State of California
AIR RESOURCES BOARD

Volkswagen Settlement
California Zero Emission Vehicle Investment Commitment

California Air Resources Board's Guidance to Volkswagen on First 30 Month Electric Vehicle Infrastructure Investment Plan of the 2.0 Liter Diesel Engine Partial Consent Decree Settlement

February 2017

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I. Background

This document is guidance from the California Air Resources Board (CARB) to Volkswagen (VW). It is intended to be used by VW as it prepares its first 30 months electric vehicle (EV) infrastructure investment plan for California. This document does not modify the 2.0L Partial Consent Decree.

VW's infrastructure investment plan is one element of CARB's comprehensive, multi-prong enforcement settlements with VW. The illegal defeat devices on VW's 2.0 liter (L) and 3.0L diesel vehicles caused a myriad of problems for consumers driving the polluting vehicles and for the environment with excess pollution – both in the past and into the future, as some of these cars remain on the road.

As described below, a series of partial consent decrees require Volkswagen to take action, pay money, and make targeted investments over the next decade. This guidance focuses on the first period of the targeted zero emission vehicle (ZEV) market support investments by VW; it should be viewed in the context of the interlinking partial consent decrees designed to meet several objectives.

This guidance document summarizes CARB's overall guiding principles for ZEV investments and provides specific recommendations, expectations, and example projects. Pursuant to the Consent Decree, with the consultation and approval of CARB, VW will make the investments. The document also has two appendices. The first summarizes comments made by CARB Board members and stakeholders at two public meetings and the second provides a summary of key elements of the partial consent decrees. The archived Board Hearing is at http://www.cal-span.org/player/jwplayer/embed.php?jw_application=CARB&jw_stream=CARB_16-12-08/CARB_16-12-08.mp4&jw_playback_method=vod&playbackPosition=0&captions=, and a webcast of the public workshop is available at https://www.arb.ca.gov/msprog/vw_info/vsi/vw-zevinvest/meetings/zevinvest_wkshp_120216.mp4.

A. Court Approved Partial Consent Decrees Control All Aspects of the Enforcement Case Settlement

Judge Charles Breyer, United States District Court for the Northern District of California, was assigned to handle the nationwide litigation sparked by VW's illegal defeat devices. In a series of orders, the federal court continues to address the environmental harm, the consumers' class action, and other claims. As part of arriving at an appropriate settlement, CARB and the United States Environmental Protection Agency (EPA) focused on whether the illegal cars can be fixed to reduce pollution, mitigation for the environmental harm, and a penalty to deter future non-compliance by VW and by others. In January 2017, the last agreement resolved the civil cases for all of the cars, both 2.0L and 3.0L. Most of the agreements are awaiting court approval as indicated below.

The partial consent decrees address several key objectives:

1) Fully mitigate the environmental harm done by VW from the excess oxides of nitrogen (NOx) emissions. (Appendix D)
2) Provide consumers (owners and lessees) of the illegal vehicles with options for buybacks and for fixes, if approved by CARB and EPA. Additional monies will go to these consumers from the separate class action lawsuits. (Appendix B)
3) Penalize VW for its fraud. (Civil cases agreements)
4) Compensate California for the resources it has spent and will need to spend over the next decade to test the vehicle "fixes," monitor their durability and make sure all promises made in the partial consent decrees are fulfilled. (Civil cases agreements)
5) Escalate VW investments in the ZEV market (infrastructure, vehicles, and access for all Californians) to expedite the transition to ZEVs. (Appendix C)

CARB's claims for mitigation for illegal NOx emissions were resolved in a series of agreements some alone and some in tandem with EPA. A joint CARB/EPA partial consent decree (Consent Decree or CD) for the 2.0L vehicles (about 70,000 vehicles in California) was approved by the federal court in October 2016. A joint CARB/EPA partial consent decree for the 3.0L vehicles (about 15,000 in California) was signed in December 2016, together with a California-only 3.0L consent decree. The joint CARB/EPA 3.0-L decree is out for public comment as required by the federal Clean Air Act. Both 3.0-L consent decrees are subject to court approval, which is expected to follow the comment period. CARB's civil penalty claims were resolved on January 10, 2017 with a VW total payment of $153.8 million - a combination of about $93.8 million in civil penalties and $60 million ($10 million per year for six years) for testing and other

implementation costs. A summary table is immediately below; a narrative of these interlinking agreements, designed to ensure the five objectives above are met, is in the attached summary. Since this is the first CARB document following the resolution of CARB's enforcement case, this more comprehensive explanation is provided as context for the Appendix C ZEV investment portion of the broader resolution.

VW Settlement with California at a Glance: A Summary of Each Partial Consent Decree

Partial Consent Decrees and Court Status	Vehicle Types and Numbers (Diesel)	Money Paid to Trust for Mitigation	Penalties and Costs	Supplemental VW Investments in ZEV Market Support
First Partial Consent Decree Joint CARB/EPA *(Court approved on October 25, 2016)*	2.0 Liter engine vehicles In US about 475,000 cars In CA about 70,000 cars	Nationwide $2.7B ($900M for 3 years to court-established trust) CA's share is about $381M	Limited costs to implement trust-approved projects can be deduced from total by trustee and by states, if approved.	Nationwide $2B over 10 years. **CA's share is $800M over 10 years. To count, VW's investments must be approved by CARB in plan.***
Second Partial Consent Decree Joint CARB/EPA *(Lodged with court for public comment process December 20, 2016)*	3.0 Liter engine vehicles In US about 475,000 cars In CA about 15,000 cars	Nationwide $225M to court-established trust CA's share is about $41.8M	Limited costs to implement trust-approved projects can be deduced from total by trustee and by states, if approved.	
California Second Partial Consent Decree *(Lodged with court for approval December 20, 2016)*	3.0 Liter engine vehicles Same as above: in CA about 15,000 cars	$25M to CA Air Pollution Control Fund (ZEV-related projects for low-income Californians)		Additional ZEV models to CA in 2019 and 2020. Also 5,000 ZEV cars per year until 2025.
California Third Partial Consent Decree *(to be lodged with court in February 2017)*	Applies to both 2.0L and 3.0L engine vehicles (totaling about 85,000 cars in CA)		$153.8M to CA Air Pollution Control Fund: **$93.8M civil penalties for deterrence **$60M ($10M annually for 6 years) future costs testing/ implementation	

*The subject of this Guidance Document to VW.

In short, a series of partial consent decrees – some in tandem with EPA and others CARB-only – interrelate to address CARB's key objectives for the settlement. However, the purpose of this document is to provide VW with additional guidance to inform the ZEV investment plan it will submit to CARB for review. The purpose of the VW ZEV investment element is to help facilitate California's transition to ZEVs to meet California's climate and air quality goals. It is not a penalty but rather a provision that

strengthens California's growing ZEV program. VW's investments along with the investments of other vehicle manufacturers and infrastructure providers are needed to meet California's ambitious ZEV targets.

B. Joint CARB/EPA 2.0 Liter Diesel Consent Decree Appendix C – The ZEV Investment Commitment

As of January 2017, the only partial consent decree approved by the federal court is the 2.0L consent decree jointly signed by CARB and EPA. The focus of this guidance is on Appendix C, which sets out VW's ZEV Investment Commitment. However, the consent decree contains four elements, each of which is set out in a separate Appendix to the decree: A, B, C, and D. This section summarizes the Appendices, including eligible investments for VW to make under Appendix C. Appendices A and B describe the procedures that VW will use to offer its consumers the option of either: (1) a buyback or lease termination, or (2) an emissions modification in accordance with the technical specifications prescribed in Appendix B. The Consent Decree also allows consumers to choose to do nothing. Appendix D (the Environmental Mitigation Trust) is intended to fully mitigate all past and future excess NOx emissions from the subject vehicles. Under the terms of the Consent Decree, VW must pay $2.7 billion nationally, with about $381 million allocated to California, into a mitigation trust over a three-year period for projects to replace older and dirtier heavy-duty diesel vehicles and equipment in California with cleaner vehicles and equipment, including advanced zero- or near-zero-emission technologies. The Governor will identify a Lead Agency to act on the State's behalf in implementing California's allocation of the Trust. That Lead Agency will be responsible for developing, through a public process, a beneficiary mitigation plan that directs use of the funds, implementing that plan, and reporting on the implementation progress.

