THE GREENLINING INSTITUTE

ELECTRIC CARSHARING IN UNDERSERVED COMMUNITIES

CONSIDERATIONS FOR PROGRAM SUCCESS

Joel Espino • Environmental Equity Fellow Vien Truong • Environmental Equity Director

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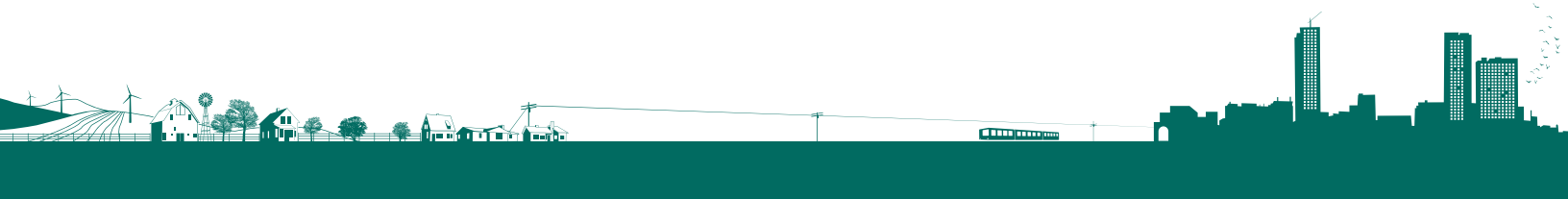

ACKNOWLEDGEMENTS

About The Greenlining Institute

Greenlining is the solution to redlining. We advance economic opportunity and empowerment for people of color through advocacy, community and coalition building, research, and leadership development.

Greenlining Environmental Equity Program

Everyone deserves a clean and healthy environment. We are creating a world in which all communities have clean air and water, where one's life expectancy is not determined by zip code, race or income. Communities of color need access to economic opportunities from the growing green economy, which represents an opportunity to bring good paying jobs and capital to communities disproportionately impacted by climate change.

About the Authors

Joel Espino, Environmental Equity Fellow

Joel was born in Gallup, New Mexico and moved to Phoenix, Arizona where his family currently resides. He graduated magna cum laude from Arizona State University with a B.A. in Philosophy, a minor in Justice Studies, and a certificate in Ethics. Joel recently graduated from UC Hastings College of the Law where he served as the Academic Chair of the La Raza Law Students Association and Acquisitions Editor of the Hastings Race and Poverty Law Journal.

Vien Truong, Environmental Equity Director

Vien Truong leads Greenlining's Environmental Equity team, working to create solutions for poverty and pollution at the state legislature, California Public Utilities Commission, and in localities around the state. She has created state programs and policies around the country to direct billions of dollars in funding and resources to the communities most vulnerable to climate change. Vien co-led efforts to pass SB 535 (de León) which directs a quarter of California's Greenhouse Gas Reduction Fund to disadvantaged communities. She also co-led the Charge Ahead Campaign, which helped pass SB 1275 (de León) California's million electric cars campaign.

Charge Ahead California is a campaign by the Coalition for Clean Air, Communities for a Better Environment, Environment California / Environment California Research & Policy Center, The Greenlining Institute, and the Natural Resources Defense Council. The campaign aims to place one million light, medium, and heavy-duty electric vehicles on California roads by 2023 and ensure that all Californians, especially lower-income households in communities most impacted by air pollution, benefit from zero tailpipe emissions.

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INTRODUCTION

The Problem

The transportation sector accounts for 38 percent of California's greenhouse gas emissions, the largest source of pollution in the state. Four out of 10 Californians live close to a freeway or busy road. As a result, Californians face an increased risk of asthma, cancer and other pollution-related health hazards.[1] There are now twice as many people dying from traffic-related pollution as from traffic related accidents.[2]

> By growing the electric car market, we can help keep investments in the state, stimulating the economy and insulating family budgets from gas price spikes.

Californians spend $70 billion on gasoline and diesel annually — $40 billion of which leaves the state in payments to oil companies and foreign oil-producing countries.[3] These oil companies have a chokehold on our democracy. They use deceptive tactics and spend billions of dollars lobbying policymakers to defeat clean energy initiatives.

The state's million electric vehicles (EV) goal can help us reduce carbon emissions, clean up the roads, and redirect investments back into our economy. By growing the electric car market, we can help keep investments in the state, stimulating the economy and insulating family budgets from gas price spikes.[4] Money spent charging electric vehicles stays in California's economy, creating 16 times more jobs than money spent on gasoline.[5]

The Response

In 2014, Governor Jerry Brown signed SB 1275 (de León) into law. SB 1275, also called the Charge Ahead Initiative, sets a goal of one million electric vehicles on California roads by 2023. Charge Ahead aims to create a self-sustaining EV market, increase EV access in disadvantaged communities and increase placement of EVs in those communities. This initiative also directed the California Air Resources Board (ARB) to create electric vehicle carsharing pilots in low-income and moderate-income communities.

