

CALIFORNIA LEGISLATURE

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VOLKSWAGEN AND FIAT CHRYSLER EMISSIONS CONTROL VIOLATIONS: IMPACT ON CALIFORNIA

Senate Transportation and Housing and Environmental Quality Committees
Joint Oversight Hearing

Tuesday, March 21, 2017
1:30 p.m. — John L. Burton Hearing Room (4203)

Background Information

Introduction

California has some of the most severe air quality problems in the country. Nationally and statewide, the transportation sector is responsible for a major fraction of air pollution. Accordingly, the United States Environmental Protection Agency (US EPA) regulations require that, prior to introducing a vehicle for sale in the US; manufacturers must demonstrate that the vehicle meets federal emissions standards. In California, manufacturers must additionally demonstrate compliance with state air quality standards. Manufacturers who fail to comply are subject to civil penalties and other enforcement actions.

On September 3, 2015, representatives of Volkswagen (VW) admitted to staff of US EPA and the California Air Resources Board (ARB) that a large number of their vehicle engines had been designed and manufactured with a “defeat device” to bypass, defeat, or render inoperative elements of the vehicles’ emissions control system. As a result, these vehicles are able to pass emissions tests despite exceeding federal emissions standards by up to 40 times. This is due to the fact that the emission control system works while the vehicle is being tested, but is turned off by the defeat device when the car is being driven on the road. There are an estimated half-million of these vehicles in the US, of which about 70,000 are in California. On January 4, 2016, the US filed a complaint alleging that VW violated the Clean Air Act by selling approximately 590,000 diesel motor vehicles, model year 2009-2016, equipped with defeat devices.¹

¹ The complaint was filed against Volkswagen AG; Volkswagen Group of America, Inc.; Volkswagen Group of American Chattanooga Operations LLC; Audi AG; Dr. Ing H.c.F. Porsche AG; and Porsche Cars North America, Inc. These companies are collectively referred to in this document as Volkswagen.

On March 8, 2016, the Senate Transportation and Housing Committee and the Senate Environmental Quality Committee held a hearing titled “*Volkswagen’s ‘Defeat Device:’ Update and Implications for California.*”² This hearing examined how the defeat device was discovered, how US EPA and ARB were addressing the violations, how California’s air quality would be impacted, and how we can prevent such violations from occurring again. Since that hearing, US EPA, ARB, and the United States Department of Justice (US DOJ) have reached a settlement with VW relating to the affected 2.0-liter engines, as well as an initial settlement relating to the affected 3.0-liter engines. Further, on January 11, 2017, US DOJ announced a settlement of civil and criminal penalties.³

On January 12, 2017, ARB and US EPA issued Notices of Violation to Fiat Chrysler Automobiles (FCA) for failing to disclose auxiliary emissions control devices (AECDs); ARB has not yet determined whether these AECDs are actually defeat devices. ARB’s investigation involves about 14,000 Jeep Grand Cherokees and Ram 1500 pickup trucks, model years 2014-16 (there are approximately 104,000 of these vehicles nationwide). The discovery of the AECDs occurred as part of the expanded testing implemented by ARB and US EPA as a result of the VW investigation.

Today’s hearing will address the following questions:

- 1) How will VW compensate affected owners and lessors?
- 2) How will the VW settlement funds be distributed in California?
- 3) What role can the Legislature play in allocating the settlement funds?
- 4) How quickly can the state begin to mitigate the air quality impact of these vehicles?
- 5) How has ARB improved its engine certification procedures?
- 6) What is the status of the FCA investigation?

Background: Air Quality Standards

The Federal Clean Air Act (FCAA) — first passed in 1963 and revised many times thereafter —and its implementing regulations are intended to protect public health and environmental quality by limiting and reducing pollution from various sources. Under the FCAA, the US EPA establishes National Ambient Air Quality Standards (NAAQS) that apply to outdoor air throughout the country.

In 1969 and 1971, ARB set the first air quality standards for ozone, Particulate Matter (PM), oxides of nitrogen (NOx), oxides of sulfur (SOx), and carbon monoxide due to their negative impacts on public health above specified concentrations.