Appendix C of the 2.0L Partial Consent Decree, attachment B to this guidance, requires that $2 billion be invested nationally by VW over a ten year period. Of that $2 billion, $800 million, or 40%, is designated for investment in California-based projects. Unlike Appendix D funds, which are directed by the trustee and the designated Lead Agency's future funding plan, Appendix C funds are to be spent by VW on investments that are developed and implemented by VW with consultation and oversight by the State of California. VW will submit an investment plan every 30 months for expenditure of at least $200 million. CARB will review and approve, in whole or in part, the submitted investment plan subject to constraints and terms specified in the Consent Decree. A third party auditor will review expenditures and determine if they are creditable investments on an annual basis.

Though the Consent Decree established eligible investment types, VW has discretion to choose the specific projects and investment levels within those project types. CARB,

working closely with partner state agencies engaged in ZEV infrastructure development and other complementary policies and with public input, has summarized for VW California's and other stakeholders' priorities, recommendations, and goals for ZEV investment. CARB has already educated VW on the State's ZEV market support efforts and connected VW with key stakeholders that may be helpful in developing their investment plan.

Appendix C of the 2.0 liter consent decree specifies the following four areas of eligible investments, which VW may invest in with CARB's approval, though investments are not required to be made in all of the following in the first 30 month cycle:

ZEV Infrastructure

ZEV infrastructure includes the planning, design, construction/installation, operation, and maintenance of ZEV refueling stations. Those refueling stations can dispense electricity, for example, 208-240 volt (Level 2) electric vehicle supply equipment (EVSE but more frequently called chargers) at multi-unit dwellings (MuD), workplaces, and public sites, 480 volt direct current (DC) fast chargers, and subsequent generations of higher power chargers. They can also dispense hydrogen for fuel cell vehicles.

Public Awareness

Public awareness is described as brand-neutral education or public outreach that builds or increases public awareness of ZEVs. Programs cannot feature or favor VW vehicles or services but they can contain the statement, "Sponsored by Volkswagen" although not prominently.

Increasing ZEV Access to All

Increasing ZEV access includes programs or actions to increase public exposure and/or access to ZEVs without requiring the consumer to purchase or lease a ZEV at full market value, e.g., the operation of ZEV car sharing services, or ZEV ride hailing services, including, but not limited to, ZEV autonomous vehicles, and, in California, programs to scrap and replace older vehicles with ZEVs. ZEV Access investments could benefit disadvantaged and disproportionally impacted communities, lower income groups, and those with limited access to personal transportation as these groups are most effected by the ordinarily capital intensive requirements for ZEV access.

Green City

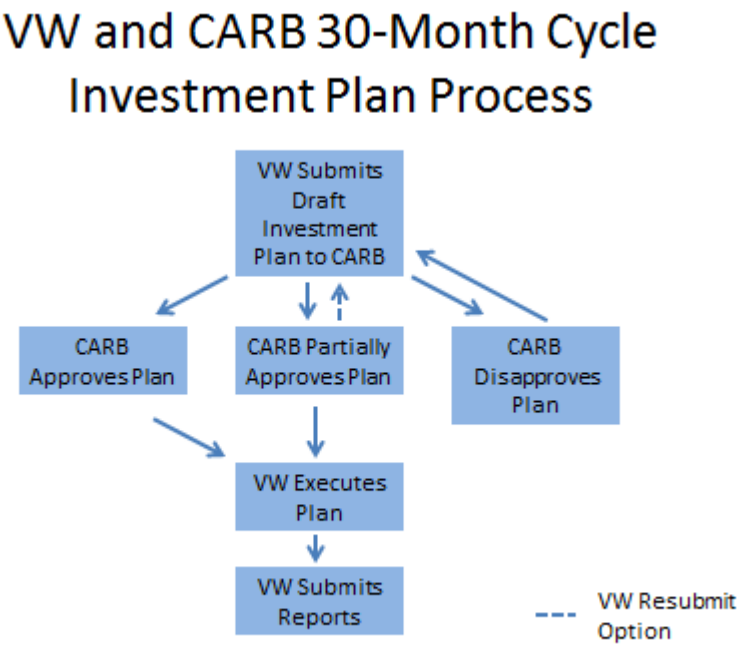
The “Green City” initiative in California includes investments that promote a broad conceptual transformation of transportation systems to ZEVs within a given city using ZEV car share, zero emission transit, zero emission freight, and other innovative strategies such as a fully electrified public parking garage within a concentrated area to showcase the benefits of ZEVs. The selection of the green city will be made by VW in consultation with appropriate local authorities and CARB.

II. CARB Guiding Principles and Project Examples for the VW Investment Plan

The Consent Decree requires VW to develop its proposal for ZEV investments. This guidance document is intended to convey CARB’s recommendations, priorities, goals, and expectations to VW for the investment plan it is developing. CARB is expecting VW’s ZEV Investment Plan to deliver programs that are additive and complementary to ongoing efforts to commercialize ZEVs in California.

Development of this guidance document was informed by a public workshop held on December 2, 2016, a request for written comments and a Board Hearing on December 8, 2016 as well as numerous meetings with state agencies, and stakeholders. Through this process, CARB developed a set of guiding principles that support California’s goals for achieving air quality standards, greenhouse gas emission reduction goals, transportation electrification, and increased access to ZEVs for all Californians. State agencies and industry stakeholders have also provided a list of example projects that would benefit the ZEV market. CARB will continue to work with stakeholders to refine and update the guidance to VW for subsequent ZEV investment plans. Concurrent with CARB’s public process, VW’s new company (Electrify America, LLC), formed to implement the ZEV Investments, has launched a website that invites stakeholders to submit suggestions for ZEV Investments. CARB’s review of the ZEV Investment Plan will be influenced by both this guidance document and by review of the comments received through our public comment process and the comments submitted through the Electrify America website.

For each 30 month spending cycle, VW is to submit to CARB an “Investment Plan” that will detail the intended projects, their costs, and specifications as required by the Consent Decree. CARB will in turn approve or partially approve or disapprove the plan (figure below); CARB’s approval or disapproval is based on the requirements and goals of the consent decree; the consent decree specifies when CARB can disapprove or partially approve. If CARB disapproves the plan in whole, VW will resubmit a new plan until at least partial approval is gained. If CARB partially approves the plan, VW has the option to resubmit a new version. Only approved portions of the plan can be creditable to the spending commitment, $800 million total/$200 million each 30 month period, in the consent decree. Once at least partial approval is gained, VW can execute approved portions of the plan. VW may spend beyond what is approved, but any spending beyond what is approved will not be creditable. Each year, VW is required to provide a report on the status of the investment projects and to meet with CARB twice a year in person to present status updates. Each 30 month spending cycle this process repeats for a total of four cycles.



The CARB guidance to VW for its Investment Plan will be covered in the two subsequent sections. The first section details CARB's priorities and guidance, organized by the investment categories. The second details project recommendations and specific desired project characteristics by investment category.