The U.S. has seen tremendous growth in shared-use mobility services over the past decade. This expansion, however, has not yet reached underserved communities. Low-income households could greatly benefit from the cost-savings of sharing otherwise underused assets, as these communities lack sufficient access to public transit and "first-last mile"[6] solutions. There have been some attempts to address these transportation gaps through carsharing programs targeted at low-income and working families, including by City CarShare and Buffalo CarShare.[7]

The Charge Ahead California Campaign collaborated with Dr. Susan Shaheen and her team at the University of California Berkeley's Transportation Sustainability Research Center, the foremost experts on carsharing, to research and develop recommendations to inform ARB's carsharing pilots.[8] This report is based on that research.[9]

Methods

The Transportation Sustainability Research Center (TSRC) interviewed carsharing company experts with experience serving low-income communities, an insurance industry expert with substantial experience working with carsharing companies, and leaders of community-based organizations (CBOs).[10] These entities brought unique insight in identifying best practices that can be encouraged through government regulations. These recommendations can guide program design and are summarized at the end of this report. Interviewees helped inform four major policy areas: (1) outreach; (2) infrastructure; (3) insurance; and (4) credit/payment. Interviewees offered their expert opinions and recommendations for how to successfully implement low-income carsharing programs.

Goal

The following sections address both the potential benefits of carsharing programs in low- and moderate-income communities and specific elements essential to making such programs work. Low-income communities and communities of color are hit first and worst by climate change and volatile gas prices. As a result, our goal is to inform the policy choices of carsharing operators, local governments, ARB and other entities interested in developing carsharing opportunities for underserved constituencies. We want to ensure that carsharing programs directly address the needs and concerns of these communities. If electric vehicles are going to lead California and the rest of the country away from our overdependence on oil and vulnerability to high gas prices while helping attain a clean energy economy, they will have to be adopted by and affordable for communities of color. People of color are disproportionately low-income, make up roughly 60 percent of California's population and are projected to be the U.S. majority by approximately 2045.[11]

If electric vehicles are going to lead California and the rest of the country away from our overdependence on oil and vulnerability to high gas prices while helping attain a clean energy economy, they will have to be adopted by and affordable for communities of color.

QUESTIONS & ANSWERS

Electric Carsharing Programs in Underserved Communities

Q: Why do we need carsharing programs in underserved communities?

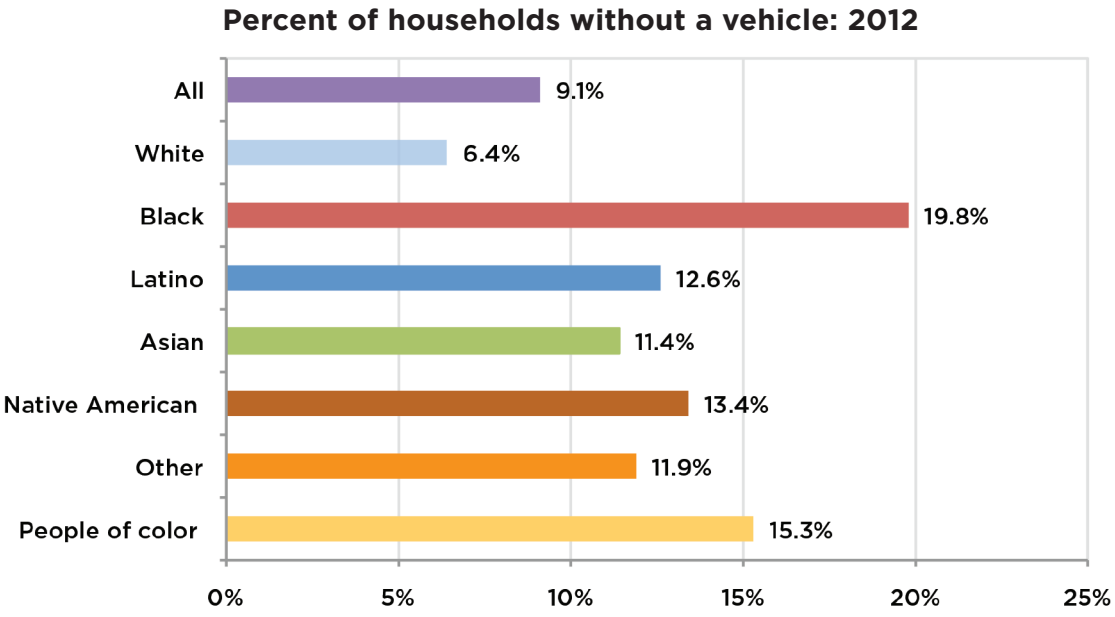
A: Low-income families are disproportionately impacted by air pollution and limited transportation choices.

