interaction

Work Order Maintenance: Any call to the call center or NOC that can't be resolved remotely automatically gets converted into a work order that conforms to the required timelines defined in Electrify America's service level agreements. Work orders are scrutinized to ensure the best vendor is dispatched to get the issue resolved properly the first time.

Continued Quality Assurance Maintenance: When there are no active work orders for repair and all preventative maintenance activities are up to date, Electrify America's internal FSEs conduct Quality Assurance visits to their assigned sites to proactively identify unreported issues or address concerns before a failure occurs.

Future Improvement measures: Efforts are underway to combine Electrify America's current centralized monitoring and management of sites with a decentralized team assigned to specific locations, which will enhance continuity and accountability and resolve issues more quickly.

5.9 Pricing, Interoperability, and Open Access

Electrify America's business model is to own and operate EV infrastructure, as will be the case with Cycle 4 ZEV investments, though select investments may be handled under different ownership/operating structures as required for specific locations and use case needs. At stations where Electrify America owns and operates the infrastructure, pricing will be a function of specific inputs, including utility costs, station capital and operating costs, and competitor pricing for subscription and rack rate products. Electrify America will set and adjust prices as necessary to reflect these inputs and drive toward a sustainable business model that offers fair and reasonable value to consumers.

The creation of an open standard around the NACS plug will enable Electrify America to better serve the entire EV population. While the exact plans for Ford, GM, and other automakers are not public, Electrify America will continue to develop the necessary technology to deliver high power charging via the NACS connector. Tesla, GM, and Ford account for 70+% of EV sales in the U.S. As other automakers transition to NACS, the proportion of vehicles with NACS connectors will likely increase.

Since the announcement of adoption of NACS by Ford and GM, Electrify America has dedicated engineering teams to focus on NACS Implementation. All these efforts at the time of writing this document have begun and will run through 2023. The teams will be reevaluated as the industry standards evolve and Electrify America will pivot as needed.

More broadly, at the time of writing this document as of October 2023, SAE and CharIN are in the process of establishing an open standard around the NACS connector. In its current form, there is no NACS “standard,” as no standards body has published or recognized the design and technical specifications. To become a standard, the design must go through a standardization process by a standards body such as SAE or CharIN. Becoming a published standard is necessary to provide certainty, reliability, and consistency around the connector design/interface, and is also necessary for third party (non-Tesla) manufacturers to further develop around the NACS connector. Liquid-cooled cables to enable high power charging, for example, will require further development work by EVSE manufacturers. Once a standards body has formally accepted and published a standard around NACS and it is no longer a proprietary design, Electrify America understands the NACS-enabled chargers/cables will be a creditable spend as a published standard.

Electrify America will continuously evaluate the evolving landscape of non-proprietary connectors and make investments reflective of the growing EV needs. Regardless of any potential upcoming transition, Electrify America will continue to support the CCS-1 connector while EV charging demand supports it. Electrify America will continue to work closely with automakers to ensure interoperability between new vehicles, existing Electrify America chargers, and future NACS-enabled chargers.

Electrify America operates a truly open network—open to vehicles from all automakers, open to multiple payment methods, and built on open and non-proprietary standards. Electrify America’s public DCFC stations are all equipped with credit/debit card readers, and Electrify America believes that open access to charging stations is best guaranteed through credit card readers. Electrify America’s network of ultra-fast chargers also can accept multiple payment methods, including payment through the user-friendly Electrify America app, apps developed by other automakers, and even payment via NFC wallets such as Apple Pay or Google Wallet. The hardware is also equipped with RFID capability. Electrify America's stations in California meet all the standards of SB 123 (Chapter 52, Statutes of 2023); no membership is required to use Electrify America stations, all prices are provided to customers in dollars per kWh and a toll-free number is provided on each charger to allow customers the option to initiate charging sessions by phone.

Importantly, Electrify America’s stations are the first in the United States to be deployed with “Plug&Charge” capabilities under the International Electrotechnical Commission’s ISO 15118 standard, which allows a customer with a capable CCS vehicle to simply plug the vehicle into the charger and initiate a charge—an experience even simpler than refueling at a gas station.

Electrify America also supports open protocols including Open Charge Point Protocol (OCPP) that allow for more standardized communication between different chargers and networks. Electrify America will work to maintain OCPP compliance and other measures to help maximize interoperability, a term that describes the ease of communication between the charger and the network it is on. In addition, Electrify America’s public stations will be equipped with back-end systems that can use Open Charge Point Interface (OCPI) 2.1 to communicate with other networks, when a business agreement is secured. Electrify America supports the use of a common, non-proprietary communication interface that does not require use of any one firm’s intellectual property or mandated contractual terms among private sector actors.

Through the ability to accept multiple payment methods and a strong focus on publicly accessible infrastructure, Electrify America will continue to build a highly interoperable network that provides access to as many consumers as possible.

5.10 Other Unanticipated or Emergent Investment opportunities

Throughout Cycle 4, if Electrify America is presented with any specific, creditable, and sustainable investments in eligible ZEV infrastructure as defined by Appendix C of the Partial Consent Decree, it will investigate the opportunity and consider it for investment. Any new investments would reduce the budget dedicated to the above-described infrastructure use cases in favor of the new effort. Electrify America would inform CARB staff of any reallocation of Cycle 4 funding to new ZEV infrastructure use cases not included in the Cycle 4 ZEV Investment Plan.