A. CARB Guiding Principles to VW

1. Complementary and Additional Investments

The expenditures should be ***complementary and additional*** to investments already being made by government and the private sector in California. As the intention of the settlement is to make impactful investment that accelerates and supports the ZEV market, it is important that these investments are not duplicative or take the place of either government funding programs or investments made by others. We recognize that there are currently many programs and efforts underway or that are planned, which are resulting in infrastructure development, growth in public awareness, and ZEV access improvements. These include the California Energy Commission's (CEC) infrastructure grants, the utilities' investment in ZEV infrastructure, the substantial private sector investment in growing charger networks and numerous local and multi-stakeholder efforts to support the ZEV market. These should continue and VW's investment should grow the effort, rather than take the place of existing programs. Also additional and complementary infrastructure investments mean developing a broader, more functional charging system for all drivers, and not duplicative networks or infrastructure investments that might displace investment from others. Therefore, we expect the plan to describe the effort that VW has taken to ensure the investments are not duplicative but rather complement existing efforts.

2. Transformational Programs

While the consent decree specifically requires that VW invest across a variety of geographic regions in the state, we urge VW to focus their investments in a limited number of communities that represent a variety of community types to create ***transformative outcomes***. Rather than a sprinkling of projects all over the state, significant, targeted investments in fewer communities will make a larger difference. These investments have the potential to transform communities, particularly disadvantaged, low-income, and disproportionally impacted communities. California encourages field testing and pursuit of ***"Transformational" programs***, which are investments that provide mutually-beneficial learnings to VW and California on breakthrough e-mobility concepts that can catalyze widespread renewable

transportation electrification. Transformational investments will act as demonstration grounds where future applications of ZEVs and matched renewable energy sources can be showcased to demonstrate a holistic approach to ZEVs.

3. Prioritize Disadvantaged, Low-income, and Disproportionately Impacted Communities

CARB urges VW to dedicate a significant percentage (at least 35 percent) of the funds for ***investment in disadvantaged, low- income, underserved and disproportionally impacted communities identified in consultation with state agencies*****.** Much comment was received supporting investments in these particular communities. Several California bills including Senate Bill 350, Senate Bill 535 and Assembly Bill 1550 provide clarity on what defines a disadvantaged community, a low-income community or a disproportionally impacted community and VW is directed to use the communities identified in these bills when prioritizing communities for investments. As one of the goals of the Appendix is to increase access to ZEVs, it is important to make ZEVs a more accessible and attractive transportation option for a broader range of income groups and demographics within California over the 10-year life of Appendix C. While programs are in place today to help low income drivers purchase a ZEV, lack of infrastructure is cited as a barrier to ZEV adoption. Therefore, investment in these communities in infrastructure, access programs, employment, and education will be very important. This priority is consistent with the goals of SB535 and AB1550. Additionally, consistent with our first principle that investments be complementary and additive to efforts in the state, CARB expects VW to coordinate investment with the California Public Utilities Commission's (CPUC) programs authorizing utility investment in ZEV infrastructure that serves low income and disadvantaged communities to increase the overall reach of all parties' programs.

4. Initial Priority on ZEV Infrastructure, Public Awareness, and for Early and Visible Progress

In the first 30 month spending cycle, California's highest priorities for investment are public ***ZEV infrastructure and public awareness.*** As highlighted in the recently released Advanced Clean Cars Midterm Review Report, these areas of investment are critical to support the growing market for ZEVs by addressing the question of where ZEVs will refuel and by raising initial awareness of ZEV technology options.

As identified in the Governor's ZEV action plan and the Advanced Clean Cars Midterm Review Report, ZEV infrastructure and public awareness are key to growing the ZEV

market. If consumers don't know about the cars and don't know where to fuel them, they won't buy or use them. Further, these types of programs are among the most feasible to implement in a short timeline. For these reasons, we are identifying these two investment categories as top priorities for the first 30 month investment plan.

In the first 30 month spending cycle, we urge VW to make ***early, visible progress***. It is important that California see tangible progress in the first 30 month investment cycle with operational infrastructure and implementation of outreach programs. We would expect to be able to count ZEV fueling stations and measure the public awareness effectiveness by the end of the first 30 months rather than receive reports of planned fueling sites and planned outreach efforts.

5. Hydrogen Refueling Infrastructure

Hydrogen used as a transportation fuel is important in California. VW is strongly encouraged to include hydrogen investment; if not now in a subsequent 30 month investment plan. In this way, VW and California will promote ZEVs but remain technology neutral. Hydrogen fuel has attributes that may mitigate grid supply and demand inequities, be applicable to medium and heavy duty transportation, and provide long-range refueling as quickly as gasoline or diesel. Although VW has expressed more interest in plug in technologies, California has many opportunities to invest in the early development of the hydrogen refueling station network. Establishment of an efficient, reliable and accessible fueling network will open up the market for fuel cell vehicles and provide an opportunity for a more renewable transport sector, opening new opportunities for car makers including VW to successfully market zero emission vehicles fueled by zero emission sources of energy.

6. Data Collection and Reporting

Data collection and reporting is very important to California to help understand effectiveness of programs or program performance, implementation issues, durability and maintenance issues of infrastructure, and grid integration issues. Data collection and reporting is also critical for providing transparency and accountability for the program. It will be important to work with our state agency partners to identify early the metrics that will be most useful. Clear examples of data that will be useful in the marketing and implementation of future ZEVs are EV charger utilization characteristics such as number of charges per day, time of day, length of charge time, and charge costs. As required by law, CARB will protect any confidential business information VW submits as part of this reporting.

7. Business Competition and Conduct Considerations

Investments should ***not interfere with or undermine established and emerging businesses*** in the market place. A number of comments from existing industry stakeholders indicate concern that the ZEV investments by VW may negatively impact the market in which they make their livelihood. We urge VW to make their investments in a way that does not interfere with or undermine established and emerging businesses in the marketplace. Consistent with one of our first guiding principles, investments that are additive and complementary, this principle more specifically urges VW to work constructively with industry and government agencies to leverage existing expertise, skills, and products in accomplishing their goals.

Consistent with SB 350, investments should stimulate innovation, competition, and customer choice in charging equipment, networks, and services and not interfere with or undermine established and emerging businesses in the established and emerging EV market place. To this end, VW is expected to coordinate with existing California EV infrastructure investments and to make use of CARB-provided contacts at the CPUC, CEC, utilities, and other local agencies to develop a carefully planned infrastructure network. In this way, other business entities and existing companies will not be negatively impacted economically by VW's investments. As part of the investment plan we are interested in a description of how the proposal complements the efforts of others in the marketplace.

VW's investments should ***demonstrate corporate social responsibility and a self-sustaining business case***. By way of example of what California does not want to have happen, there have been instances in the past of infrastructure provided through public or private funding without a long term business plan for maintenance, billing, upgrade or use support ultimately resulting in abandoned and stranded infrastructure. This has reflected poorly on the infrastructure network and on plug in vehicle technology in general.

CARB is confident VW will play an important and complementary role in the infrastructure market. CARB's analysis estimates that if VW spent all of the investment funds of the first 30 month spending cycle on EV Charging only, this would contribute less than 15% of what is needed to reach the Governor's goal of enough EV

infrastructure to support one million ZEVs by 2020.[1] When combined with existing installed EV chargers, there would still be a $1.3 billion spending gap. To this end, in January 2017, the state's largest utilities have proposed to the California CPUC to make over $1 billion in new investments to "accelerate widespread transportation electrification," focusing on "light-duty" passenger electric vehicles, as well as bigger, heavier, "medium and heavy-duty" vehicles. These proposals have not yet been evaluated by the CPUC.

B. Specific Investment Priorities and Preferred Project Examples by Spending Category

This section makes specific recommendations on actual projects and spending priorities within each spending category. CARB recommends that the percentage split between the four spending categories be relatively balanced with an emphasis on ZEV Infrastructure. For example, about half of the investments should be in infrastructure and the balance split between public awareness, ZEV access and Green City programs.