California has some of the most polluted cities in the country.[12] The transportation sector accounts for 38 percent of the state's emissions, the single largest source of global warming pollution in the state. Vehicle emissions disproportionately impact underserved communities because of their proximity to freeways and busy roads. These emissions increase the risks of asthma, cancer and other pollution-related illnesses. Accelerating the shift to electric cars will improve the health for ***all*** while cutting carbon emissions.

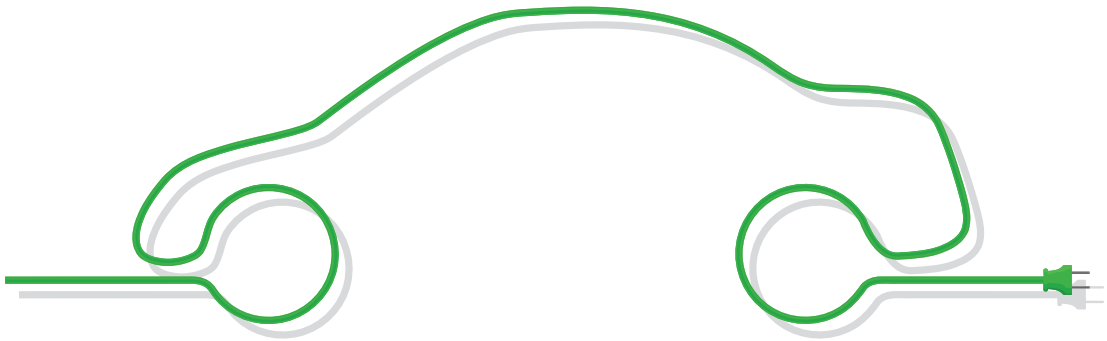
Vehicle emissions disproportionately impact underserved communities because of their proximity to freeways and busy roads. These emissions increase the risks of asthma, cancer and other pollution-related illnesses.

Throughout California, low-income and working families increasingly live farther and farther away from public transportation, even though these families rely heavily on public transit to get to work and school. Public transportation agencies typically provide bus and rail services that leave users to complete on their own the first and last portion of their trips, often termed the "first-last mile."[13] This is a challenge for poor Californians living in rural or suburban communities where bus stops and transit hubs are located miles away from their homes, limiting mobility and increasing commuting times. Inefficient and infrequent bus routes and disproportionate vehicle ownership also limit the mobility of urban working families.

Carsharing programs provide underserved communities greater transportation choices and mobility. There are two kinds of carsharing programs: roundtrip and one-way. With station-based roundtrip carsharing, individuals access a fleet of shared vehicles at designated parking locations and pay by the hour, mile or both. Users then return the vehicles to the same location at the end of the trip. In one-way carsharing, individuals can pick up vehicles at one location and return them to a different location. One-way carsharing programs can allow more mobility and are more affordable because no hourly rates are paid between trips. If these programs are made accessible and affordable to underserved areas, working families will have greater mobility.

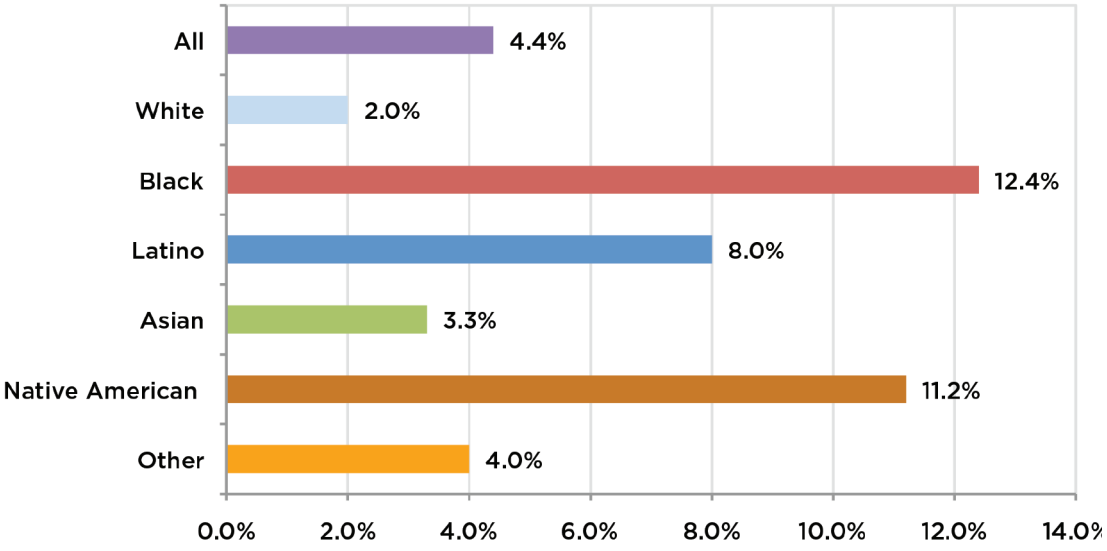


Source: IPUMS, PolicyLink/PERE National Equity Atlas, www.nationalequityatlas.org



