

Book of References

Table of Contents

Tab	Description
1.	The United States Department of Justice, Press Release, 17-037 “Volkswagen AG Agrees to Plead Guilty and Pay \$4.3 Billion in Criminal and Civil Penalties; Six Volkswagen Executives and Employees are Indicted in Connection with Conspiracy to Cheat U.S. Emissions Tests” (11 January 2017)
2.	United States of America v Volkswagen AG, 2017 WL 1093308
3.	Environment Canada, Statement, “Government of Canada opens an investigation into Volkswagen’s alleged use of defeat devices to circumvent emissions regulations (22 September 2015)
4.	David Bruser and Jesse McLean, “Volkswagen Canada resumes selling diesel cars at centre of emissions-testing scandal” Toronto Star (17 May 2017)
5.	Volkswagen Group Canada Inc., Press Release, “Courts approve consumer settlement in Canada for Volkswagen and Audi 2.0L TDI vehicles nationwide (21 April 2017)
6.	Letter from EPA and California Air Resources Board to VW, dated 6 January 2017
7.	Environment and Climate Change Canada, “Nitrogen Oxides - NOx” (24 April, 2013)
8.	Chossière GP, Malina R, Ashok A, et al. Public health impacts of excess NOx emissions from Volkswagen diesel passenger vehicles in Germany. Environmental Research Letters 2017;12:034014
9.	In Re: Volkswagen “Clean Diesel: Marketing, Sales Practices, and Products Liability Litigation, Partial Consent Decree (28 June 2016) (US Div Ct NCal 2016)
10.	Volkswagen Group of America, National ZEV Investment Plan: Cycle 1

Tab 1

(footnote 2)

JUSTICE NEWS

Department of Justice
Office of Public Affairs

FOR IMMEDIATE RELEASE

Wednesday, January 11, 2017

Volkswagen AG Agrees to Plead Guilty and Pay \$4.3 Billion in Criminal and Civil Penalties; Six Volkswagen Executives and Employees are Indicted in Connection with Conspiracy to Cheat U.S. Emissions Tests

VW to Pay \$2.8 Billion Criminal Fine in Guilty Plea and \$1.5 Billion Settlement of Civil Environmental, Customs and Financial Violations; Monitor to Be Appointed to Oversee the Parent Company

Volkswagen AG (VW) has agreed to plead guilty to three criminal felony counts and pay a \$2.8 billion criminal penalty as a result of the company's long-running scheme to sell approximately 590,000 diesel vehicles in the U.S. by using a defeat device to cheat on emissions tests mandated by the Environmental Protection Agency (EPA) and the California Air Resources Board (CARB), and lying and obstructing justice to further the scheme, the Justice Department announced today.

In separate civil resolutions of environmental, customs and financial claims, VW has agreed to pay \$1.5 billion. This includes EPA's claim for civil penalties against VW in connection with VW's importation and sale of these cars, as well as U.S. Customs and Border Protection (CBP) claims for customs fraud. In addition, the EPA agreement requires injunctive relief to prevent future violations. The agreements also resolve alleged violations of the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA).

The Criminal Case:

VW is charged with and has agreed to plead guilty to participating in a conspiracy to defraud the United States and VW's U.S. customers and to violate the Clean Air Act by lying and misleading the EPA and U.S. customers about whether certain VW, Audi and Porsche branded diesel vehicles complied with U.S. emissions standards, using cheating software to circumvent the U.S. testing process and concealing material facts about its cheating from U.S. regulators. VW is also charged with obstruction of justice for destroying documents related to the scheme, and with a separate crime of importing these cars into the U.S. by means of false statements about the vehicles' compliance with emissions limits. Under the terms of the plea agreement, which must be accepted by the court, VW will plead guilty to all these crimes, will be on probation for three years, will be under an independent corporate compliance monitor who will oversee the company for at least three years, and agrees to fully cooperate in the Justice Department's ongoing investigation and prosecution of individuals responsible for these crimes.