Electrify America has not identified concrete hydrogen investment opportunities that can be made during the Cycle 4 investment timeframe. In particular, stakeholders and industry leaders have consistently identified restrictions that prevent Electrify America investments from receiving capacity credits under the LCFS as a major barrier to the success of Electrify America investments in this segment. However, throughout Cycle 4, the company will continue to review submissions and meet with stakeholders on potential hydrogen and other investment areas. If Electrify America is presented with any specific, creditable, and sustainable investments in eligible ZEV infrastructure as defined by Appendix C of the Partial Consent Decree, Electrify America will investigate the opportunity and consider it for investment in Cycle 4. Of course, any new investments would reduce the budget dedicated to the above described infrastructure use cases in favor of the new effort. Electrify America would inform CARB staff of any reallocation of Cycle 4 funding to new ZEV infrastructure use cases not included in the Cycle 4 California ZEV Investment Plan.

5.11 Conclusion

Through its commitment to balancing new station development with reliability upgrades for existing stations in Cycle 4, Electrify America will help drive ZEV adoption through meeting customers' needs with a reliable, high-quality experience. Backed by extensive research and developed through rigorous testing, Electrify America’s Gen 4 chargers are capable of handling the demands of a highly utilized network by an increasingly diverse range of models. Through leveraging government incentives and NEVI funding, Electrify America will be able to install additional chargers, further expanding access to the network. In addition, Electrify America will continue to strive to achieve the target of 35% of spending to benefit those in low income and disadvantaged communities.

6. Public Education, Awareness, Access, and Marketing Activities

Electrify America's investment for public education, awareness, access and marketing activities for Cycle 4 is approximately $8 million.

6.1 Introduction

As Electrify America continues to grow its Education, Awareness, Access, and Marketing campaigns, the expanding and evolving EV marketplace is top of mind. Electrify America's goal for the Brand Neutral investment of this cycle is to move ZEV intenders from consideration to purchase, coupled with Electrify America's Branded marketing goal of driving station utilization. Similar to previous years of investment, Electrify America's Branded marketing will leverage the PESO (Paid, Earned, Shared, and Owned media) model to maximize the effectiveness of its efforts and build on the success and lessons learned from Cycles 1, 2, and 3.

6.2 Social Responsibility Programs

Electrify America plans to invest $5 million to help ensure a socially responsible and sustainable transition to electric transportation and ZEV charging solutions. Electrify America's education and awareness investments will include equitable and inclusive considerations such as social and environmental justice. By embracing diversity in its workforce, engaging with underrepresented populations, and promoting accessibility to ZEV technologies, Electrify America can play its part in ensuring that the benefits of this transformation are accessible to all.

6.2.1 Electrify America's Social Responsibility Strategy

Building a responsible business has always been at the core of Electrify America's mission. Its social responsibility strategy is centered on accelerating electric vehicle adoption for everyone across the U.S. Electrify America's education and outreach in communities aims to help everyone understand that an electric lifestyle is possible.

6.2.2 Low-Income and Disadvantaged Communities (LIC/DAC) Programs

Since 2018, Electrify America has made a substantial investment of $5.7 million into Low-Income Communities/Disadvantaged Communities (LIC/DAC) programs across the United States. These programs have been executed in collaboration with community-based and local organizations. The primary aim of these initiatives is to bolster awareness and adoption of EVs by establishing a presence in local communities. Through a multifaceted approach, these organizations have been instrumental in expanding access to the electric mobility lifestyle. Their efforts encompass a wide range of activities, including digital and in-person education, electric vehicle ride and drive programs, engaging events, workshops on EV incentives and financing, and grassroots community involvement. A hallmark of this program's effectiveness has been its strategic collaboration with trusted community partners. These partners are deeply embedded in their respective communities and possess a profound understanding of the unique needs and dynamics within those areas. Their involvement has not only facilitated the successful execution of these programs but has also nurtured a sense of trust and reliability within the communities, ultimately contributing to the broader mission of promoting electric mobility and environmental sustainability.

6.2.3 Previous LIC/DAC Program Partners

- Breathe Southern California
- Central California Asthma Collaborative
- Drive Clean Bay Area
- Ecology Action

- Liberty Hill
- Plug In America
- Valley Clean Air Now

Figure 24: Investments in CBOs

6.3 Cycle 4 Education and Access Programs

6.3.1 ZEV Equitable Access Program (ZEAP)

As part of Electrify America's participation in the California Air Resource Board's ZEV Equity Task Force, Electrify America will develop a new education and awareness program focused on low income and disadvantaged communities in the state of California. The new program, called the ZEV Equitable Access Program, or "ZEAP," will provide direct support to community-based organizations working specifically to drive education and awareness within California's low-income and disadvantaged communities. This investment will be in addition to the Brand Neutral education and awareness activities described below.