Electric vehicle carsharing fleets in underserved communities will help clean the air, increase mobility, save families money and expose families to electric cars. Disproportionately located in underserved neighborhoods, communities of color are California's largest and fastest-growing consumer segment. The inclusion of underserved communities is pivotal to expanding the electric car market and creating a sustainable future.

Percent living in high-poverty neighborhoods by race/ethnicity: 2012



Source: U.S. Census Bureau; GeoLytic, Inc., PolicyLine/PERE National Equity Atlas, nationalequityatlas.org

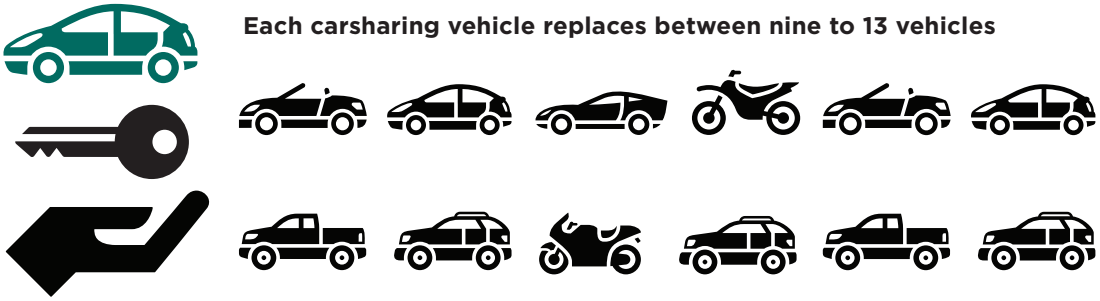
Q: What are the benefits of carsharing?

A: Carsharing has many documented benefits.

A study completed by the Transportation Sustainability Research Center at the University of California, Berkeley[14] of approximately 9,500 participants in carsharing programs in U.S. and Canada documented numerous benefits, including:

> **(1)** 25 percent of members sold a vehicle and 25 percent postponed a vehicle purchase due to carsharing across the study population; and
>
> **(2)** Each carsharing vehicle replaces between nine to 13 vehicles (including both sold vehicles and postponed car purchases);
>
> **(3)** Carsharing participants reduced both vehicle miles traveled and greenhouse gas emissions by up to 43 percent, considering both vehicles sold and postponed purchases.

Other research has indicated that households save between $154 and $435 monthly per member[15] after joining carsharing. These savings have profound benefits for families that spend a disproportionate share of their incomes on transportation.[16]



Existing Low-income Carsharing Programs

Q: Are there any examples of current low-income carsharing programs?

A: Yes.

City CarShare, based in San Francisco, California, and Buffalo CarShare, based in Buffalo, New York are great examples.

City CarShare is a nonprofit "with a mission to improve the environment and quality of life in our communities by promoting innovative mobility options."[17] City CarShare has the greenest fleet in the country, with 45 percent either all-electric, plug-in hybrid or hybrid.[18] Through its *Community*Share program, "City CarShare subsidizes membership service fees and driving costs for low/moderate-income residents."[19] City CarShare was the first car-share operator in San Francisco's low-income community of Bayview, and it has continued to expand affordable carsharing services to other low-income neighborhoods. Members save $8,400 per year in costs associated with car ownership.[20]

Buffalo CarShare is a nonprofit "community-driven organization that advances affordable and environmentally friendly transportation."[21] Buffalo CarShare's business model was developed specifically to serve demographics other than the "typical" carsharing market (i.e. well-educated, upwardly mobile 20 to 30 year-olds). The service also includes EVs in its fleet — two at present and up to four in the future. As of summer 2014, 50 percent of its 700 members make less than $25,000.[22] Buffalo CarShare estimates savings of over $377,000 on transportation costs for its very low-income members[23] and hopes to expand its services to 1,000 members by the end of 2015.

Other roundtrip carsharing organizations that have addressed the low-income market include Philly CarShare (now Enterprise CarShare in Philadelphia) and iGo Car Sharing (now Enterprise CarShare in Chicago). Three all-electric carsharing programs currently operate in California:

(1) car2go in San Diego (one-way carsharing service);

(2) DriveNow in the San Francisco Bay Area (one-way carsharing); and

(3) City CarShare's DASH in Pleasanton (roundtrip carsharing only at present).