In addition, a federal grand jury in the Eastern District of Michigan returned an indictment today charging six VW executives and employees for their roles in the nearly 10-year conspiracy. Heinz-Jakob Neusser, 56; Jens Hadler, 50; Richard Dorenkamp, 68; Bernd Gottweis, 69; Oliver Schmidt, 48; and Jürgen Peter, 59, all of Germany, are charged with one count of conspiracy to defraud the United States, defraud VW's U.S. customers and violate the Clean Air Act by making false representations to regulators and the public about the ability of VW's supposedly "clean diesel" vehicles to comply with U.S. emissions requirements. The indictment also charges Dorenkamp, Neusser, Schmidt and Peter with Clean Air Act violations and charges Neusser, Gottweis, Schmidt and Peter with wire fraud counts. This case has been assigned to U.S. District Judge Sean F. Cox of the Eastern District of Michigan.

Schmidt was arrested on Jan. 7, 2017, in Miami during a visit to the United States and appeared in federal court there on Monday. The other defendants are believed to presently reside in Germany.

Today's announcement was made by Attorney General Loretta E. Lynch, EPA Administrator Gina McCarthy and Assistant Administrator Cynthia Giles, Deputy Attorney General Sally Q. Yates, FBI Deputy Director Andrew McCabe, Acting Deputy Secretary Russell C. Deyo for the Department of Homeland Security, U.S. Attorney Barbara L. McQuade of the Eastern District of Michigan, Assistant Attorney General Leslie R. Caldwell of the Justice Department's Criminal Division, Assistant Attorney General John C. Cruden of the Justice Department's Environment and Natural Resources Division and Principal Deputy Assistant Attorney General Benjamin C. Mizer of the Justice Department's Civil Division.

"Volkswagen's attempts to dodge emissions standards and import falsely certified vehicles into the country represent an egregious violation of our nation's environmental, consumer protection and financial laws," said Attorney General Lynch. "Today's actions reflect the Justice Department's steadfast commitment to defending consumers, protecting our environment and our financial system and holding individuals and companies accountable for corporate wrongdoing. In the days ahead, we will continue to examine Volkswagen's attempts to mislead consumers and deceive the government. And we will continue to pursue the individuals responsible for orchestrating this damaging conspiracy."

"When Volkswagen broke the law, EPA stepped in to hold them accountable and address the pollution they caused," said EPA Administrator McCarthy. "EPA's fundamental and indispensable role becomes all too clear when companies evade laws that protect our health. The American public depends on a strong and active EPA to deliver clean air protections, and that is exactly what we have done."

"This wasn't simply the action of some faceless, multinational corporation," said Deputy Attorney General Yates. "This conspiracy involved flesh-and-blood individuals who used their positions within Volkswagen to deceive both regulators and consumers. From the start of this investigation, we've been committed to ensuring that those responsible for criminal activity are held accountable. We've followed the evidence—from the showroom to the boardroom—and it brought us to the people whose indictments we're announcing today."

"Americans expect corporations to operate honestly and provide accurate information," said Deputy Director McCabe. "Volkswagen's data deception defrauded the U.S. government, violated the Clean Air Act and eroded consumer trust. This case sends a clear message to corporations, no matter how big or small, that if you lie and disregard rules that protect consumers and the environment, you will be caught and held accountable."

"Blatant violations of U.S. customs and environmental laws will not be tolerated, and this case reinforces that," said Acting Deputy Secretary Deyo. "These actions put our economy, consumers and citizens at risk, and the Department of Homeland Security and U.S. Customs and Border Protection will continue to take every step necessary to protect the American people."

According to the indictment, the individuals occupied the following positions within the company:

1. Heinz-Jakob Neusser: from July 2013 until September 2015, Neusser worked for VW as head of Development for VW Brand and was also on the management board for VW Brand. From October 2011 until July 2013, Neusser served as the head of Engine Development for VW.
2. Jens Hadler: from May 2007 until March 2011, Hadler worked for VW as head of Engine Development for VW.
3. Richard Dorenkamp: from 2003 until December 2013, Dorenkamp worked for VW as the head of VW's Engine Development After-Treatment Department in Wolfsburg, Germany. From 2006 until 2013, Dorenkamp led a team of engineers that developed the first diesel engine that was designed to meet the new, tougher emissions standards in the United States.
4. Bernd Gottweis: from 2007 until October 2014, Gottweis worked for VW as a supervisor with responsibility for Quality Management and Product Safety.
5. Oliver Schmidt: from 2012 through February 2015, Schmidt was the General Manager in charge of the Environment and Engineering Office, located in Auburn Hills, Michigan. From February 2015 through September 2015, Schmidt returned to VW headquarters to work directly for Neusser, including on emissions issues.