² For the background paper and materials for the March 8, 2016 hearing, please see <http://stran.senate.ca.gov/informationalhearings>.

³ Under the US DOJ settlement, VW will plead guilty to three criminal felony counts and pay a \$2.8 billion criminal penalty. Under separate civil resolutions of environmental, customs, and financial claims, VW will pay \$1.5 billion. These penalties are in addition to the \$14.7 billion settlement addressing 2.0 liter violations, the \$1 billion settlement addressing 3.0 liter violations, and the \$153.8 million California settlement for civil penalties and costs, all discussed later in this document.

The federal government followed suit and set NAAQS for six “criteria pollutants.” These included ground-level ozone, PM, NOx, SOx, and carbon monoxide, and added lead. Now, the US EPA reviews each NAAQS at five-year intervals to ensure that the standards are based on the most recent scientific information.

Regions that do not meet the national standards for any one of the standards are designated “nonattainment areas.” The FCAA sets deadlines for attainment based on the severity of nonattainment and requires states to develop comprehensive plans, known as the state implementation plan (SIP), to attain and maintain air-quality standards for each area designated nonattainment for an NAAQS.

NOx, the pollutant primarily of concern in the VW emissions cheating scandal, is of particular concern because it leads to the formation of smog, acid rain, PM, and ground level ozone.

The Health Impacts of Air Pollution

It is well known that air pollution causes asthma. California has some of the worst air pollution in the country and the state’s asthma rates are significantly higher for both children and adults than the national average. According to the Centers for Disease Control and Prevention, nationwide 7.4% of adults and 8.6% of children have been diagnosed with asthma. In California, the numbers are significantly higher: 13.1% of adults and 12.5% of children have been diagnosed with asthma. Lower income and minority groups are disproportionately affected by asthma due to their increased exposure to air pollution.

Beyond asthma, air pollution exposure can cause an increased risk of cardiovascular and respiratory illness, lung disease, cancerous tumors, birth defects, premature births, developmental disorders, central nervous system damage, intellectual disability, persistent memory impairments, epilepsy, dementia, and premature death.

The dirtiest air in California is largely concentrated in two areas: the South Coast and San Joaquin air basins, disproportionately affecting lower income households and minority groups. Both of these air basins are designated as extreme nonattainment by the US EPA.

The Role of Vehicles in Air Pollution

California has long understood that motor vehicles emit significant amounts of contaminants that cause air pollution in California, and has led the nation in promulgating motor vehicle emission control standards. For example, California first regulated tailpipe emission standards from new passenger vehicles in 1966, two years before EPA adopted any comparable federal tailpipe standards.

Recognizing that California had successfully promulgated regulations to control vehicle emissions, when the United States Congress enacted the Air Quality Act of 1967 it specifically authorized only California to establish vehicle emission standards that were separate from, and more stringent than, comparable federal standards. Since then, Congress has ratified and expanded California’s ability to establish its own motor vehicle emissions control program. These standards apply to PM, carbon monoxide, NOx, and hydrocarbons.

Since the 1960s, California has made great strides in instituting programs and measures to protect the state's air and reduce air pollution. Today, cars in California are 99% cleaner than they were in the 1960s due to the programs, rules, and regulations California has enacted, resulting in thousands of avoided premature deaths and even more avoided illness.

Although California's air quality has improved, the cities in the United States with the worst air quality are all still in California. In 2016, California cities occupied the top four positions for worst ozone and short-term PM, and seven positions for worst year-round PM.

Despite all of California's progress, criteria air pollutants from vehicles continue to present very real risks to human health and the environment.

VW Settlement Relating to 2.0-Liter Vehicles

On June 28, 2016, the US filed with the court a partial settlement with VW addressing vehicles containing 2.0-liter diesel engines; on October 25, 2016, the settlement was approved by the US District Court for the Northern District of California. The partial consent decree was agreed upon by VW, ARB, US EPA, and US DOJ. This \$14.7 billion agreement is the largest settlement in history involving an automaker. California will receive about \$1.2 billion from the consent decree, intended to mitigate the environmental damage caused by VW's deception.