These three programs use fleets of limited-production EVs made partially to comply with California's Zero Emission Vehicle program.[24]

These examples demonstrate how a community-invested carsharing organization can increase the mobility of underserved communities in a successful and sustainable way.

Components of a Successful Underserved Community Carsharing Program

Community outreach and infrastructure are crucial considerations in the early stages of developing a successful carsharing program geared to underserved communities. Other components like insurance, credit and payment options must be kept in mind throughout the process. The following sections discuss how these components can be successfully included into a carshare program.

Outreach and Infrastructure

Q: What information do underserved communities need for an electric vehicle carsharing program to succeed?

A: For underserved communities to accept and adopt electric vehicle technology, potential consumers must be: (see next page)

(1) Educated on pilot program services and how to use electric cars (plug-in hybrids or pure battery vehicles) and charging stations;

(2) Made aware of the carsharing program and how to combine it with other modes of public transportation to increase mobility; and

(3) Given hands-on support services to help facilitate reservations and payment, especially for those without Internet access or smartphones.

Other outreach considerations:

(1) Storefront locations for carsharing pilot programs will greatly increase program success. Storefront employees should be diverse and resemble the demographics of the target community.

(2) Advertising and hands-on support services like in-person orientations should be available in many languages to ensure community acceptance and adoption.

(3) Integrating carsharing call centers with public transit call centers can create mobility call centers that increase accessibility and usability.

(4) Community-based organizations should be the first sources tapped for outreach. In fact, SB 1275 mandates "adequate outreach to disadvantaged, low-income, and moderate-income communities and consumers, including partnering with community-based organizations," when implementing programs like carsharing.[25]

Q: Is charging infrastructure expensive and carsharing parking difficult to obtain? Will costs deter carsharing operators from developing low-income programs?

A: Yes, charging infrastructure costs and the difficulty of securing parking can both be obstacles to developing low-income carsharing programs. These cost and infrastructure obstacles can be mitigated in several ways, including through public-private partnerships and publically funded carsharing operator incentives.

A successful pilot will need charging stations and carsharing parking located within under-served communities. Carsharing companies will likely require financial assistance with the installation of commercial "Level 2" (240 volt) charging stations, the costs of which vary greatly depending on the particular site, but average around $4,000.[26] As a result, partnerships with charging station installation companies and electric utilities should be considered. Partnerships could improve the cost profile through optimal site selection and scale.

Parking for carsharing can be difficult to obtain and has limited the growth of carsharing programs. Operators must negotiate with owners of apartment complexes, businesses and local governments to secure parking. Waiving parking taxes, reducing monthly parking costs and aiding operators in obtaining parking spots through public-private partnerships are crucial to pilot program success.

iGo Car Sharing's experience is a great example of a carsharing operator creating partnerships. iGo collaborated with the Black United Foundation, local government leaders and the Chicago Transportation Authority to find parking. Additionally, local and state governments operate many programs benefiting underserved communities, creating numerous partnership possibilities. For example, the Metropolitan Transportation Commission (MTC) in the San Francisco Bay Area funds programs that develop community-based transportation programs in 40 communities throughout the Bay Area.

Carsharing operators should create government and CBO partnerships to provide underserved communities with carsharing services that can help increase their mobility and quality of life.

Insurance

Q: What insurance mechanisms and actions should be considered to mitigate costs and potential risks in creating carsharing programs for low-income families?

A: A number of mechanisms and actions can help cover costs and manage risk, including state subsidies for deductibles, "pooled risk" funds, collision avoidance technology and surveillance cameras.

There are two major sets of risks associated with carsharing: **(1)** the member's driving ability; and **(2)** theft and vandalism-related risks with operator site parking of vehicles.

Insurance Costs

There are several ways to help carsharing operators control insurance costs resulting from driver risk. First, states can subsidize all of the deductible costs in the event of an accident, which would increase the affordability of carsharing memberships for low-income individuals.

Second, state or local governments could establish a "pooled risk" fund to offset the cost of deductibles faced by low-income drivers in the event of an accident. For example, low-income members might be required to pay a fee at the start of membership to cover their deductible if an accident happens (e.g., $25), with funds also added to this pool by states. This risk-sharing fund would be attractive to insurance brokers, easing insurance burdens on carsharing operators. In California, setting up this type of risk-sharing mechanism would involve working with the California Department of Insurance and establishing a set of both standard criteria and criteria tailored to a specific population (e.g., 21 to 25-year-olds with limited driving experience). Some example criteria might include the following driver provisions (at least at the start of a pilot program):

(1) Possession of a valid driver's license;

(2) At least 21 years of age;

(3) At least 12 months of driving experience; and

(4) Previous car ownership (since car ownership suggests more driving experience, and more experience would signal less risk to potential brokers).