1. EV Infrastructure

Charging access at work places and multi-unit dwellings is identified as a key element to expand the market for ZEVs. Multi-unit dwelling charging solutions address the more challenging issue of providing at home charging for those not living in single family homes. Workplace charging has multiple benefits, including expanding daily range for drivers, increasing awareness of ZEVs and providing charging for employees that may not have access to charging at home. Workplace charging also enables use of EVs for those who drive long distances for their commute.

Examples of infrastructure projects include: a workplace challenge, offering grants, rebate programs or support for installation of chargers at workplaces; curbside chargers used to address multi-unit dwelling charger challenges such as in Burbank's curbside program; showcase and demonstration of vehicle-to-grid integration (VGI) technologies in these or any other Level 2 or DC fast charger application to spark VGI market development; and an electrified public parking garage that could take advantage of all of these concepts and act as a showcase and demonstration facility.

[1] NREL 2014 report on CA statewide plug-in electric vehicle assessment – CEC-600-2014-003, and the EPA NHTSA ARB 2016 Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025 – EPA-420-D-16-900.

To support extended travel range, DC fast charger stations that accept all major credit cards are requested. As the state has quite a bit of activity underway to fill out major corridors between metropolitan areas, we recommend DC fast charger locations that serve secondary corridors and metropolitan sites that serve those drivers that may not have access to workplace and home charging. Example projects include a modular build out of high power DC fast charging plazas with multiple charge points with pre-built capacity to upgrade to 320kW chargers. Such stations could help address customer charging needs for those without at-home or at-work charging options.

To fill gaps in public, long term dwell time locations, install Level 2 or DC fast chargers at locations such as airports, medical facilities, universities, and office complexes.

To support all ZEV technologies and remain technology neutral, CARB recommends a portion of the funds be invested in new hydrogen fueling station infrastructure or hydrogen market development such as station commissioning and hydrogen quality testing, if not in this cycle, than in a future ZEV Investment cycles.

To expand ZEV technology across more transportation sectors, investment in infrastructure that serves multiple vehicle sectors such as medium and heavy duty is also recommended.

When VW submits the Draft Investment Plan to CARB, the section on EV Infrastructure should include but not be limited to; a description of the overall business plan, a statement of which entity is paying for what, a statement of who will own, who will operate and who will maintain each asset for the ten years, a description of each project in its general magnitude as well as enumerated details of project magnitude (such as number of chargers and each type of plug), specifics addressing investments serving disadvantaged, low-income and disproportionately impacted communities, intended metrics for evaluating and tracking project performance, and details on project locations with respect to each other and the regions, and details on projected costs/consumer rates/profits delineated by basic accounting categories. There are additional requirements specified in the consent decree.

2. Public Awareness

Increasing public awareness of ZEVs is critical to growing the market. It is a large task that would benefit from leveraging the work of others and partnering to create a larger overall program. CARB recommends VW work with, and partner with, existing stakeholder efforts to create public awareness campaigns. In particular CARB

recommends VW support the Veloz campaign under development by the California Plug-In Electric Vehicle Collaborative. As part of the ZEV Investment Plan, CARB expects VW to describe how the public awareness program is complementary to existing efforts and what efforts VW has undertaken to ensure that it is.

We expect the public awareness campaign efforts to market the attributes of ZEVs in a way that builds interest with consumers. And we would like to see marketing program performance measurement such as total reach and details about the media streams used. In order to reach all Californians, including those in disadvantaged, low-income, and disproportionally impacted communities, some marketing materials and products should be produced that are multi-lingual and culturally sensitive. Driving a ZEV has been shown to be one of the most influential elements of a consumer's decision to buy or lease a ZEV. For this reason we urge VW to include experiential marketing including ride and drive opportunities and vehicle displays showcasing ZEVs. Examples of the kinds of public awareness programs we recommend include the funding of a contractor to provide ride and drive experiences or offering challenge grants to other stakeholders to bring funding into broader cooperative outreach programs.

When VW submits the Draft Investment Plan to CARB, the section on public awareness should include, but not be limited to: a description of the overall business plan, a statement of which entity is paying for what, a statement of who will produce and who will execute each awareness project for the initial 30 month cycle, a description of each project in its general magnitude as well as enumerated details of project magnitude (such as number of events or publications or showings of an advertisement), specifics on outreach to disadvantaged, low-income and disproportionately impacted communities, details on project goals, the expected outcomes of each project, intended metrics for evaluating and tracking project performance, and how each project is expected to accomplish each of the goals, and details on projected costs delineated by basic accounting categories, explanation of how nationwide public awareness projects apply to California and where they do not. There are additional requirements specified in the consent decree.

3. Increasing ZEV Access

Increasing ZEV access will be an important element of the ZEV Investment Commitment to California. This investment category in particular has tremendous potential to bring the benefits of ZEVs to greater numbers of low-income Californians. We would prioritize projects, especially those that serve disadvantaged, low-income, or

disproportionately impacted communities as listed here: vehicle scrap and replace with a ZEV programs[2]; community-based car-share programs; zero emission shuttle services and transit; ride hailing services; and finally, autonomous ZEV services demonstrations.

When VW submits the Draft Investment Plan to CARB, the section on increasing ZEV access should include, but not be limited to: a description of the overall business plan, a statement of which entity is paying for what, a statement of who will own and who will execute each ZEV Access project for the ten years, a description of each project in its general magnitude as well as enumerated details of project magnitude (such as number of events or publications or showings of an advertisement, number of vehicles in service, locations, chargers and each type of plug), a description of how projects will benefit disadvantaged, low-income and disproportionately impacted communities, details on project goals, the expected outcomes of each project, intended metrics for evaluating and tracking project performance, and how each project is expected to accomplish each of the goals, and details on projected costs delineated by basic accounting categories. There are additional requirements specified in the consent decree.

4. Green City

The Green City initiative could bring together many of the investment types already described into a focused geographic implementation. We would expect the investment, therefore, to be transformative for this community. We recommend the following be used in selecting a Green City. VW should select a city identified as containing a disadvantaged, low-income or disproportionately impacted community. There should be opportunities to improve transportation and vehicle emissions across multiple vehicle types. We urge VW to leverage existing transportation plans and community efforts. In the end, VW should consider the level of impact that can be achieved with their investment.

Additionally the following should be considered as VW narrows their selection of a Green City: a city that is neither too large to create transformation nor too small to benefit a significant population; opportunities to improve air quality; an ideal location will benefit disadvantaged, low-income, and disproportionally impacted communities within the selected city; we expect the city to have the economic and demographic mix to

[2] The 3.0 liter Diesel engine settlement provides $25 million to the Air Pollution Control Fund for EFMP Plus-up and other scrap and replace type programs.

support the planned initiatives so that services provided will be well used; and the selected city should have some geographic separation or travel patterns that can be well served by the types of services to be provided.

Example projects could include several increased ZEV access components for citizens unable to breach the capital barrier to ZEVs such as ZEV car sharing, ZEV vanpools, and ZEV shuttle services or transit. CARB has also expressed interest in seeing medium and heavy-duty ZEV applications with supporting infrastructure for ZEV freight services and other ZEV utility type vehicles such as boom trucks, skilled trade trucks, road maintenance equipment, and trash service vehicles. Since the Green City project is a showcase and an example of what is possible with a holistic EV integrated society, it is recommended that technology transforming elements like vehicle grid integration and renewable energy be fundamental components of ZEV infrastructure installations.

When VW submits the Draft Investment Plan to CARB, the section on Green Cities should include but not be limited to; a description of the overall business plan, a statement of which entity is paying for what, a statement of who will own, who will operate and who will maintain each asset for the ten years, a description of each project in its general magnitude as well as enumerated details of project magnitude (such as number of vehicles in service, locations, chargers and each type of plug), a description of how the Green City was selected; an explanation of how projects will serve disadvantaged, low-income and disproportionately impacted communities, intended metrics for evaluating and tracking project performance, and details on project locations with respect to each other and the regions, and details on projected costs/consumer rates/profits delineated by basic accounting categories. There are additional requirements specified in the consent decree.