The partial consent decree applies to the entire US, with special provisions for California. Specifically:

- 1) **Appendices A and B specify buyback, lease termination, and potential vehicle modification terms.** VW will offer affected customers the option of (a) a buyback (based on fair replacement value as of September 17, 2015) or lease termination (at no cost) or (b) an emissions modification. Customers can also choose to do neither. VW must remove from commerce in the US, or perform an emissions modification on, at least 85% of the affected 2.0 liter vehicles; in California, VW must meet an 85% recall rate. Any proposed emissions modification must be approved by both US EPA and ARB; if no emissions fix is approved, any vehicles bought back or with terminated leases must be recycled or scrapped.⁴ If VW fails to meet these numbers, it must pay specified penalties.
- 2) **Appendix C specifies VW's \$2 billion national investment commitment in zero-emission vehicles (ZEVs) over 10 years (\$800 million in California).** The decree stipulates that VW has final say over its proposal for spending Appendix C funding (provided it complies with the terms of the decree). Eligible investments include ZEV infrastructure, brand-neutral education and public awareness campaigns, ZEV access improvements for consumers at all income levels (e.g., scrap-and-replace programs, ZEV rideshare or ride hailing services), and a "Green City" initiative (e.g., ZEV car-sharing or ZEV freight transport projects). VW was required to submit a draft ZEV Investment Plan to ARB by February 22, 2017, which ARB may approve in whole or in part. The consent decree specifies what ARB may approve or partially approve. VW submitted the first proposed spending plan to ARB on March 8, 2017; ARB has

⁴ The first emissions modification was approved for Generation 3 (model year 2015) vehicles in January 2017. Modifications for Generations 1 and 2 are still under development.

posted the plan on its website for review and public comment, and will discuss it at their board meeting on March 23rd.

- 3) **Appendix D requires VW to pay \$2.7 billion into an Environmental Mitigation Trust to address past and future excess emissions of NO_x from VW 2.0 liter vehicles sold in the US.** Of this, California will receive \$381 million over a three-year period to fund projects to replace older and dirtier heavy-duty diesel vehicles and equipment with cleaner vehicles and equipment, including advanced zero- or near-zero-emission technologies. Once the trust is established, the Governor will have 30 days to appoint a lead agency to implement trust spending. According to ARB, the state will engage in a public process to help determine project selection.

As noted above, any emissions modification must be approved by ARB and US EPA and will be specific to the three types of engines in question, known as Generation 1, Generation 2, and Generation 3. On January 6, 2017, the two agencies announced approval of an emissions modification for a limited number of VW 2.0 liter diesel vehicles; specifically, Generation 3 vehicles for model year 2015. No other emissions modifications have been approved to date.

VW Settlement Relating to 3.0-Liter Vehicles

On December 20, 2016, another partial consent decree was filed with the court relating to the affected 3.0-liter diesel vehicles, model years 2009-16. This decree requires VW to pay \$225 million, of which California will receive about \$41 million, into the Environmental Mitigation Trust established pursuant to the 2.0-liter settlement. The decree also requires VW to offer to buy back, cancel leases, or modify (upon US EPA and ARB approval) the affected vehicles. Similar to the 2.0 liter agreement, VW must meet an 85% recall rate in California for the affected vehicles. This case affects about 83,000 vehicles, of which nearly 15,000 are in California.

The separate California Consent Decree requires VW to add a second “Green City” initiative in California in addition to the one required in Appendix C of the consent decree related to 2.0 liter vehicles. This second initiative must be implemented in a city with a population of approximately 500,000 that predominantly consists of disadvantaged communities. The decree also requires VW to provide at least two new battery electric vehicle (BEV) models for sale in California – including at least one sport utility BEV by 2019. VW must offer and sell an additional sport utility BEV model in California by 2020. VW must sell an average of 5,000 of these three additional BEV models in California from 2019 through 2025 for a total of 35,000 BEVs. ZEV credits generated by placement of these vehicles in California may not be sold in the ZEV credit market.