To deploy these funds as effectively and efficiently as possible, Electrify America plans to conduct an RFP to community-based organizations to solicit proposals for use of the funds. Respondents will be asked to demonstrate past performance in reaching these communities and propose activities that support digital and in-person education, electric vehicle ride and drive programs, events, potential EV incentives and financing workshops, and grassroots community engagement.

In addition, Electrify America will commit to allocating up to $500K of this funding for initiatives proposed by the ZEV Equity Task Force, specifically those from the Outreach and Education Working Group due to the strong alignment between the working group's objectives and ZEAP. Electrify America will collaborate with the Outreach and Education Working Group to provide specifications for projects, which will then be incorporated into the larger RFP.

Electrify America aims to deploy this capital quickly. The RFP and award process will be as follows:

July – December 2024	January – June 2025	July – December 2025
Develop & Write RFP	Release RFP	Award

Electrify America will prioritize proposals received from organizations with a strong track record of past performance in this area. As this is primarily an education and awareness activity, if for

any reason Electrify America is unable to deploy all or part of the funding as part of this program, it will redirect this budget to other approved Brand Neutral education and awareness investments.

6.3.2 Veloz Electric for All Sponsorship

Electrify America will partner with Veloz in support of their education and awareness campaign. Veloz is a nonprofit organization focused on accelerating the electric car movement through public awareness and education. Veloz works to fully realize the environmental and public health benefits of electric transportation and steer away from fossil fuels. This investment will be in addition to the Brand Neutral education and awareness activities described below.

6.4 Workforce Development Program Overview

Workforce development is a key factor in the rapid evolution of the zero-emission vehicle industry. A robust and skilled workforce is essential to drive innovation, install and maintain charging infrastructure, and provide efficient customer support. By prioritizing workforce development, the ZEV industry ensures it has the talent and expertise necessary to propel this transformative shift toward a cleaner and more sustainable transportation landscape.

In previous cycles, Electrify America has invested a total of $3.6 million in STEM and workforce development programs through community-based and local organizations across the United States. By implementing programs in local communities focused on STEM and workforce development, these organizations are addressing the demand for skilled professionals in ZEV-related fields. The approach of working with trusted community partners who are highly involved in their communities has been pivotal to this program's success.

Investments in past cycles

- Cycle 2: $1.9 million in four STEM and Workforce Development Programs
- Cycle 3: $1.7 million in four STEM and Workforce Development Programs

6.4.1 Previous STEM and Workforce Development Partners

- Ecology Action
- Los Angeles Cleantech Incubator
- National Energy Foundation
- EV Noire
- Sinclair Community College
- Valley Clean Air Now
- Acterra: Action for a Healthy Planet
- Ignited Education
- Edtunity (Formerly Capital Commitment of Virginia)

6.4.2 Cycle 4 Workforce Development Investment Overview

Electrify America will partner with organizations working to support STEM and workforce development programs and to help promote zero emission vehicles, technology, and infrastructure.

To deploy these funds as effectively and efficiently as possible, Electrify America plans to conduct an RFP to community-based organizations to solicit proposals for use of the funds.

Respondents will be asked to propose activities that address the need to educate students and the workforce about EVs and provide on-the-job vocational training.

In addition, respondents will be asked to propose activities that will educate students on EVs through a new curriculum, and those that will provide on-the-job vocational training. This will be critical to developing a workforce of future engineers, software developers, battery technicians, energy management specialists, construction managers, and a wide variety of additional jobs for which the industry will have a strong need as it continues to grow.

Electrify America aims to deploy this funding quickly and intends to issue the RFP in the first year of Cycle 4. As this is primarily an education and awareness activity, if for any reason Electrify America is unable to deploy all or part of the funding as part of this program, it will redirect this budget to approved Brand Neutral education and awareness investments.

6.4.3 Social Responsibility Investment Overview

Electrify America commits to supporting the following in California for Cycle 4:

- California Workforce Development STEM Program
- Veloz 'Electric for All' Sponsorship
- California ZEV Equitable Access Program (ZEAP)
- California Membership & Sponsorship Program

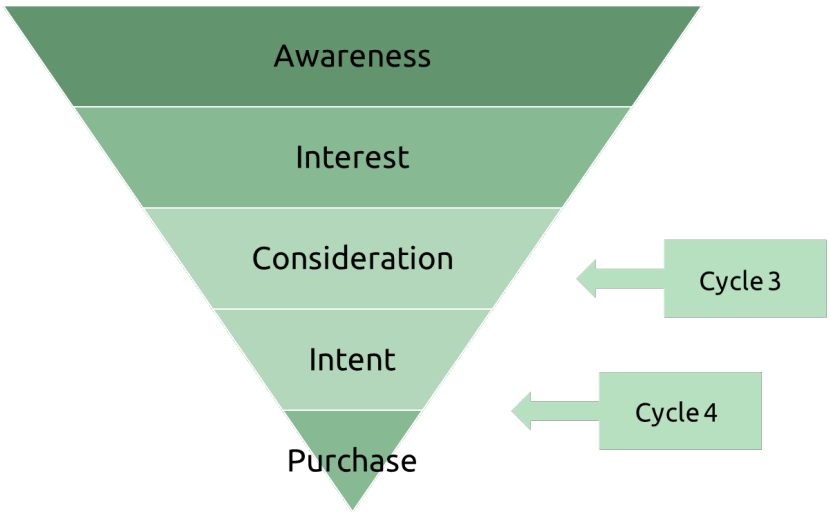
6.5 Branded Campaign: Boosting Station Utilization through Branded Marketing

Electrify America is committed to investing approximately $3 million in California for station utilization, but the company reserves the right to reallocate funds to building new sites as appropriate. If the customer experience in Cycle 4 does not meet Electrify America standards, or the public demand for new sites is warranted, funds from the branded campaigns will be redirected to infrastructure.