Third, carsharing operators could also establish different liability levels for low-income members. One recommendation is a range of $500,000 to $1 million for single-incident liability (or the state mandated minimum, whichever is greater),[27] based on the demographics (e.g., age, gender) and driving history of the member (e.g., good driving record, years of experience).

Risk Management

There are also several ways to help carsharing operators manage risk. First, operators can require potential members to have a clean driving record for several years, increasing the likelihood that the members are safe, experienced drivers and bringing costs down.

Technology-based actions may also lower risk levels. For example, 360-degree cameras could monitor carsharing lots and charging stations. Cars could also be equipped with collision-avoidance technology, including forward collision warning, automatic brake systems, lane departure warning, lane departure prevention, adaptive headlights and blind spot detection. The combination of these technologies could reduce collisions — many of which happen in parking lots — by around 70 or 80 percent. Some of these features are already a part of vehicle fleets and are expected to become standard in all vehicles within the next few years. These types of technological investments on the part of carsharing operators make more sense in the long term due to heavy start-up costs. As a result, start-up carsharing operators looking to manage risk should take a staged approach to implementing more advanced technology as cars with basic technology are turned over (which typically occurs between 16-18 months to three years). Additionally, carsharing operators might persuade local and state governments to fund or subsidize some of this technology if public funds are available.

Finally, efforts should be made to generate actuarial data from these low-income carsharing operators to document the risks associated with accidents (e.g., age of driver, location, nature of collision, deductible) involving low-income carsharing members. These data will be essential for further risk management and program cost reduction (e.g., premiums, deductibles) over time, but they may be challenging to obtain due to proprietary issues. A solution to any proprietary issues might be to create partnerships among insurers who find value in low-income carsharing data.

In summary, interested parties can take actions to help minimize insurance costs associated with carsharing operations and prevent such risks from hindering the viability of low-income carsharing programs. While the government-subsidized actions discussed would likely require ongoing public investment and management, such public investments in underserved communities are widely accepted when there is a clear public benefit.

Credit and Payment Options

Q: How can carsharing operators create a successful low-income carsharing program for consumers with weak or no credit history and limited payment options?

A: Operators could charge members upfront; state and local government programs could provide assistance.

Some low-income individuals may have little access to credit due to poor credit ratings or lack of credit history, impeding their upward mobility. Charging hourly rates upfront and holding the money with the reservation can address carsharing operator concerns of non-payment, while making carsharing services — and the opportunities they create — accessible to working-class individuals.

Local and state governments could allow public transit subsidies to apply to carsharing services and Electronic Benefit Transfer (EBT) cards to be used to pay for carsharing services. EBT cards allow state welfare departments to issue food stamp benefits and cash benefits (e.g. Temporary Assistance for Needy Families) through a payment card.[28] Depending on the program, cash benefits can be used to pay for non-food items and services such as transportation, utilities, clothing, medical care, among others.[29]

These actions would ease the need for operators to assume the risk of non-payment, while increasing the number of payment methods available to low-income members.

Location, Mixed-Fleets, One-way Carsharing and Vanpooling / Carpooling

Q: Where should a low-income carsharing programs be located?

A: Carsharing programs should be located at multi-unit dwellings (MUDs), public spaces, and in rural and urban areas.

Low- and moderate-income individuals disproportionately live in apartment complexes, rather than single-family homes. Placing electric vehicle carsharing electric in MUDs will greatly increase the mobility of low- and moderate-income families. Given the complexity of the issues surrounding utilities' role in charging infrastructure, partnerships will be needed among property managers, carsharing operators, utilities and charging station companies. Partnerships will ensure carsharing vehicles and charging stations are located in MUDs while reducing costs and administrative burdens.

Secondarily, carsharing vehicles should be placed in public spaces, such as parking spots located near parks or community centers, which are easily accessible to the targeted community. The optimal location of a carsharing pilot, however, will largely depend on the input of local community-based organizations.

Lastly, state and local governments should encourage siting of pilot carsharing programs in urban and rural communities. This will allow for more complete data collection and analysis of underserved community transportation needs. Siting decisions should also include analysis of air quality, socioeconomic factors and access to mobility options in these communities.

Q: What else should be considered when developing a low-income carsharing program?

A: Potential carsharing operators should consider the target community's electric vehicle familiarity, the current availability of EV infrastructure in the community, and the community's specific mobility needs.