III. Conclusion

The investments to be made by VW are coming at a critical time as the ZEV market ramps up in the coming years. These programs and services have the potential to be transformative and highly supportive of California's efforts to grow the ZEV market and broaden the reach of electrified transportation for all Californians. CARB is looking forward to receiving and reviewing VW's ZEV Investment Plan with the expectation that the projects described will be responsive to the guidance provided in this document.

Appendix A - Summary of Public Workshop and Public Board Hearing Comments

This section summarizes oral and written comments that were presented at the December 2, 2016 public workshop and the December 8, 2016 public Board hearing. It also summarizes comments submitted electronically during the workshop public comment period that commenced with the November 14, 2016 public workshop notice and ended on December 16, 2016.

I. Comments on CARB Recommendations and Priorities

Many commenters echoed the recommendations and priorities described in Section III and put forth by staff at the December 2, 2016 workshop and December 8, 2016 public hearing.

A. Disadvantaged communities

As described in Section II, state legislation (SB 535) dictates that at least 35 percent of funds be invested in disadvantaged communities. Board members asked that staff, in their guidance to Volkswagen, provide Volkswagen an expanded definition of "disadvantaged communities" that was broader than the definition associated with the CalEnviroScreen tool. Staff has revised Section III to broaden "disadvantaged communities" to include low -income and disproportionally impacted communities identified in consultation with state agencies.

Commenters speaking to this topic were all supportive of providing additional incentives for consumers in disadvantaged communities, but several expressed concern that almost half of the state's low-income communities are excluded from the state's disadvantaged communities definition and stated that an additional 10 percent of funds should be invested in low-income communities outside of disadvantaged communities. One commenter suggested that the CARB consider an alternate definition that focuses on areas with low socioeconomic status in conjunction with a lack of PEV charging infrastructure. Another commenter suggested that CARB consider other metrics for priority markets, for example, federal Promise Zones. There are four Promise Zone communities in California and Promise Zones have the strength of existing partner commitments that allow leverage of federal, state, and local funding to parlay benefits to the identified areas.

Additional representative comments:

- Focus on disadvantaged community investment by encouraging growth of the secondary ZEV market and encouraging MuD charging access.
- Set a minimum percentage requirement for disadvantaged communities charging infrastructure and coordinating with the major IOUs on infrastructure applications.
- Partner with state and local governments to install workplace/public chargers in disadvantaged communities.
- ChargePoint encouraged CARB to set a higher goal (35 percent or greater) for placement of charging stations in disadvantaged communities and to set clear guidelines for defining projects that would meet this goal, including what it means to "serve" disadvantaged communities rather than simply "locate" charging stations in these areas.

B. Hydrogen as a transportation fuel

As discussed in Section II, the CARB believes that hydrogen, as a transportation fuel, is important to California because it promotes technology diversity, is scalable to medium- and heavy-duty vehicles, and has refueling ranges and speeds commensurate with other liquid fuels like gasoline and diesel. Board members expressed that ZEV investments should be technology neutral, and thus, should support hydrogen refueling infrastructure. The vast majority of commenters on this topic supported Hydrogen as a transportation fuel. In general, these commenters asked that VW funding: (1) facilitate mass adoption of both PEVs and FCEVs, including transit buses and goods movement trucks, (2) be used to more rapidly expand the existing hydrogen refueling network – both for passenger cars as well as transit and freight applications – beyond the 100 stations to be placed in accordance with AB 8 with an emphasis on redundancy and stations that dispense locally generated renewable hydrogen, (3) support station operations and maintenance, network infrastructure, and testing devices for certification/commissioning.

Additional representative comments:

- The Central Coast (Ventura, Santa Barbara, and San Luis Obispo) area requested that funds be prioritized for renewable hydrogen generation and stations in their area and, in so doing, close the gap between Los Angeles and San Francisco along Highway 101.
- Funding should support hydrogen stations using CEC/CARB selection process and scoring methodologies.
- VW must equitably fund a balanced portfolio of zero emission technologies. If they direct most funds to PEV infrastructure, then they would reap an unintended benefit of having settlement funds disproportionately reward the technology it is backing.

- California's goals rely on both PEVs and FCEVs. We encourage VW to invest in fueling infrastructure that will support their future ZEV sales, with a balance between PEV and FCEV. Hydrogen support will be required beyond the 100th fuel cell station. Thus, ensuring a portion of Volkswagen's ZEV Investment goes to hydrogen refueling will be complementary and additional to this existing program in further bridging the gap to commercial viability.
- AC Transit is requesting that Volkswagen Settlement funds be allocated to provide for a funding source for the retrofit of our 2010 Van Hool fuel cell buses with new Ballard fuel cell engines.
- Will there be any funding for research of on board hydrogen storage?
- As part of the VW Diesel-gate settlement with CARB, VW should put aside a BILLION dollars to build out the Hydrogen Highway along major CA FWY & HWY routes to be readily accessible. Secondly, AAA should have a "Mobile Hydrogen Refill" service truck to dispense Hydrogen to a stranded FCEV anywhere in California just as they do now with the 5 gallon jerry-can of regular gas.
- Fuel cell vehicles have performance characteristics similar to ICE vehicles - long range, fast refueling. For ZEVs to be successful, there must be model diversity. Include Hydrogen infrastructure and renewable-based Hydrogen generation in all four investment cycles. Hydrogen generation can take advantage of the renewables "duck curve."

A few commenters opposed the inclusion of Hydrogen in the funding plan, stating that it is usually produced from natural gas and cannot be produced efficiently, and that investments should: (1) focus on heavy-duty, (2) be modest in comparison to electricity investments for light-duty, and (3) reflect the significant investment California is already making in Hydrogen infrastructure.

C. Oversight

Staff emphasized the importance of transparency and accountability. The Board expressed its desire that VW routinely share data with CARB. One member expressed concerns about yearlong data blackouts and its impact on transparency and accountability. Several commenters stated that the CARB should use all means to "maintain vigilant oversight" and "forcefully oversee" this program to ensure that funds equitably serve the public interest, create high-quality jobs, and are spent in accordance with state law. It was suggested that CARB collect data and measure program effectiveness.

Other commenters suggested that:

- CARB should require routine reporting and disclosure for projects and funds.

- VW make reported data available through a public website and have a hotline number for members of the public.
- CARB ensure investments complement – are additional to and do not displace – existing programs.
- Oversight and transparency will maximize the potential of this opportunity to support current PEV drivers and stimulate future sales.

D. Competitive marketplace

CARB, in its guiding principles, expressed that VW's investments not interfere with or undermine established and emerging businesses. Some Board members expressed concern that the sheer size and timing of Volkswagen's investment plan investments – in particular, infrastructure investments in the first 30 month plan – could result in Volkswagen investing in preferential locations that competitors would have desired to obtain, had they been financially able to do so. These Board members were concerned about competitive advantage and asked how the CARB reconciles that issue. CARB's Chairwoman, in addressing the larger issue of Volkswagen potentially benefitting from these investments, said that if they're done well, they will benefit Volkswagen and help them be a big player in the market, assuming that they have good vehicles that people want to buy or lease, but that it's also going to help the entire market. She further stated that it was our job in all of this to counsel with Volkswagen, and where necessary, be more aggressive about the fact that the investments that they're putting out through this fund need to be toward things that really do support the market as a whole.

Electric vehicle service providers (EVSP) shared the current status of the marketplace: (1) the industry is providing competitive pricing and market rates for EV users; (2) market participants are offering a variety of products, technologies and business plans, diversifying the market and promoting innovative solutions to charging needs; (3) the EV industry is innovating daily on storage capacity, battery life and technologies to support charging stations. They went on to state that (1) the plan that is adopted by CARB and VW should maintain the integrity of this competition and allow for multiple bids for service across the contemplated investments, and (2) new innovations should be fostered as they come to market.