6.5.1 Branded Campaign: Strategy & Audience

The target audience for Electrify America's Cycle 4 branded campaign is existing EV drivers. This is a shift from Cycle 3 where Electrify America included EV intenders in its target audience. Electrify America's decision to focus on current owners comes in part from social media community management analysis and usability research that indicates continued education gaps even among the increasing current EV owner population. Growing EV model availability and adoption rates mean increasingly varied levels of experience with EVs. Simultaneously, the EV driver population will look more like a "mass market" audience (rather than "early adopter"). This will increase the volume of first-time drivers coming to Electrify America stations. In turn, the company will continue to perfect the experience for customers charging with Electrify America for the first time. A significant focus of Electrify America's branded campaign will be to meet drivers where they are on their EV education journey and support them through the channels they already utilize, either through Electrify America owned channels or through OEM and other stakeholder channels.

Figure 25: Station Utilization: Target Audience



6.5.2 Branded Campaign: Communication Pillars

Awareness

Electrify America will continue to drive awareness of its nationwide charging network to drive station utilization, exploring a variety of paid channels, including out-of-home advertising (e.g., billboards), paid social media ads, streaming audio ads, and podcasts.

Consideration

Electrify America will continue to educate and empower EV drivers with information on charging and EV ownership, including:

- Innovation and Technology
- Locations / Accessibility
- Quality Customer Experience
- Social Responsibility

Electrify America will use paid social media ads, custom direct placement, streaming audio, podcasts, display banner ads, and partner channel networks to disseminate information.

Conversion

In Cycle 4, Electrify America's goal is to convert customers from intention to action leveraging its public charging network. Electrify America will look to leverage familiar channels by working with OEM stakeholders and will continue to publicize the benefits of the Electrify America Pass and Pass+ membership programs. Paid social, customer/direct placements, HMI display ads, and paid search will be leveraged to drive charging sessions.

Loyalty

Electrify America aims to nurture and grow its brand relationship with customers to drive loyalty or repeat utilization. Electrify America will use owned channels and partner channels to promote offers and share brand storytelling. Consistent utilization is a marker of success of ZEV adoption. Customers who have repeat positive experiences charging are more likely to be long-term EV drivers and are more likely to promote ZEVs to their friends and family.

6.5.3 Branded Campaign: Media Channels

In Cycle 4, Electrify America will explore continued enhancement of the customer experience at its public charging stations by leveraging technology tools including:

- **Mobile applications and websites**
  - Electrify America will continue to maintain and expand its state-of-the-art apps and websites.
- **Social media**
  - Social channels remain an integral tool for Electrify America to engage and provide customer support with current and future EV drivers.
- **QR Codes**
  - With smartphone adoption on the rise, utilizing QR codes will allow Electrify America to provide drivers with timely and current information.

6.5.4 Branded Campaign: Media Flight Plan

Electrify America's Cycle 4 media strategy will be divided into two paid media flights with an omni-channel media buy. As in previous Cycles, after each paid media flight, Electrify America will conduct an in-depth paid media performance analysis and leverage the results to optimize future media buys and creative content for subsequent paid media flights.

This media plan is subject to informed revision, based on market impacts and evidence of effectiveness. Electrify America may make adjustments to maximize impact on driving station utilization as necessary and appropriate during Cycle 4.