6. Jürgen Peter: Peter worked in the VW Quality Management and Product Safety Group from 1990 until the present. From March 2015 until July 2015, Peter was one of the VW liaisons between the regulatory agencies and VW.

According to the charging documents and statement of facts filed with the court, in 2006, VW engineers began to design a new diesel engine to meet stricter U.S. emissions standards that would take effect by model year 2007. This new engine would be the cornerstone of a new project to sell diesel vehicles in the United States that would be marketed to buyers as “clean diesel,” a project that was an important strategic goal for VW’s management. When the co-conspirators realized that they could not design a diesel engine that would both meet the stricter NOx emissions standards and attract sufficient customer demand in the U.S. market, they decided they would use a software function to cheat standard U.S. emissions tests.

VW engineers working under Dorenkamp and Hadler designed and implemented a software to recognize whether a vehicle was undergoing standard U.S. emissions testing on a dynamometer or it was being driven on the road under normal driving conditions. The software accomplished this by recognizing the standard published drive cycles. Based on these inputs, if the vehicle’s software detected that it was being tested, the vehicle performed in one mode, which satisfied U.S. NOx emissions standards. If the software detected that the vehicle was not being tested, it operated in a different mode, in which the vehicle’s emissions control systems were reduced substantially, causing the vehicle to emit NOx up to 40 times higher than U.S. standards.

Disagreements over the direction of the project were articulated at a meeting over which Hadler presided, and which Dorenkamp attended. Hadler authorized Dorenkamp to proceed with the project knowing that only the use of the defeat device software would enable VW diesel vehicles to pass U.S. emissions tests. Starting with the first model year 2009 of VW’s new “clean diesel” engine through model year 2016, Dorenkamp, Neusser, Hadler and their co-conspirators installed, or caused to be installed, the defeat device software into the vehicles imported and sold in the United States. In order to sell their “clean diesel” vehicles in the United States, the co-conspirators lied to the EPA about the existence of their test-cheating software, hiding it from the EPA, CARB, VW customers and the U.S. public. Dorenkamp, Neusser, Hadler, Gottweis, Schmidt, Peter and their co-conspirators then marketed, and caused to be marketed, VW diesel vehicles to the U.S. public as “clean diesel” and environmentally-friendly.

Around 2012, hardware failures developed in certain of the diesel vehicles. VW engineers believed the increased stress on the exhaust system from being driven in the “dyno mode” could be the cause of the hardware failures. In July 2012, VW engineers met with Neusser and Gottweis to explain what they believed to be the cause of the hardware failures and explained the defeat device. Gottweis and Neusser each encouraged further concealment of the software. In 2014, the co-conspirators perfected their cheating software by starting the vehicle in “street mode,” and, when the defeat device realized the vehicle was being tested, switching to the “dyno mode.” To increase the ability of the vehicle’s software to recognize that it was being tested on the dynamometer, the VW engineers activated a “steering wheel angle recognition feature.” With these alterations, it was believed the stress on the exhaust system would be reduced because the engine would not be operating for as long in “dyno mode.” The new function was installed in existing vehicles through software updates. The defendants and other co-conspirators falsely represented, and caused to be represented, to U.S. regulators, U.S. customers and others that the software update was intended to improve durability and emissions issues in the vehicles when, in fact, they knew it was used to more quickly deactivate emission control systems when the vehicle was not undergoing emissions tests.

After years of VW selling their “clean diesel” vehicles in the United States that had the cheating software, in March 2014, West Virginia University’s Center for Alternative Fuels, Engines and Emissions published the results of a study commissioned by the International Council on Clean Transportation (ICCT). The ICCT study identified substantial discrepancies in the NOx emissions from certain VW vehicles when tested on the road compared to when these vehicles were undergoing EPA and CARB standard drive cycle tests on a dynamometer. Rather than tell the truth, VW employees, including Neusser, Gottweis, Schmidt and Peter, pursued a strategy to disclose as little as possible – to continue to hide the existence of the software from U.S. regulators, U.S. customers and the U.S. public.