EVSPs expressed other comments similar to those expressed by the CARB with regard to a competitive marketplace, as well as a few new ideas for consideration:

- CARB has the opportunity and responsibility to ensure that VW's investments are harmonized in intent and implementation with California's policies governing EV investments generally, such as SB 350 and AB 118, which uphold an approach

favoring continuing innovation and promotion of a competitive marketplace.

- The CARB will need to coordinate carefully with CEC, CPUC, utilities and other industry players to ensure that stations are deployed in a manner that does not duplicate existing efforts or frustrate other critical state policy objectives, such as avoiding harm to the competitive market or overlooking underserved communities.
- If VW enters the EV service provider business, funding must be spent in a fair and competitive manner. The best way of avoiding unintended consequences is to have settlement funds support existing and planned state-managed programs (like the Clean Vehicle Rebate Project (CVRP) and the Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP).
- Consider rebate-based partnership approach to infrastructure. Provide customer choice. Ensure that installed infrastructure is maintained. Investment Plans should provide for maintenance. Be more efficient by prioritizing infrastructure funds to communities with streamlined regulatory procedures.

Other commenters asked that CARB consider adding the following topics to the list of guiding principles.

E. Skilled workforce

Commenters on this topic expressed an interest in VW funding and increasing access to skills-development programs aimed at training and certifying technicians, especially from underserved communities (particularly those with barriers to employment) to fill emerging jobs maintaining battery electric and fuel cell vehicles and electric and hydrogen refueling infrastructure.

Additional representative comments:

- In accordance with SB 350, investments should support middle-class careers and skilled training opportunities; 35 percent of the workforce should be low-income, from disadvantaged communities, or veteran.
- Funding should support community college-based technician training supporting each aspect of the hydrogen network supply chain.
- California’s colleges expressed that they are the largest provider of workforce training and would like to expand it to include installation and maintenance of ZEV infrastructure.
- Incorporate "High Road" workforce development values.
- Track data on these training efforts.

F. Expand eligibility beyond on-road light-duty vehicles

The Consent Decree provides that investments for vehicles and infrastructure should be limited to on-road vehicles. It allows that those on-road vehicles may be medium- and heavy-duty vehicles. One Board member asked that medium-duty electric vehicles not be neglected as their use, as internal combustion engine vehicles, is ubiquitous in Southern California. Several commenters stated that medium- and heavy-duty vehicle investments should be prioritized above light-duty vehicle investments, in part because they portent greater emissions reductions on a per mile basis, and, in the case of transit, because they have a higher participation rate due to lower barriers to access. Others stated that residents of disadvantage communities are often transit dependent. Thus, they would prioritize zero emission transit and school buses above zero emission car share programs.

Additionally, commenters stated that:

- Public transit must be included, at up to $40 million annually, in each of the four 30 month funding cycles.
- Zero emission maritime and passenger vessels should be supported as they have hundreds of times the capacity of light duty vehicles and thus can effectively reduce pollution and serve disadvantage communities. Charging infrastructure for these vessels should also be included.
- VW should fund freight, goods movement, transit and school bus, and other medium- and heavy-duty zero emission (both battery electric and Hydrogen fuel cell) vehicles and infrastructure.
- Fast chargers should be placed in locations accessible to both the medium- and heavy-duty zero emission freight and transit vehicles as well as passenger vehicles.
- Trucks should be diverted to rail concurrent with funding the development of low- and zero-emission locomotives.
- Electric bikes should be included in every program that aims to reduce emissions. They are perfect for people in communities underserved by mass transit. They require very little power consumption. They promote a healthy lifestyle and more livable communities. A relatively small rebate would go a very long way to making these amazing machines affordable for low-income buyers.

G. ZEV Infrastructure

The ZEV infrastructure topic received the greatest number of comments. General themes included: (1) PEV infrastructure type and placement – commenters discussed appropriate charging rates and locations for the placement of chargers, (2) hydrogen – commenters emphasized that California should support ZEV technology neutrality by

requiring both PEV and FCEV refueling, (3) MuDs – commenters expressed that California would only be able to significantly advance the ZEV market by addressing the refueling needs of drivers without single family homes, (4) medium- and heavy-duty ZEVs, and (5) partnerships.

Several Board members expressed that the major objective is to get infrastructure out there, in part because consumers won't buy a vehicle, unless they see the charging stations out there. In thinking about how to get more PEVs into disadvantaged communities, other Board members stressed that we need to be thinking about how those vehicles would charge. That means finding a solution to the MuD charging problem and finding out commute patterns and establishing some charging station opportunities, perhaps parking structures or workplaces. The latter, in particular would help tremendously in encouraging people to get into the secondary (used electric vehicle) market.

Representative comments – PEV infrastructure type and placement:

- Investments should be guided by regional readiness plans, concentrate on workplace, MuD, and DC fast chargers, and support rideshare, car share, vanpool, and ride hailing services. Pair infrastructure with battery storage for transit and freight applications.
- Prioritize infrastructure as follows: Level 1 or 2 at homes/workplaces, DC fast chargers (along PEV corridors), and finally, Level 2 in other public places. CARB needs to clarify that workplace and MuD Level 1 are eligible. Consider allowing free Level 1 or 2 in areas with low PEV adoption with reimbursement from the fund. Incorporate open access, transparent pricing, interoperability, mapping data, and signage.
- Place PEV infrastructure at key locations such as MuDs, workplaces, airports, hospitals, school campuses, shopping centers, movie theaters, existing gas stations, job training and employment placement centers , affordable housing communities, employment centers, and social services locations e.g., hospitals, public health clinics, welfare offices, etc.
- Support the installation of ZEV infrastructure, specifically DC fast chargers at workplaces and Level 2 chargers at Park and Ride Lots or other vanpool pick-up locations. Expand funding eligibility to mobile DC fast chargers.
- Deploy infrastructure to fill voids; consider rest stops, which already have alternative fuel vehicle dedicated spaces; emphasis should be on Level 2 and DC fast chargers.
- Site investments near transportation hubs to promote intermodal transportation.

Representative comments – hydrogen:

- Hydrogen Infrastructure, which should constitute 25 percent of infrastructure funding, should be prioritized based on readiness, market indicators for hydrogen vehicles, and the ability to link with other hydrogen hubs.
- First 30 month plan should concentrate on infrastructure investment, in particular, hydrogen.
- Support fuel cell infrastructure in a way that is fair to the market competitors

Representative comments – MuDs:

- Pay for load studies and EV charging consulting for MuD owners.
- More public DC fast chargers are necessary to reach MuD drivers.

Representative comments – medium- and heavy-duty vehicles:

- Expand medium- and heavy- duty ZEV infrastructure, especially for vehicles like transit buses, that significantly impact disadvantaged communities.
- Fund public transit charging infrastructure without regard to private vehicle access as transit operations don't lend themselves to public fueling.
- Support infrastructure for exclusive use by heavy-duty EVs like terminal trucks because they best serve CARB's guiding principles.
- Provide flexibility for heavy-duty infrastructure (allow proprietary chargers), at least for the first 30 month cycle, because connector standards are still in flux.