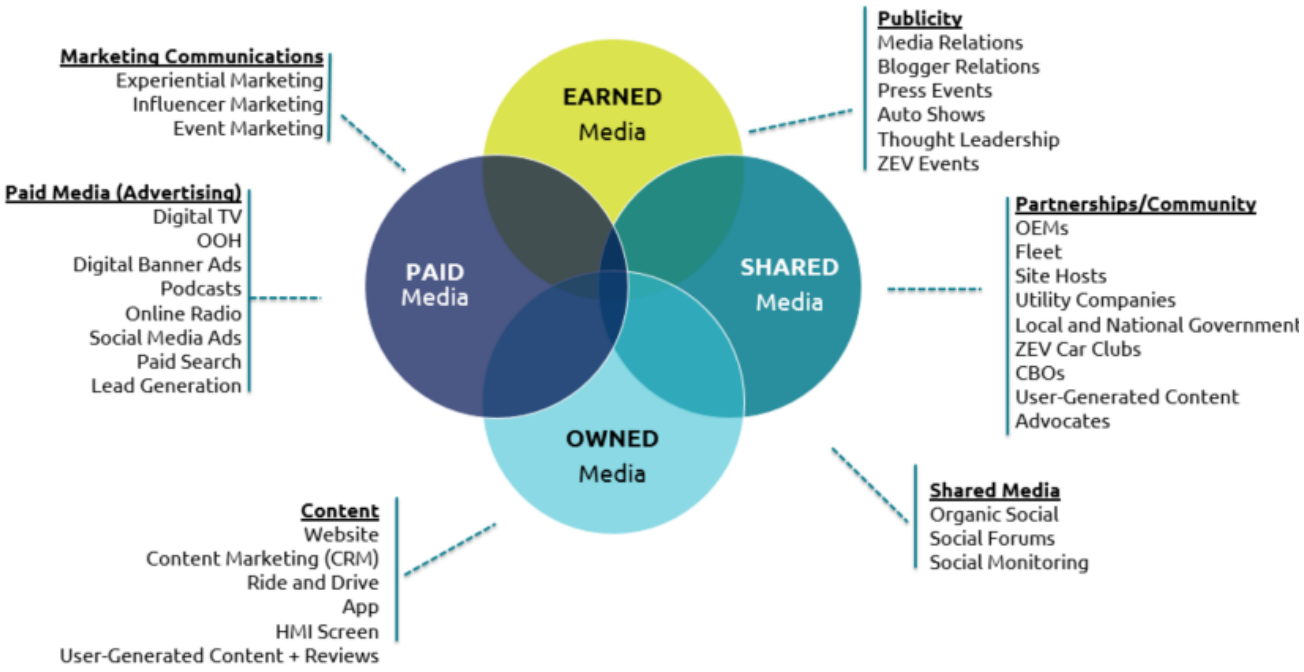
6.6 Investment Overview

6.6.1 Marketing Framework

The framework Electrify America plans to use for both its Brand Neutral education and awareness efforts and its branded marketing efforts in Cycle 4 follows the same Paid, Earned, Shared, and Owned (PESO) model used in Cycles 2 and 3. As its name implies, the PESO model relies on four distinct and complementary media channels. These categories (described below) work in concert to maximize the effectiveness and consistency of Electrify America's marketing and communications efforts. The PESO model is comprehensive but also provides enough flexibility to support a wide range of channel messaging. Given this, Electrify America plans to use PESO for both its Brand Neutral education and awareness and branded Station Utilization campaigns.

- ***P**aid Media* - Content methodically distributed across advertising channels to reach target audience. This includes traditional radio, podcasts, connected TV, paid search, digital banner ads, out-of-home advertising, and sponsored content on social media.
- ***E**arned Media* - Published coverage of a company, cause, or individual's message by a credible third party, such as a journalist, blogger, trade analyst, or industry influencer. An example includes press release content published in newspapers or magazines.
- ***S**hared Media* - Practice of content distribution through an entity's own loyal user base or audience. An example includes shared media posts on Threads, Meta, LinkedIn, and Instagram.
- ***O**wned Media* - The aggregation and dissemination of content through a company's own marketing channels. Examples include company website, email marketing, and mobile applications.

Figure 26: Cycle 4 Brand Neutral Education and Awareness and Branded Marketing Framework



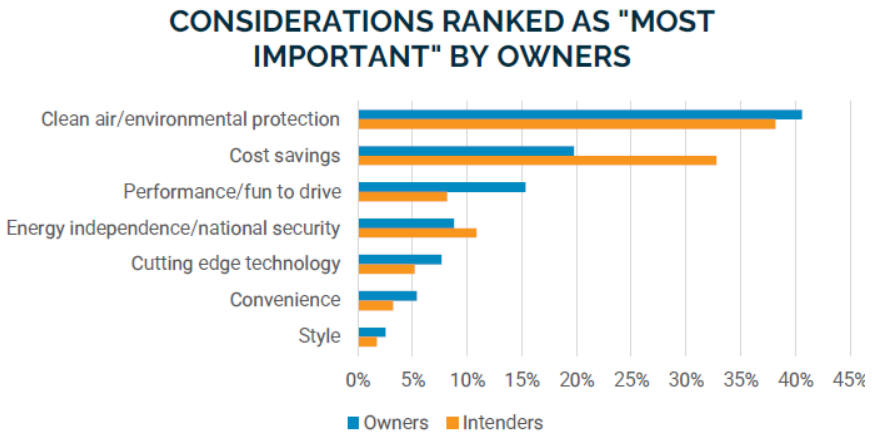
6.6.2 Media Approach

Channel Mix: Current & Emerging Trends

Additionally, Electrify America will explore investments in emerging media channels and content strategies to maximize campaign effectiveness. This will allow Electrify America to be agile and respond to rapid changes in the electric vehicle driver demographic profile. This includes:

- Hyper-Local Content: Creating region or locality specific materials to reflect the unique challenges of different climates, pricing, etc. (i.e., California messaging vs. East coast).
- Creator & Influencer Content: Leveraging the network and expertise of content creators and influencers of all sizes, Electrify America will partner to ensure educational materials on public charging have a large reach.
- Edutainment: Finding unique ways to make educational information about electric vehicles and public charging is key to grasping public attention. Electrify America plans to use forms of edutainment like digital games to encourage learning.
- Podcasts: Electrify America has seen success with having its thought leaders speak to other thought leaders on podcasts and will build on that in Cycle 4.
- Interactive Ads/Use of QR codes: Knowing that electric vehicle drivers are digitally savvy, Electrify America will leverage its charger screen HMI to present interactive ads and QR codes that lead to educational materials customers can access quickly.
- Word of mouth: As a leader in the electric vehicle charging space, Electrify America can influence the way public charging is reflected in daily dialogue (e.g., charging speed described as “Ultra-Fast” and “Hyper-Fast”).