Following the ICCT study, CARB, in coordination with the EPA, attempted to work with VW to determine the cause for the higher NOx emissions in VW diesel vehicles when being driven on the road as opposed to on the dynamometer undergoing standard emissions test cycles. To do this, CARB, in coordination with the EPA, repeatedly asked VW questions that became increasingly more specific and detailed, and tested the vehicles themselves. In implementing

their strategy of disclosing as little as possible, Neusser, Gottweis, Schmidt, Peter and their co-conspirators provided EPA and CARB with testing results, data, presentations and statements in an attempt to make it appear that there were innocent mechanical and technological problems to blame, while secretly knowing that the primary reason for the discrepancy was their cheating software that was installed in every VW diesel vehicle sold in the United States. The co-conspirators continued this back-and-forth with the EPA and CARB for over 18 months, obstructing the regulators' attempts to uncover the truth.

The charges in the indictment are merely accusations and each defendant is presumed innocent unless and until proven guilty.

The case was investigated by the FBI and EPA-CID. The prosecution and corporate investigation are being handled by Securities and Financial Fraud Unit Chief Benjamin D. Singer and Trial Attorneys David Fuhr, Alison Anderson, Christopher Fenton and Gary Winters of the Criminal Division's Fraud Section; Trial Attorney Jennifer Blackwell of the Environment and Natural Resources Division's Environmental Crimes Section; and from the U.S. Attorney's Office for the Eastern District of Michigan, Criminal Division Chief Mark Chutkow and White Collar Crime Unit Chief John K. Neal and Assistant U.S. Attorney Timothy J. Wyse. The Justice Department's Office of International Affairs also assisted in the case. The Justice Department also extends its thanks to the Office of the Public Prosecutor in Braunschweig, Germany.

The Civil Resolutions:

The first civil settlement resolves EPA's remaining claims against six VW-related entities (including Volkswagen AG, Audi AG and Porsche AG) currently pending in the multidistrict litigation before U.S. District Judge Charles R. Breyer of the Northern District of California. EPA's complaint alleges that VW violated the Clean Air Act by selling approximately 590,000 cars that the United States alleges are equipped with defeat devices and, during normal operation and use, emit pollution significantly in excess of EPA-compliant levels. VW has agreed to pay \$1.45 billion to resolve EPA's civil penalty claims, as well as the civil penalty claim of CBP described below. The consent decree resolving the Clean Air Act claims also resolves EPA's remaining claim in the complaint for injunctive relief to prevent future violations by requiring VW to undertake a number of corporate governance reforms and perform in-use testing of its vehicles using a portable emissions measurement system of the same type used to catch VW's cheating in the first place. Today's settlement is in addition the historic \$14.7 billion settlement that addressed the 2.0 liter cars on the road and associated environmental harm announced in June 2016, and \$1 billion settlement that addressed the 3.0 liter cars on the road and associated environmental harm announced in December 2016, which together included nearly \$3 billion for environmental mitigation projects.

A second civil settlement resolves civil fraud claims asserted by U.S. Customs and Border Protection (CBP) against VW entities. VW entities violated criminal and civil customs laws by knowingly submitting to CBP material false statements and omitting material information, over multiple years, with the intent of deceiving or misleading CBP concerning the admissibility of vehicles into the United States. CBP enforces U.S. customs laws as well as numerous laws on behalf of other governmental agencies related to health, safety, and border security. At the time of importation, VW falsely represented to CBP that each of the nearly 590,000 imported vehicles complied with all applicable environmental laws, knowing those representations to be untrue. CBP's relationship with the importing community is one based on trust, and this resolution demonstrates that CBP will not tolerate abrogation of importer responsibilities and schemes to defraud the revenue of the United States. The \$1.45 billion paid under the EPA settlement also resolves CBP's claims.

In a third settlement, VW has agreed to pay \$50 million in civil penalties for alleged violations of FIRREA. The Justice Department alleged that a VW entity supported the sales and leasing of certain VW vehicles, including the defeat-device vehicles, by offering competitive financing terms by purchasing from dealers certain automobile retail installment contracts (i.e. loans) and leases entered into by customers that purchased or leased certain VW vehicles, as well as dealer floorplan loans. These financing arrangements were primarily collateralized by the vehicles underlying the loan and lease transactions. The department alleged that certain of these loans, leases and floorplan financings were pooled together to create asset-backed securities and that federally insured financial institutions purchased certain notes in these securities. Today's FIRREA resolution is part of the department's ongoing efforts to deter wrongdoers from using the financial markets to facilitate their fraud and to ensure the stability of the nation's financial system.