Representative comments – partnerships:

- Prioritize MuD properties, L2 vs. DC fast chargers, and form partnerships with firms already equipped with the expertise to advance investments.
- Investments should leverage early electrification leadership to allow for rapid scalability. The Sacramento Municipal Utility District (SMUD), Sacramento Metropolitan Air Quality Management District (SMAQMD), and Sacramento Area Council of Governments (SACOG) are all leaders in electrification efforts and the City of Sacramento is the number one green fleet in North America. VW should target areas with proven capacity to disseminate new approaches. Any regional partnership for Sacramento area infrastructure siting should include the following agencies/entities: Sacramento Housing and Redevelopment Agency, the City and County of Sacramento, SACOG, SMUD, SMAQMD, and Sacramento Employment and Training Agency.
- Coordinate with local governments and community choice aggregators to reduce the carbon intensity of electricity production. Include tariffs and incentives for PEVs and

other complementary distributed energy resources such as energy storage and rooftop solar.
- Successful partnerships should be an important guiding principle for the ZEV Investment.

Representative comments – other:

- Front load transformational investments, while creating the least possible impact on the competitiveness of existing charging providers.
- VW should address utility demand charges, which can be up to 80 percent of operating costs. A committed entity is needed to support those early costs and to work together to improve cost structure through charging tariff reform, alternative energy procurement options, and LCFS credits. VW should also upgrade DC fast chargers to support future charging speeds.
- Balance PEV infrastructure investment between existing targets (MuDs and workplaces) and new infra incentive programs like those of the IOUs. The former should be included in a VW infra support investment program that should extend to DACs and low-income communities. With regard to the latter, (1) funding should cover necessary local electrical connection and grid upgrade on a 'make ready' basis and (2) customers should be given the choice of charging infrastructure types with a clear incentive to select chargers and service providers which are capable of smart charging to maximize charging using renewable energy and minimize incremental load at peak ramp times.
- CSE recommends that infrastructure priority be given to the deployment of technology with VGI capabilities, including networking, communication, demand response, and bidirectional charging. CSE also recommends that VW use existing readiness plans as infrastructure in "planned" areas (with readiness committees, streamlined codes, standards, and permitting) have an 87 percent increase in utilization.
- Fund group/fleet infrastructure purchase rates for workplaces.
- Half of all infrastructure funding should go to the Los Angeles region and should be structured to leverage funding from other sources (IOUs, SCAQMD, etc.). Candidate worksites should be identified using SCAQMD district rule 2202 and CalEnviroScreen 2.0. Dispense funding using a rebate program similar to CVRP. Create a direct install program with certified contractors. Chargers should either be networked (non-proprietary and open source) or on separate meters to track usage. Networked stations should be capable of demand response. There should be 8-10 Level 2 chargers or make-readies per site to improve effectiveness when accounting for ADA requirements and electrical supply considerations.

- Give priority to workplace charging, including behind the fence charging. We encourage CARB to provide guidance that would allow Volkswagen's ZEV Investment Plan to include incentives for fleets to expand the scope of planned EV charger installations to include workplace charging capabilities.

H. Public Awareness

The Board expressed three views regarding public awareness. First, several members believe that the existence of infrastructure is, and should be, part of the marketing of these vehicles. In and of itself, seeing the charging stations out there, especially if they're working charging stations and people are using them, is part of what gets people interested in the possibility of acquiring or using one of these vehicles. Second, the Board believes that public awareness needs to include a multi-cultural and multi-lingual outreach component, especially in order to reach disadvantaged communities. Finally, one Board member, reflecting on the first view, questioned how much money needs to go into advertising.

Commenters asked that VW make significant investments in ZEV public awareness to accelerate deployment of both PEVs and FCEVs. They asked that public awareness programs expose consumers not only to light-duty ZEV technology, both battery electric and fuel cell electric, but also medium-, and heavy-duty ZEV technology. They additionally asked that campaigns address both PEV and FCEV refueling infrastructure.

Many commenters offered their services or proposals to assist with the public awareness campaigns:

- PEV Collaborative (PEVC) staff introduced their new independent nonprofit 501(c)(3) corporation, called Veloz, and established to engage, educate and empower people from all walks of life in the electric car revolution. Veloz will spread the word at a scale never seen before. PEVC staff ask VW to join them in this effort. Several commenters seconded the need to incorporate Veloz into any California public awareness campaign.
- California's colleges and universities indicated that they have strong expertise in multimodal advertising campaigns and vehicle-related experiences. They would like to help in this area.
- We are the e4ATC, also known as the Advanced Transportation Center of Southern California. Use us to conduct market outreach and to act as regional convener, connecting VW with regional partners. e4ATC can identify potential workplace and fleet charging sites.

- Develop a web-based EV savings engine that calculates dollar savings on utility bills and fuel costs, by importing a consumer's utility data (one-click) and selecting current vehicle. Also calculates CO2 footprint reduction.
- National Drive Electric Week and other ride-and-drive events should be a critical piece of the brand neutral education and public awareness campaign.
- Fund ride-and -drive events, workplace charging workshops, the San Joaquin Valley EV Partnership webpage, and outreach and education materials.
- Maintain education and outreach efforts for FCEVs, perhaps in conjunction with the California Fuel Cell Partnership's 2017 Awareness Campaign.

Others suggested required elements of any successful campaign:

- Emphasize diverse (multi-lingual, culturally-sensitive, and trusted agent) tools that can be used in low-income communities for public education/awareness. Concentrate on disadvantaged communities.
- Use a single, statewide administrator for education and outreach activities. Benefits include consistent messaging, streamlining of event processes, economies of scale, the reduction of redundancies, and uniform data gathering and communications processes.

And one commenter expressed that seeing ZEVs being driven and refueled on the streets was a more potent outreach tool for ZEV uptake.

I. Increasing ZEV Access

Board members pointed out that we already have the EFMP Plus-Up program. And a scrap and replace program that VW engages in could certainly build upon that program. Commenters made several suggestions to improve ZEV access, primarily for low-income households, with most ideas centered on alternatives to vehicle ownership. It was suggested that zero emission car share, rideshare, ride hailing, vanpooling, and bike sharing be included in all four 30 month plans and that diverse payment options (cash/transit cards) be allowed. It was also suggested that the rates or fees for these programs be subsidized or that additional incentives be provided.

Other representative comments:

- Use VW funds to expand disadvantaged community access to secondary market ZEVs. This would include additional rebates and a scrap/replace program (similar to CARB's EFMP-Plus-Up pilot program).
- Establish special group buy or lease programs or set aggregated purchasing prices for low-income households. Include chargers in the purchase price. Prioritize the creation of car-sharing programs in communities with limited public transportation options.

J. Green City

One Board member encouraged other members as well as staff to be very clear about what we wanted. If we want to see transformation, then Volkswagen needs to put significant funds toward a transformative outcome. If we want to help be incremental, then Volkswagen can go broad and help many things get to the next level.

From stakeholders there were several unique Green Cities comments:

- Public transit should be included in all four 30 month cycles. Workforce development should be incorporated into a Green City Initiative with features capable of being replicated in multiple parts of CA.
- The Green City Initiative should incorporate zero emission maritime transportation.
- Choose a city that serves as an intermodal transport hub, connecting cars with rail, regional transit, and air. We think the City of San Diego would be suitable. Support intelligent traffic systems/ management.
- CARB should include guidance for the evaluation of communities that are ready for transformational investment. Community investment should be prioritized based upon several metrics including: existing infrastructure and marketing investments; status of EV readiness plans, codes and standards; and deployment expertise, as U.C. Davis can provide.
- Set 2020 and 2025 ZEV penetration targets. Priority should be given to a project that can forecast/demonstrate the most ZEV acceleration. Set per capita targets for refueling infrastructure that are consistent with California goals. Use high renewable energy content electricity.
- The Green City should allow for the emergence of a hydrogen hub - four or five stations in a region, with an approved readiness plan.
- Renewable hydrogen FCVs should be considered for Green City car share vehicles. Hydrogen storage technologies that enable integration of multiple energy types are suitable for Green Cities.