Figure 27: Public Education & Awareness: Target Audience



6.7 Insights from National Outreach and Experience in Cycles 1, 2, and 3

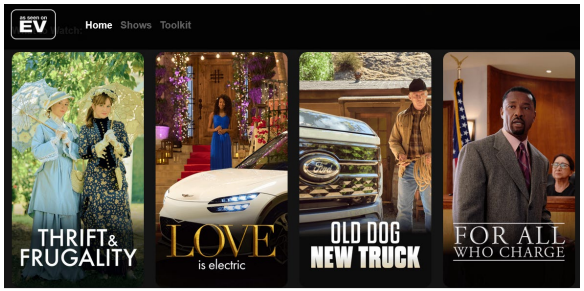
6.7.1 Insights on Brand Neutral Messaging

Across the United States, electric vehicle ownership is growing in popularity thanks to incentives that help bring down the cost of EVs, technology improvements like increased battery range, and increased reliability of public charging stations. With more OEMs committing to increase the ZEVs in their fleet, a wider range of vehicle models, classes, and vehicle cost will create ZEV interest among new customer segments.

According to Plug In America's annual 2023 EV Driver Survey, 90% of respondents say that it is "likely" or "very likely" that their next vehicle purchase will be an EV.[28] The increase in electric vehicle models available today means that vehicle driver demographics can be more diverse than ever before in this industry. A driver in the market for an EV is more likely to find a vehicle that fits their unique budget, lifestyle, and preferences. With the ever-growing EV customer segment, there remains an educational gap from internal combustion engine ownership to ZEV ownership. A recent study by Consumer Reports showed that across racial groups, experience with EVs strongly correlated to greater interest in purchasing or leasing an EV. [29] Education and outreach on a variety of new and existing platforms can help reach across customer segments.

Prospective EV drivers will need to be equipped with current information to aid them in their vehicle purchase decision-making. Because of rapid changes occurring in the industry, finding credible, up-to-date information remains a significant barrier. According to a 2022 study by EY, 71% of electric vehicle buyers use digital channels (apps, websites, and social media) to gather information about their prospective vehicle purchase.[30] Electrify America has seen success with Brand Neutral paid media in the past, however, upon further reflection of funding allocation, the decision has been made to allocate the majority of Brand Neutral marketing funds to Social Responsibility and ZEAP programs to drive ZEV education and awareness on a grassroots level.

[28] Plug In America, "2023 EV Driver Survey: A Strong Year for EVs, but Charging Reliability Needs Improvement"
[29] Consumer Reports, "Across Racial Demographics, Interest in Purchasing Electric Vehicles is Considerable, but Systemic Barriers Persist"
[30] Samant, Menaka, et al. "How EVs Are Reshaping the Car Buying Journey"

Cycle 1: Jetstones	Cycle 2: Normal Now	Cycle 3: As Seen on EV
• Campaign assets included a 30 second commercial, a 30 second radio spot (in English and Spanish), print advertisement, out of home billboards, and a campaign microsite • Campaign targeted four customer segments: Strivers, Researcher Moms, Millennials on a Mission, and Discerning Drivers  Learnings: Barriers to ZEV adoption still exist. Addressing the ZEV stigma head on is critical for future success. Pivot from national advertising to targeted digital advertising.	• Normalize ZEVs with culturally relevant marketing and messaging to counter common misconceptions • Campaign focused on addressing ZEV myths, availability of ZEVs, charging station education, and cost of ownership • Campaign targeted mass market customer segments: Driven Youth (trendy, social media based, have aspirations for affluence, influence, and altruism) and Mid Americans (routine based, family focused, want to lead the next generation)  Learnings: Digestible educational content should be surfaced early in creative messaging to combat ZEV myths and misconceptions. ZEV content should be relatable and easy to understand. Based on campaign performance, leveraging the highest performing paid media channels will be part of the media flight.	• Campaign focused on breaking through the proverbial noise and surfacing answers to ZEV misconceptions upfront in creative content • Campaign targeted a more finely tuned audience segment for maximum impact: Young Enthusiasts, Established Innovators, Auto Intenders, Non-EV Intenders  Learnings: As ZEVs break into mainstream, diversity of barriers to purchase remain, including charger availability, performance, and financial incentives.

6.7.2 Insights on Branded Messaging

With over 3,700 DC fast chargers installed across the country to date, Electrify America has established itself as a public charging leader among EV drivers. In 2022, there were 5.2 million customer charging sessions delivered across the nation, including California. Since Electrify America's launch, year-over-year customer charging sessions nationwide have increased by 250%. Through analysis of the trending conversations on Electrify America social media channels and behavioral analytics from the customer-facing website, clear areas of consumer interest have been identified around the customer charging experience. The top discussion label from organic social activity is "customer experience," and two of the four top pages on the Electrify America website center around educational content ("what to expect" and "getting started") listed in the Top Key Insights below.