A mixed fleet of pure EVs and plug-in hybrid vehicles should be deployed to ensure program success because of California's limited charging infrastructure and consumer unfamiliarity with pure battery EVs. Since pure EVs have a limited range before they must be recharged, a carsharing program with a pure EV fleet may not meet the needs of a rural, low-income community whose residents typically have to drive long distances to get to work or reach services. Plug-in hybrids can bridge that mileage gap.

Furthermore, potential low-income carsharing operators should consider creating one-way carsharing programs to provide point-to-point mobility and first-mile and last-mile connectivity. Giving working families the option to pick up an electric car from a location near their home and drop it off at a location near a public transportation hub can make programs more usable.

Parties interested in creating a low-income EV carsharing program should partner with carsharing operators with experience in serving low-income communities and in incorporating electric vehicles into their fleets.

Finally, parties interested in serving rural low-income areas should consider a clean technology[30] vanpooling/carpooling program (perhaps in addition to carsharing). Vanpooling is a form of ridesharing that saves commuters money on fuel and transportation by arranging rides on a large scale between multiple individuals who regularly travel a similar route. Generally, vanpooling vehicles can seat between seven and 12 individuals and are provided in collaboration with public and private programs. This form of ridesharing has been particularly helpful and popular among farm workers in the San Joaquin Valley. Vanpooling costs include the host vehicle, insurance and mileage from pick-up origin to drop-off destination. Through IRS Code 132(f), vanpool fees can be taken as pre-tax payroll deductions, saving participants money.[31]

The pre-tax benefit lowers an employee's taxable income (a benefit for them) and reduces the employer's share of payroll taxes. Current vanpooling options in California include VPSI, Zimride and the CalVans program. Clean technology vanpooling services can greatly increase the mobility of rural and suburban low-income residents while reducing carbon pollution. Carpooling, in which individuals share rides in automobiles, can also play a role. This approach could also be linked to carsharing. Operators like Carma Carpooling and CarmaHop[32] facilitate carpooling. There are many other carpooling services to consider as well, including 511.org, NuRide and RideScout.

CONCLUSION

Electric vehicles can play a major role in reducing greenhouse gas emissions and air pollution. Successful electric carsharing programs in underserved communities are necessary to boost the electric vehicle market and familiarize underserved communities — who are the fastest growing consumer segment — with EV technology.

Thorough evaluation and application of the specific considerations impacting low-income communities can increase the likelihood of successful, sustainable low-income electric carsharing programs.

SUMMARY OF RECOMMENDATIONS

The following recommendations will help ensure a successful carsharing program in underserved communities. Pursuant to the Charge Ahead Initiative, SB 1275 (de León), the California Air Resources Board (ARB) will evaluate and select low-income carsharing pilots and develop complementary policies and programs.[33] This report intends to inform ARB's decision-making in that process. Additionally, these recommendations are useful for potential carsharing pilot operators (e.g. carsharing companies, local governments and community-based organizations) and any party interested in creating low-income carsharing programs.

For Carsharing Operators

Outreach

- Operators should:
    - Tap community-based organizations first for outreach and optimal parking location
    - Provide education on the carsharing program services and electric vehicle and charging station use
    - Provide education on how to combine carsharing services with other modes of public transportation to increase mobility
        - Multilingual hands-on support services (such as in-person orientations) to help facilitate reservations and payment, especially for those without Internet access or smartphones
        - Multilingual advertising and outreach material
    - Create carsharing call centers and integrate them with public transit call centers, creating mobility call centers that increase accessibility and usability
    - Create storefront locations for carsharing pilot programs to increase accessibility and visibility
    - Hire diverse storefront employees who resemble the demographics of the target community

Infrastructure

- Operators should create partnerships with charging station installation companies and electric utilities; partnerships could improve the cost-profile through optimal site selection and scale

Credit and Payment Options

- Operators should consider charging drivers upfront and holding the money upon the reservation in lieu of requiring that potential members have a credit card or debit card

Insurance & Technology to Reduce Accidents and Vandalism

- Operators should consider requiring potential members to have a clean driving record for a specified number of years

- Carsharing lots and charging stations should be monitored with 360-degree cameras

- Operators should equip or phase in cars with collision avoidance technology, including forward collision warning, automatic brake systems, lane departure warning, lane departure prevention, adaptive headlights and blind spot detection; state and local governments should subsidize or fund these technologies if funds are available

- Operators should consider different liability levels for low-income members

- Operators should generate and share actuarial data from low-income carsharing programs to document the loss risks associated with low-income carsharing members

Location, Mixed-Fleets, One-way Carsharing and Vanpooling / Carpooling

- Operators should place carsharing electric vehicles in multi-unit dwellings or public places that are easily accessible to the targeted community, with input from CBOs