Except where based on admissions by VW, the claims resolved by the civil agreements are allegations only.

The civil settlements were handled by the Environmental and Natural Resources Division's Environmental Enforcement Section, with assistance from the EPA; the Civil Division's Commercial Litigation Branch; and CBP.

* * *

Court documents:

[VW AG Plea Agreement](#)

[VW AG Third Partial Consent Decree](#)

[VW AG Notice of Third Partial Consent Decree](#)

[VW AG Third Superseding Information](#)

[Firrea Settlement Agreement](#)

[VW AG CPB Settlement](#)

[VW AG Second Superseding Indictment](#)

Component(s):

[Civil Division](#)

[Criminal Division](#)

[Environment and Natural Resources Division](#)

[Office of the Attorney General](#)

Press Release Number:

17-037

Updated January 11, 2017

Tab 2

(footnote 3)

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN

----- X
United States of America, : No. 16-CR-20394
 :
 : Plaintiff, : HONORABLE SEAN F. COX
 :
 v. :
 :
 VOLKSWAGEN AG, : Offenses: (1) Conspiracy
 : (2) Obstruction of Justice
 : (3) Entry of Goods by
 Defendant. : False Statement
 :
 :
 : Violations: (1) 18 U.S.C. § 371
 : (2) 18 U.S.C. § 1512(c)
 : (3) 18 U.S.C. § 542
 :
 :
 : Statutory Maximum Period of
 : Probation:
 : Five years per count
 :
 :
 : Statutory Minimum Period of
 : Probation:
 : None/Not Applicable
 :
 :
 : Statutory Maximum Fine: 18 U.S.C.
 : § 3571(d) (the greater of twice the
 : gross gain or twice the gross loss)
 :
 :
 : Statutory Minimum Fine: None/Not
 : Applicable
----- X

Rule 11 Plea Agreement

The United States of America, by and through the Department of Justice, Criminal Division, Fraud Section, the United States Attorney's Office for the Eastern District of Michigan, and the Department of Justice, Environment and Natural Resources Division, Environmental Crimes Section and with the approval of the Deputy Attorney General (collectively hereafter, "the Offices"), and the Defendant, Volkswagen AG (the "Defendant"), by and through its undersigned attorneys, and through its authorized representative, pursuant to authority granted by the Defendant's Management Board, with the consent of the Supervisory Board, hereby submit and enter into this plea agreement (the "Agreement"), pursuant to Rule 11(c)(1)(C) of the Federal Rules of Criminal Procedure. The terms and conditions of this Agreement are as follows:

1. Guilty Plea

A. Waiver of Indictment and Venue

Pursuant to Fed. R. Crim. P. 7, the Defendant agrees to knowingly waive its right to grand jury indictment and its right to challenge venue in the United States District Court for the Eastern District of Michigan, and to plead guilty to Counts One through Three of the Third Superseding Information.

B. Counts of Conviction

The Third Superseding Information charges three counts: (1) Count One - conspiracy in violation of 18 U.S.C. § 371, (2) Count Two - obstruction of justice in

violation of 18 U.S.C. § 1512(c), and (3) Count Three – introducing imported merchandise into the United States by mean of false statements in violation of 18 U.S.C. § 542. The Defendant further agrees to persist in that plea through sentencing and, as set forth below, to cooperate fully with the Offices in their investigation into the conduct described in this Agreement and other conduct related to the introduction into the United States of diesel vehicles with defeat devices as defined under U.S. law.

C. Elements of Offenses

The elements of Count One (conspiracy) are as follows:

(1) The elements for conspiracy to defraud the United States by obstructing the lawful function of the federal government are as follows:

(a) That two or more persons conspired, or agreed, to defraud the United States or one of its agencies or departments, in this case, the Environmental Protection Agency (EPA), by dishonest means;

(b) That the defendant knowingly and voluntarily joined the conspiracy; and

(c) That a member of the conspiracy did one of the overt acts described in the indictment for the purpose of advancing or helping the conspiracy.