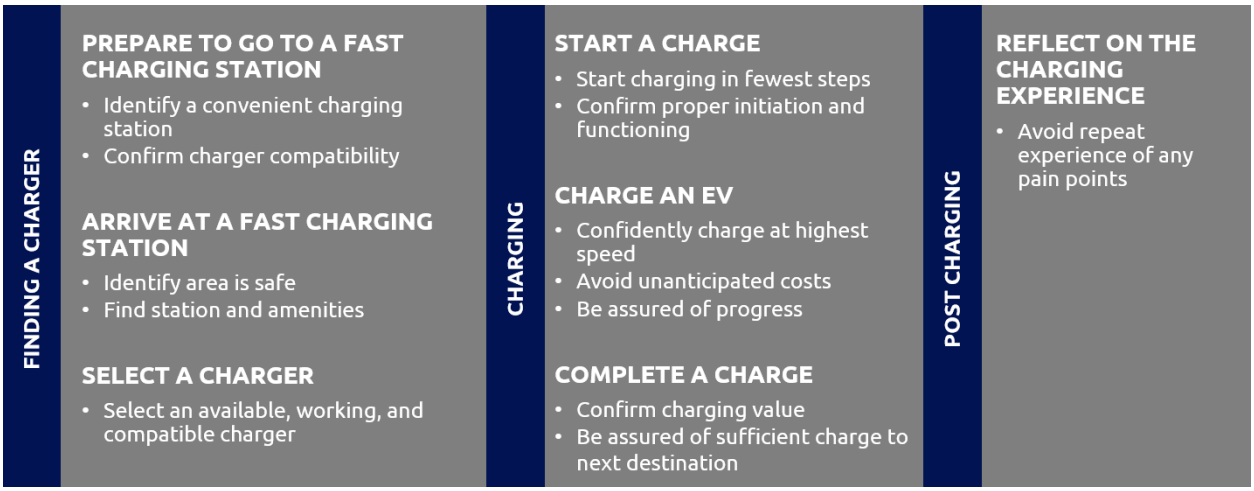
Supplemented by examining top lines from surveys, focus groups, usability research, interviews, and phone interactions, the Electrify America team has been able to grasp some of the major challenges customers face in their charging flow and map consumer sentiment throughout, shown in Figure 28. Of note, the stage of "selecting a charger" has the lowest sentiment from Electrify America's usability research findings given the high amount of uncertainty consumers report feeling when onsite at a charging station. Given the number of misconceptions and misaligned expectations between product and consumer, the findings show that building an educational ecosystem to empower EV drivers of all experience levels with knowledge on charging experience is paramount to charging confidence.

TOP KEY INSIGHTS:

- Top discussion labels[31] from social media for the Electrify America Community:
  - Quality: 22% of total volume
  - Customer Experience: 22% of total volume
  - Charger Anxiety: 4% of total volume
- Top clicked pages[32] on Electrify America website:
  - Locate a Charger: 24% of total views
  - Pricing: 3% of total views
  - What to Expect: ~1% of total views
  - Charging your EV: ~1% of total views
  - Getting Started: ~1% of total views

[31] Top discussion labels tracked from June 8, 2023 to August 18, 2023.
[32] Top pages tracked from January 1, 2023, to August 18, 2023.

Figure 28: Electric Vehicle Charging Experience Flow



7. Closing

After nearly seven years of investing in non-proprietary charging infrastructure and brand neutral marketing, there are clear indications Electrify America's efforts are helping to increase ZEV adoption. OEMs are bringing new models to market with longer ranges, higher charging powers, and larger body styles, and Electrify America's robust network of hyper-fast charging continues to enable the possibility of EVs as a household's primary vehicle.

In addition to driving ZEV adoption, Electrify America has secured major achievements in its first three investment cycles. It has built a large and powerful open DCFC network in the U.S. by acquiring, building, and commissioning sites at an unprecedented construction pace. Additionally, it has implemented a site acquisition approach that puts the customer first and targets a positive charging experience each and every visit.

However, significant work still remains. Consumers demand reliability and a consistent charging experience to continue adopting ZEVs. As part of the rapid station deployment, together with dramatic utilization, Electrify America's network is experiencing increased costs to maintain legacy chargers that were deployed in early cycles, with now-dated equipment. On education, more work is needed to familiarize consumers with ZEVs, their benefits, and the many incentives available for adopters. Finally, a focus on social responsibility will be critical to ensuring that efforts bring about the promises of environmental sustainability and equity for all in the transition to a zero-emission future.

Electrify America extends its sincere thanks to those outside the organization, including the California Air Resources Board and Environmental Protection Agency. Their guidance has been instrumental in nearly seven years of collective effort to determine the right approach to investing in ZEV infrastructure and to communicating education and awareness messaging. Electrify America is also grateful to all those who have engaged in the National Outreach Process and California public hearings. Your valuable insights, alternative views, and confirmation of key strategies are critical to the success of this unprecedented effort.

The Electrify America team remains inspired by the challenges and opportunities ahead to create an even better pathway to ZEV adoption for the United States. Electrify America trusts that these efforts will not only be enjoyed by drivers for many generations to come but also become an example of successful private and public sector cooperation within the U.S.