The California Consent Decree also requires VW to pay ARB \$25 million by July 1, 2017, to support efforts to make ZEVs available to more Californians. According to ARB, this funding will likely be used to expand programs such as EFMP Plus-Up and the Clean Vehicle Rebate Program, primarily or wholly in disadvantaged communities.

California Civil Penalty and Costs Settlement

On January 10, 2017, VW and ARB agreed on a resolution of the last part of the case (though it is still not final). VW agreed to pay an additional \$153.8 million to resolve ARB’s remaining claims. Of this, \$93.8 million is for civil penalties for sales of 2.0 and 3.0 Liter vehicles that violated

emissions standards. The remaining \$60 million (in payments of \$10 million per year, for six years is intended to act as a penalty to VW as well as a deterrent to VW and other manufacturers from similar actions in the future, and will cover future testing and implementation costs. VW also agreed to an injunction not to violate California law.

Bottom Line: What Can California Expect from the VW Settlements?

The programs funded with the settlement funds are intended to help mitigate the air quality impacts of Volkswagen's emissions violations. According to ARB, the original emissions levels to which the vehicles were certified cannot be achieved due to the violations. If modifications for all three generations of vehicles are approved and implemented, ARB estimates an 80 to 90 percent reduction in emissions.

The chart below summarizes the expected fiscal impact of the 2.0 Liter and 3.0 Liter settlements on California.

Settlement	Where the Money Goes	California Impact
2.0 Liter Settlement		
Appendices A and B: buyback; lease termination; emissions modification (if approved by ARB/US EPA)	Directly to consumers; lower amount if consumer retains vehicle and selects modification option. By June 2019, VW must achieve an 85% recall target of buyback and/or emissions modification in about 70,000 California-based vehicles.	VW to offer options directly to owners/lessees. If emissions modifications are approved, ARB will continue testing and will monitor required extended warranties and the durability of the modification.
Appendix C: ZEV commitment (\$1.2 billion total nationwide): ZEV charging infrastructure, education/ public awareness, ZEV access improvements, Green City initiative (in California only)	Does not go through the state treasury. Instead, ARB approves a new spending plan of at least \$200 million by VW every 30 months. A third party auditor will review the plans annually to ensure they meet the terms of the consent decree.	\$800 million over 10 years
Appendix D: NOx Mitigation Trust Fund (\$2.7 billion total nationwide paid in three \$900 million installments in November 2016, 2017, and 2018): NOx reduction projects to mitigate impact of 2.0 liter engines	The mitigation trust will allocate funds to specific projects designated by each state's plan. Details are unknown until the trust is established, probably in spring or summer 2017.	\$381 million over 3 years

3.0 Liter Settlement		
NOx Mitigation Trust Fund (\$225 million total nationwide)	Additional to the NOx Mitigation Trust Fund (see “Appendix D” above).	\$41.8 million
Buyback; lease termination; emissions modification (if approved by ARB/US EPA)	Directly to consumers. Buyback or modification for older Generation 1 vehicles if modification is approved; lower amount if consumer retains vehicle and selects modification option. For Generation 2 vehicles, no buyback option if emissions modification is approved. By June 2019, VW must achieve an 85% target recall for buyback and/or emissions modifications for about 15,000 California-based vehicles.	VW to offer options directly to owners/lessees
California Consent Decree: funding to ARB by 7/1/17 to increase ZEV access.	Payment directly to the Air Pollution Control Fund (under ARB) by July 1, 2017 to increase ZEV access (e.g., EFMP Plus-Up and CVRP).	\$25 million. In addition, VW must offer additional EV models for sale in California in 2019 and 2020. Additional 5,000 vehicles required annually about the ZEV regulatory mandate.
Civil Penalty and Cost Settlement (applies to both 2.0 and 3.0 Liter)		
Civil penalties and implementation costs (\$153 million total)	Combination of \$93.8 million in civil penalties and \$60 million for future testing/implementation costs, to be deposited into ARB’s Air Pollution Control Fund.	\$153.8 million (of which \$60 million will be allocated in payments of \$10 million/year for six years)

VW must report to ARB each year on the status of its investment projects. VW must also meet with ARB twice a year in person to provide status updates.