(2) The elements for conspiracy to violate the wire fraud statute and Clean Air Act are as follows:

(a) That two or more persons conspired, or agreed, to commit a crime, in this case, a violation of the wire fraud statute (18 U.S.C. § 1343) and the Clean Air Act (42 U.S.C. § 7413(c)(2)(A)) as described below;

(b) That the defendant knowingly and voluntarily joined the conspiracy; and

(c) That a member of the conspiracy did one of the overt acts described in the indictment for the purpose of advancing or helping the conspiracy.

Object of the Conspiracy – Wire Fraud – 18 U.S.C. § 1343:

(a) The defendant knowingly participated in, devised, or intended to devise a scheme to defraud in order to obtain money or property;

(b) The scheme included a material misrepresentation or concealment of a material fact;

(c) The defendant had the intent to defraud; and

(d) The defendant used (or caused another to use) wire, radio or television communications in interstate or foreign commerce in furtherance of the scheme.

Object of the Conspiracy – Clean Air Act – 42 U.S.C. § 7413(c)(2)(A)

(a) The defendant knowingly made (or caused to be made) a false material statement, representation, or certification, or omission of material information;

(b) The statement, representation or certification that was made (or omitted), or caused to be made or omitted, was in a notice, application, record, report, plan or other document required to be filed or maintained under the Clean Air Act; and

(c) The statement, representation, certification, or omission of information, was material.

The elements of Count Two (obstruction of justice) are as follows:

(1) That the defendant altered, destroyed, mutilated, or concealed a record, document or other object;

(2) That the defendant acted knowingly;

(3) That the defendant acted corruptly; and

(4) That the defendant acted with the intent to impair the record, document or object's integrity or availability for use in an official proceeding.

The elements of Count Three (entry of goods by false statement) are as follows:

- (1) That merchandise was imported;
- (2) That the defendant entered or introduced merchandise into the commerce of the United States;
- (3) That the defendant did so by means of a false statement, which it knew was false; and
- (4) That the false statement was material to the entry of the merchandise.

D. Statutory Maximum Penalties

The statutory maximum sentence that the Court can impose for a violation of Title 18, United States Code, Section 371 (Count One) is a fine of \$500,000 or twice the gross pecuniary gain or gross pecuniary loss resulting from the offense, whichever is greatest, Title 18, United States Code, Section 3571(c), (d); five years' probation, Title 18, United States Code, Section 3561(c)(1); and a mandatory special assessment of \$400, Title 18, United States Code, Section 3013(a)(2)(B). The statutory maximum sentence that the Court can impose for a violation of Title 18, United States Code, Section 1512(c) (Count Two) is a fine of \$500,000; five years' probation, Title 18, United States Code, Section 3561(c)(1); and a mandatory special assessment of \$400, Title 18, United States Code, Section 3013(a)(2)(B). The statutory maximum sentence that the Court can impose for a violation of Title 18,

United States Code, Section 542 (Count Three) is a fine of \$500,000 or twice the gross pecuniary gain or gross pecuniary loss resulting from the offense, whichever is greatest, Title 18, United States Code, Section 3571(c), (d); five years' probation, Title 18, United States Code, Section 3561(c)(1); and a mandatory special assessment of \$400, Title 18, United States Code, Section 3013(a)(2)(B).

E. Factual Basis for Guilty Plea

The Defendant is pleading guilty because it is guilty of the charges contained in the Third Superseding Information. The Defendant admits, agrees, and stipulates that the factual allegations set forth in Exhibit 2 (the Statement of Facts) are true and correct, that it is responsible under the laws of the United States for the acts of its employees described in Exhibit 2, and that the facts set forth in Exhibit 2 accurately reflect the Defendant's criminal conduct and provide a factual basis for the guilty plea. The Defendant agrees that it will neither contest the admissibility of, nor contradict, the Statement of Facts contained in Exhibit 2 in any proceeding.

2. Sentencing Guidelines

A. Standard of Proof

The Court will find sentencing factors by a preponderance of the evidence.