- Partnerships among property managers, carsharing operators, utilities and charging station companies should be created to reduce costs and administrative burdens

- Operators should encourage siting pilot programs in both dense urban areas and rural communities for more complete data collection and analysis of underserved community transportation needs

- Operators should consider air quality, socioeconomic factors and access to mobility options in siting carsharing programs (can use tools like CalEnviroScreen 2.0)[34]

- Operators should launch mixed fleet carsharing programs with a combination of pure battery electric vehicles and plug-in hybrids

- Operators should strongly consider creating one-way carsharing programs to provide underserved communities with point-to-point mobility and first-mile and last-mile connectivity

- Operators interested in serving rural low-income areas should consider vanpooling/carpooling

For Local and State Governments

Outreach

- Local and state governments should:
    - Tap community-based organizations first for outreach and optimal parking location
    - Provide education on the carsharing program services and electric vehicle and charging station use
    - Provide education on how to combine carsharing services with other modes of public transportation to increase mobility
        - Multilingual hands-on support services (such as in-person orientations) to help facilitate reservations and payment, especially for those without Internet access or smartphones
        - Multilingual advertising and outreach material
    - Create carsharing call centers and integrate them with public transit call centers, creating mobility call centers that increase accessibility and usability

Infrastructure

- Local and state governments should create partnerships with charging station installation companies and electric utilities; partnerships could improve the cost-profile through optimal site selection and scale

- Local and state governments should consider waiving parking taxes, reducing monthly parking costs, and/or aiding operators in obtaining parking spots through public-private partnerships

Insurance

- Local and state governments should subsidize all deductible costs of carsharing members
- Local and state governments should create a "pooled risk" fund to offset the cost of deductibles faced by low-income drivers

Credit and Payment Options

- Local and state governments should allow public transit subsidies to apply to carsharing services
- Local and state governments should allow EBT cards to be used to pay for carsharing services

Location, Mixed-Fleets, One-way Carsharing and Vanpooling / Carpooling

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- Local and state governments should consider air quality, socioeconomic factors and access to mobility options in siting carshare programs (can use tools like CalEnviroScreen 2.0)[35]
- Local and state governments should launch mixed fleet carsharing programs with a combination of pure battery electric vehicles and plug-in hybrids
- Local and state governments should strongly consider creating one-way carsharing programs to provide underserved communities with point-to-point mobility and first-mile and last-mile connectivity
- Local and state governments looking for carsharing operator partnerships should consider the carsharing operator's experience in serving low-income communities and in incorporating electric vehicles into their fleets
- Local and state governments interested in mobilizing rural low-income areas should consider vanpooling/carpooling

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[2] 5,726 annual premature deaths in California due to PM 2.5 and 209 from ozone (Fabio Caiazzo et al., Air pollution and early deaths in the United States, Atmospheric Environment, 2013) compared to 3,081 traffic fatalities (Selected Detail Within Leading Causes Of Death By Sex And Race/Ethnic, California Department of Public Health.)

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[5] Roland-Holst, D. (2012). Plug-in Electric Vehicle Deployment in California. Retrieved from http://are.berkeley.edu/~dwrh/CERES_Web/Docs/ETC_PEV_RH_Final120920.pdf

[6] Los Angeles County Metropolitan Transportation Authority (2013). First Last Mile Strategic Plan (draft). Retrieved from http://media.metro.net/projects_studies/sustainability/images/path_design_guidelines_draft_november_2013.pdf. Describing the problem of underserved communities having to travel long distances from their homes reach public transit hubs and travel long distances to reach their final destinations from transit hubs.

[7] Note that classic roundtrip carsharing requires individuals to pick up and return a vehicle to the same location or POD (point of departure).

[8] A campaign which includes the sponsors of Senate Bill 1275 (de León, 2014): the Coalition for Clean Air, Communities for a Better Environment, Environment California, The Greenlining Institute, and the Natural Resources Defense Council.

[9] This report and its recommendations are largely adapted from, *Carsharing for Low-Income Communities,* a report by Susan A. Shaheen, Ph.D. and Madonna Camel (both of TSRC), funded by the Charge Ahead California Campaign (copy with author).

[10] Interviewees consisted of two non-profit carsharing operators and one for-profit carsharing operator with experience serving low-income communities. CBO representatives were also interviewed, as well as an insurance industry expert with 25 years of insurance experience and direct experience in working with carsharing companies in pre-start up phases.

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The Greenlining Institute @Greenlining The Greenlining Institute

THE GREENLINING INSTITUTE
1918 UNIVERSITY AVENUE, 2ND FLOOR
BERKELEY, CALIFORNIA 94704
WWW.GREENLINING.ORG

T: 510.926.4001 I F: 510.926.4010