ARB Guidance to VW

As discussed above, the 2.0 Liter settlement requires VW to submit a proposed ZEV investment plan to ARB every 30 months for approval. In February 2017, following a public workshop and request for public comments in December, ARB published a document intended to guide VW on its first 30-month expenditure plan. In it, ARB states that it expects the plan to:

- 1) Provide investments that are complementary and additional to those already being made by the public and private sector in California;

- 2) Focus significant, targeted investments in a limited number of communities that represent a variety of community types, to create transformative outcomes;
- 3) Dedicate at least 35% of its investment to disadvantaged, low-income, underserved, and disproportionately impacted communities, identified in consultation with state agencies;
- 4) Place an initial priority on ZEV infrastructure and public awareness;
- 5) Include investment in hydrogen refueling infrastructure;
- 6) Include data collection and reporting; and
- 7) Refrain from interfering with or undermining established and emerging businesses in the marketplace.

ARB's guidance also recommends that about half of the ZEV investment plan be directed to infrastructure, with the remainder to be split between public awareness, ZEV access, and the Green City initiative.

Precedent for Investments in Electric Vehicle Charging Infrastructure

As noted above, the largest share of the VW settlements, namely the ZEV commitment portion of the 2.0 liter settlement, will be spent directly by VW, albeit through expenditure plans that must be approved by each state. This raises the question of why the courts did not choose to require VW to allocate the funds directly to the states to appropriate through their own legislative and budget processes.

In 2000-01, California faced an energy crisis that rocked the state with rolling blackouts. The economic and regulatory factors that led to the crisis are complex, but it is widely understood that market manipulation made possible by partial deregulation, illegal activities by power companies, capped retail electricity rates, and uncapped wholesale electricity rates, were the main factors.

Although NRG Energy, Inc. (NRG) itself did not exist at the time of the crisis, the company was born out of another Enron-era electric company that was directly involved in causing the energy crisis. In order to settle legal arguments with California stemming from its role in causing the crisis, NRG agreed to pay \$20 million in relief to state ratepayers and to spend an additional \$100 million to build electric vehicle charging infrastructure at no cost to the state. This included 200 fast charging stations and 10,000 parking spot chargers, all built by NRG subsidiary EVgo Services (EVgo).

As of the fourth quarter report last year, EVgo had completed 161 fast charging stations, with another 15 in the permitting phase or under construction, and had 3,321 electric vehicles "charging infrastructure-ready" parking spots completed, with another 1,665 under construction.

Alleged Fiat Chrysler Automobiles Violations

In September 2015, ARB and US EPA sent a letter to manufacturers of diesel passenger vehicles sold in the US informing them that both agencies would immediately be subjecting these vehicles to expanded testing. On January 12, 2017, ARB and US EPA issued Notices of Violation to FCA for failing to disclose auxiliary emission control devices (AECDs) in certain vehicles.⁵ AECDs alter a vehicle's emissions control equipment functions, and in doing so allow for excess NOx emissions. AECDs are allowed under very limited circumstances where the vehicle is in intense driving conditions that could cause engine damage, such as a fully loaded pickup driving up very steep hills, or when the vehicle is operating in extreme heat or cold. Any AECD, however, must be disclosed and justified by the manufacturer to ARB and US EPA in the engine certification application, and AECDs are not allowed to operate under regular driving conditions.

ARB's investigation involves about 14,000 Jeep Grand Cherokees and Ram 1500 pickup trucks, model years 2014-16 (there are approximately 104,000 of these vehicles nationwide). ARB has not yet determined whether the AECDs in question are in fact defeat devices. If FCA cannot justify why each undisclosed (and therefore illegal) AECD is necessary, each could constitute a defeat device and additional violation of state and federal law. Even if the AECDs are determined not to be defeat devices, ARB will seek through the enforcement process to ensure that FCA brings the vehicles into full compliance with state emissions standards as well as mitigating past, current, and future harm to the environment.

⁵ The violation notices were issued to Fiat Chrysler Automobiles US LLC, Fiat Chrysler Automobiles NV, and Chrysler Group LLC, collectively referred to in this paper as Fiat Chrysler Automobiles (FCA).