B. Guideline Range

There are no disputes with respect to the sentencing guidelines that require resolution by the court. While the Defendant does not adopt, agree or accept the United States Sentencing Guidelines (U.S.S.G.) analysis contained herein, for

purposes of avoiding the need for a contested sentencing proceeding and achieving a just and fair result, and because the Defendant agrees that the overall fine proposed herein achieves such a result, the Defendant does not contest the factual or legal basis of the Office’s U.S.S.G. analysis contained in this Paragraph for the purposes of this proceeding and stipulates that the proposed fine constitutes a reasonable sentence under the factors listed in Title 18, United States Code, Section 3553(a). Pursuant to *United States v. Booker*, 543 U.S. 220 (2005), the Court must determine an advisory sentencing guideline range pursuant to the United States Sentencing Guidelines (U.S.S.G.). The Court will then determine a reasonable sentence within the statutory range after considering the advisory sentencing guideline range and the factors listed in Title 18, United States Code, Section 3553(a). The Defendant also understands that if the Court accepts this Agreement, the Court is bound by the sentencing provisions in Paragraph 3. The Offices submit that a faithful application of the U.S.S.G. to determine the applicable fine range yields the following analysis:

- a. The 2016 U.S.S.G. are applicable to this matter.
- b. Offense Level. Based upon U.S.S.G. § 2B1.1, the total offense level is 41, calculated as follows:

(a)(1)	Base Offense Level	7
(b)(1)(P)	Amount of Loss > \$550 million	+30
(b)(2)(A)(i)	More Than 10 Victims	+2
(b)(10)(B)	Substantial Part of Scheme Committed from Outside the United States	<u>+2</u>

TOTAL 41

c. Base Fine. Based upon U.S.S.G. § 8C2.4(a), the base fine is \$8,543,169,187 (the pecuniary loss from the offense caused by the Defendant)

d. Culpability Score. Based upon U.S.S.G. § 8C2.5, the culpability score is 11, calculated as follows:

(a) Base Culpability Score 5

(b)(1) the unit of the organization within which the offense was committed had 5,000 or more employees and an individual within high-level personnel of the unit participated in, condoned, or was willfully ignorant of the offense +5

(e) obstruction of justice +3

(g)(3) The organization fully cooperated in the investigation and clearly demonstrated recognition and affirmative acceptance of responsibility for its criminal conduct - 2

TOTAL 11

Calculation of Fine Range:

Base Fine	\$8,543,169,187 ¹
Multipliers	2 (min)/4 (max)
Fine Range	\$17,086,338,374 (min)/ \$34,172,676,746 (max)

¹ The base fine amount consists of the loss amount as calculated under USSG § 2B1.1 and accompanying Application Notes, discounted to reflect a 50% reduction for the litigation risk that both parties would bear were there a contested sentencing proceeding. *See, e.g., United States v. Giovenco*, 773 F.3d 866 (7th Cir. 2014); *United States v. Prospero*, 686 F.3d 32 (1st Cir. 2012).

3. **Sentence**

Pursuant to Fed. R. Crim. P. 11(c)(1)(C), the United States and the Defendant agree that the appropriate disposition of this case is as set forth in this Section and agree to recommend jointly that the Court at a hearing to be scheduled at an agreed upon time impose it.

A. **Relevant Considerations**

The Offices enter into this Agreement based on the individual facts and circumstances presented by this case and the Defendant. Among the factors considered were the following:

1. the Defendant did not voluntarily disclose to the Offices the conduct described in Exhibit 2 (the Statement of Facts);
2. the Defendant cooperated with the Offices' investigation by, among other things, (i) gathering substantial amounts of evidence and performing forensic data collections in multiple jurisdictions; (ii) producing documents, including translations, to the Offices in ways that did not implicate foreign data privacy laws; (iii) collecting, analyzing, organizing, and producing voluminous evidence and information; (iv) interviewing hundreds of witnesses in the United States and overseas; (v) providing non-privileged facts relating to individuals and companies involved in the criminal conduct; and (vi) facilitating and encouraging

cooperation and voluntary disclosure of information and documents by current and former company personnel;

3. the Defendant has already agreed to compensate members of the class in *In re Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation*, No. 3:15-md-2672 (N.D. Cal.), which consists of victims of the underlying criminal conduct that is the subject of this Agreement, and to pay into a NOx remediation trust, in an aggregate amount of approximately \$11 billion (based on net present value);

4. despite obstruction of justice committed by certain of the Defendant's employees, principally in the form of document destruction, the Defendant, including through its outside counsel, self-disclosed this conduct to the Offices, remediated the conduct by recovering large portions of the deleted documents through a variety of forensic means, and conducted a thorough investigation of the conduct, the findings of which it reported to the Offices;