8. Sources Cited

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[32] Top discussion labels tracked from June 8, 2023 to August 18, 2023.

[32] Top pages tracked from January 1, 2023, to August 18, 2023.

9. Certification of Activities

Electrify America certifies that none of the activities described in the ZEV Investment Plan described above was/is:

- Approved by the Board of Management prior to September 18, 2015
- Required by a contract entered prior to the date of lodging of the Partial Consent Decree
- A part of a joint effort with other automobile manufacturers to create ZEV infrastructure
- Required to be performed by any federal, state, or local law, or anticipate will be required to perform during the planned 30-month period

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Robert Barrosa
President, and Chief Executive Officer

10. ZEV Glossary

AC Charging

The majority of plug-in EV charging is done with alternating current (AC) Level 1 (120 volts or normal household current) or Level 2 (240 volts or an electric dryer power equivalent). AC charging is typically a more cost-effective solution, with lower equipment and installation costs. As it takes advantage of longer dwell times to provide lower power to a ZEV, AC charging is an excellent solution for residential, workplace, multiunit dwelling, and other longer-term parking situations like hotels and municipal or airport parking garages.

Disadvantaged Communities/Low-income Communities

Electrify America uses definitions for low-income and disadvantaged communities established by the State of California (see below), 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.

Disadvantaged communities are designated by the California Environmental Protection Agencies utilizing the CalEnviroScreen mapping tool, which helps identify communities in the state that are particularly affected by, and vulnerable to, pollution. **CalEnviroScreen 4.0** can be found here: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Low-income communities are defined by AB 1550 (Gomez, Chapter 369, Statutes of 2016) as "*census tracts with median household incomes at or below 80 percent of the statewide median income or with median household incomes at or below the threshold designated as low income by the Department of Housing and Community Development's list of state income limits adopted pursuant to Section 50093*". The **Revised State Income Limits for 2021** can be found here: https://www.hcd.ca.gov/grants-funding/income-limits/state-and-federal-income-limits/docs/income-limits-2021.pdf

DC Fast Charging (DCFC)

Direct current (DC) charging for electric vehicles allows for higher charging speeds, as DC current can be supplied directly to the electric vehicle's battery at power levels normally higher than AC charging. The higher the DC power supplied, the faster the EV can be charged, provided the vehicle is designed to handle such power. To illustrate the charging power difference between Level 2 AC and DC fast charging, a Level 2 - 7.2 kW AC charger will deliver about 27 miles of ZEV range per hour of charging, whereas a 150 kW or 320 kW DC fast charger can deliver 90 or 200 miles of electric range per 10 minutes respectively.

OCPP and OCPI

Open Charge Point Protocol (OCPP) and Open Charge Point Interface (OCPI) are communications standards that have been developed by numerous public and private ZEV infrastructure leaders. OCPP enables standardized communication between charging hardware and the charging station networks that support them, while OCPI enables communication between different charging station networks. OCPP makes it possible to change the network supporting an individual charging station at some future time if desired. OCPI, on the other hand, is the communications standard that enables commercial entities such as charging

networks or automotive OEMs to transfer charging station data between each other, such as charger availability or customer information, to enable roaming.

Plug & Charge

Plug & Charge is part of the latest revision of the CCS standard, featuring the IEC/ISO 15118 standard which prescribes the means by which a charger and network can identify and authenticate a specific vehicle. This allows for a charging session to begin automatically by simply "plugging in," without the need for supplemental membership cards or fobs.

Traditional Media vs. 'New Media'

Historically, advertising to consumers has taken the form of broad messages on television, radio, in print, or messages on physical items such as billboards or street furniture. These platforms are typically referred to as traditional media. Though this method has been generally effective at communicating messages to consumers, these platforms have limited ability to target specific audiences based on their interests and preferences compared to newer media platforms today. In the 21st century and this age of the internet, numerous additional platforms for communicating messages have emerged that allow for much more direct and effective communication to customers about products and services such as social media advertising and paid search. These platforms are considered 'new media.'

Zero Emission Vehicle (ZEV)

Under Appendix C, the following three vehicle types are considered Zero Emission Vehicles:

1. An on-road passenger car or light duty vehicle, light duty truck, medium duty vehicle, or heavy duty vehicle that produces zero exhaust emissions of all of the following pollutants: non-methane organic gases, carbon monoxide, particulate matter, carbon dioxide, methane, formaldehyde, oxides of nitrogen, or nitrous oxide, including, but not limited to, battery electric vehicles ("BEV") and fuel cell vehicles ("FEV");
2. An on-road plug-in hybrid electric vehicle ("PHEV") with zero emission range greater than 35 miles as measured on the federal Urban Dynamometer Driving Schedule ("UDDS") in the case of passenger cars, light duty vehicles and light duty trucks, and 10 miles as measured on the federal UDDS in the case of medium- and heavy-duty vehicles; or
3. An on-road heavy-duty vehicle with an electric powered takeoff. ZEVs do not include: zero emission off-road equipment and vehicles; zero emission light rail; additions to transit bus fleets utilizing existing catenary electric power; or any vehicle not capable of being licensed for use on public roads.