- Freight and transit applications, including electrical service and charging infrastructure, should have top priority as they are the most cost effective.
- Follow U.S. DOT Smart City competition
- Incorporate neighborhood electric vehicle (NEV) car sharing for disadvantaged communities
- The Green City program should allow for multiple close-knit communities (a sub-region of cities) instead of just one city.
- The initiative should be designed explicitly to foster the demonstration and spread of multiple types of investments in a diverse range of community types, rather than be limited to a single demonstration community. We further suggest that the more than 100 cities and counties participating in the Beacon Program are communities that have already demonstrated the readiness and commitment envisioned by the initiative.

Appendix B - Key Portions of CARB's Partial Consent Decrees

Once these settlements are final, California Air Resource Board's enforcement litigation against VW will be fully resolved.

I. Court-approved 2.0L joint CARB/EPA Partial Consent Decree

Under the 2.0L First Partial Consent Decree, approved by the federal court on October 25, 2016, VW committed to spending $1.2 billion (25 percent of the overall $4.7 billion national settlement) for projects and investments in California. This sum, in combination with the subsequent partial consent decrees, fully mitigates the past and future environmental harm VW caused, while protecting consumers and addressing the non-compliant vehicles. This 2.0L decree also provides for substantial penalties if VW violates any of its terms. This Decree is related to and cross-references two other settlements addressing the Federal Trade Commission claims and private consumer fraud claims. Additional filings for CARB/EPA, as well as FTC Orders and the private class action settlement, are available at the court's website: http://www.cand.uscourts.gov/crb/vwmdl.

A. Consumer Remedies in the 2.0L Partial Consent Decree

This 2.0L decree gives consumers several options with regard to their vehicles, each of which includes compensation. These options include having VW buyback their vehicle, having their vehicle repaired (if VW develops and warrants a government-approved and tested modification), and, for lessees, the option to cancel the lease and return the vehicle to VW. VW must buyback or fix at least 85% of the vehicles or pay an additional penalty to CARB. The first emissions modification was approved for the newer (generation 3) 2.0L cars in January 2017. The emissions modification for generations 1 and 2 are in development and approval is probably months off. The emissions modification provisions are contained in Appendix B of the 2.0L Partial Consent Decree.

While the original emissions levels to which the vehicles were certified cannot be achieved due to VW's violations, modifications for the three generations, if approved by CARB/EPA under this Decree, would reduce emissions by 80 to 90 percent, depending on the engine model year. Further, all excess emissions are already mitigated by the funding California will receive under the 2.0L decree.

B. VW Investments (Appendix C) in the 2.0L Partial Consent Decree

VW must invest $2 billion nationwide, including $800 million (40 percent) in California over ten years to advance California's nation-leading, zero-emissions vehicle (ZEV) programs. VW will develop a plan for the first 30 month $200 million California investments after CARB input and CARB approval following a public process. Pursuant to the terms of Appendix C of the 2.0 Partial Consent Decree, these investments will focus on infrastructure, brand-neutral education, and access projects for all Californians. This decree guides VW's investment, but the money does not transfer outside of VW.

C. National Mitigation Trust (Appendix D) in the 2.0L Partial Consent Decree

VW must also pay $2.7 billion in three $900 million annual payments into a court-established national mitigation trust as part of the 2.0 Partial Consent Decree. Over $381 million (representing California's share, over 14%, of the sales) of the trust funds will go to projects in California to reduce NOx and to mitigate past and future excess NOx emissions caused by the 2.0L cars. The trust is not yet established, but, when it is, the Governor's Office must designate a Lead Agency with 30 days to implement mitigation trust funding. VW has no control over the funds in the trust. Instead, the trustee will fund mitigation projects, drawn from a specified list in the 2.0L decree, to directly improve air quality. In California, trust-funded projects will benefit our most disadvantaged communities, many of which are located in high truck-traffic areas, by focusing on replacing older heavy-duty vehicles and equipment with new equipment using advanced zero and near-zero emission technologies. California will engage in a public process to help determine what projects are selected.

II. 3.0L Joint CARB/EPA and 3.0L California-only Partial Consent Decrees

Like the 2.0 L partial consent decree, the joint CARB/EPA 3.0 Second Partial Consent Decree and the separate California-only 3.0L Decree with VW would resolve CARB and EPA claims with regard to VW diesel vehicles equipped with 3.0L engines. Under the two proposed 3.0 L Decrees, California would receive about $66.4 million to mitigate past and future environmental harm VW caused, again while protecting consumers and addressing the vehicles. As with the 2.0L decree, the two 3.0L decrees also provide for substantial penalties if VW violates any of their terms. There are nearly 15,000 3.0 L diesel vehicles in California.

Under the federal Clean Air Act, the joint CARB/EPA 3.0L Partial Consent Decree must be released for public comment and that comment period is now open. When the period is closed the U.S. Department of Justice prepares a summary of comments and recommendation to the court. Concurrently with the CARB/EPA agreements, separate 3.0L settlement agreements for Federal Trade Commission and private consumer fraud class action claims are being finalized.

A. Consumer Remedies in the 3.0L Partial Consent Decree

Under the joint CARB/EPA 3.0L decree, consumers still have varying options for having their vehicles bought back or fixed. For the older vehicles (2009-2012 model years (MY) also known as generation 1), VW would need to immediately offer a buyback – which is likely to be VW's only option since a CARB/EPA approved emissions modification appears unlikely as a technical matter – and for lessees, the option to cancel the lease and return the vehicle to VW. For newer vehicles (2013-2016 MY cars also known as generation 2), VW has time to first hone an emissions modification for potential CARB/EPA approval; buyback and lease termination will occur only if VW cannot get its modification approved. While the original emissions levels to which the vehicles were certified cannot be achieved due to VW's violations, modifications, if approved under the Decree, would reduce emissions substantially.

B. National Mitigation Trust Supplemental Payment in the 3.0L Partial Consent Decree

Also as part of the joint CARB/EPA 3.0L consent decree, VW must add $225 million nationally, including over $41 million for California, into the 2.0 L Trust for use for projects to reduce NOx to fully mitigate past and future excess NOx emissions caused by the 3.0 L cars.

III. Separate California Settlement for the 3.0L Partial Consent Decree

The separate California-only 3.0L partial consent decree is also awaiting court approval, but there is no comment period. This decree focuses on transformative ZEV projects. It would require VW to sell three additional Battery Electric Vehicle (BEV) models – in addition to their current e-Golf – including two SUV BEVs, by 2020, with average sales of 5,000 annually from 2019 through 2025. It would also require VW to complete two Green City projects in California as part of the ZEV investments required by Appendix C to the 2.0L Partial Consent Decree; one city must be in a disadvantaged community of roughly 500,000 population. Green City projects include ZEV car share, ZEV transit

shuttles, and ZEV delivery fleets. And this separate California 3.0L decree filing would require VW to pay $25 million to the Air Pollution Control Fund to support the zero-emission-related aspects of the Enhanced Fleet Modernization Plus Up program to replace vehicles in low-income communities or the ZEV-related aspects of similar vehicle replacement programs. There is no federal counterpart to this ZEV-focused fund.

IV. California Civil Penalty and Costs Settlement

On January 10, 2017, VW agreed with CARB to resolve the last part of the case. Although the written agreement is still not finalized, in broad outline, VW agreed to pay an additional $153.8 million to resolve CARB's remaining claims. The first part, $93.8 million, is for civil penalties for sales of both the 2.0 and 3.0L vehicles which did not meet the certified standards. This additional amount is to underscore the seriousness of VW's behavior and to act as a deterrent to VW and other manufacturers. The second part, $60 million, is to be paid in six annual payments of $10 million per year. Both of these sums, by statute, will be deposited into the Air Pollution Control Fund and are available for the Legislature to appropriate. VW also agreed to an injunction not to violate California law.

Upon court approval, this last agreement will resolve CARB's enforcement case against VW although the implementation of the related agreements and consent decrees will stretch over the next 10 years.