5. the Defendant engaged in remedial measures, including creation of a management board position to supervise the Defendant's legal and compliance functions, reorganization of the whistleblower system, improvements to its risk assessment systems, specific reforms to its engine-related practices, including a program to audit these reforms, termination the employment of six individuals who participated in, or failed to supervise employees who participated in, the misconduct

described in the Statement of Facts, suspending an additional eight individuals who participated in the misconduct described in the Statement of Facts for varying periods, and disciplining an additional three employees who participated in the misconduct described in the Statement of Facts; however, the Defendant's remediation remains incomplete;

6. the Defendant has committed to continue to enhance its compliance program and internal controls;

7. the Defendant has agreed, as part of its continuing cooperation obligations, and to ensure that the Defendant and its wholly-owned subsidiary Volkswagen Group of America ("VW GOA") implements an effective compliance program, to the appointment of an independent monitor (the "Monitor") for a period of up to three years, who will have authority with respect to the Defendant and VW GOA;

8. the nature and seriousness of the offenses;

9. the Defendant has no prior criminal history;

10. the Defendant has agreed to continue to cooperate with the Offices in any ongoing investigation of the conduct of the Defendant and its officers, directors, employees, agents, business partners, and consultants relating to the violations to which the Defendant is pleading guilty; and

11. the Defendant has agreed to pay an additional \$1,500,000,000 to the United States to resolve claims for civil penalties arising from the underlying conduct that is the subject of this Agreement;

12. accordingly, after considering (1) through (11) above, (a) the Defendant received an aggregate discount of approximately 20% off of the bottom of the otherwise applicable U.S. Sentencing Guidelines fine range, reflecting its cooperation in the investigation, and (b) after application of the foregoing discount, the Defendant in addition received a credit of \$11 billion, representing the net present value of the Defendant's settlements with consumers and payments to the NOx remediation trust in settlement of civil litigation.

B. Fine

The Defendant shall pay to the United States a criminal fine of \$2,800,000,000, payable in full within ten days of the entry of judgment following the sentencing hearing in this matter. The Defendant shall not seek or accept directly or indirectly reimbursement or indemnification from any source with regard to the penalty amount that the Defendant pays pursuant to this Agreement. The Defendant further agrees that it shall not claim, assert, or apply for, either directly or indirectly, any tax deduction, tax credit, or any other offset with regard to any U.S. federal, state, or local tax or taxable income for any fine or forfeiture paid pursuant to this Agreement.

C. Probation

The parties agree that a term of organizational probation for a period of three years should be imposed on the Defendant pursuant to 18 U.S.C. §§ 3551(c)(1) and 3561(c)(1). The parties further agree, pursuant to U.S.S.G. § 8D1.4, that the term of probation shall include as conditions the obligations set forth in Paragraphs 5 and 6 below as well as the payment of the fine set forth in this Paragraph, but shall not include the obligations set forth in Paragraph 7 below.

D. Special Assessment

The Defendant shall pay to the Clerk of the Court for the United States District Court for the Eastern District of Michigan within ten days of the time of sentencing the mandatory special assessment of \$1,200 (\$400 per count).

E. Restitution

No order of restitution is appropriate in this case pursuant to 18 U.S.C. § 3663A(c)(3), as the number of identifiable victims is so large as to make restitution impracticable and/or determining complex issues of fact related to the cause or amount of victims' losses would complicate or prolong the sentencing process to a degree that the need to provide restitution to any victim is outweighed by the burden on the sentencing process. Moreover, as noted in Paragraph 2(A) above, the Defendant has already agreed to compensate members of the class in *In re Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability*

Litigation, No. 3:15-md-2672 (N.D. Cal.), which consists of individuals who purchased affected vehicles described in Exhibit 2.

4. **Other Charges**

In exchange for the guilty plea of the Defendant and the complete fulfillment of all of its obligations under this Agreement, the Offices agree that they will not file additional criminal charges against the Defendant or any of its direct or indirect affiliates or subsidiaries related to: (1) any conduct described in the Third Superseding Information or Exhibit 2; (2) any conduct related to the emissions, or compliance with U.S. emissions standards, of the Subject Vehicles or the Porsche Vehicles as described and defined in the Third Superseding Information and Exhibit 2; and (3) any conduct disclosed by, or on behalf of, the Defendant or otherwise known to the Offices or the EPA as of the date of this Agreement. The Offices, however, may use any information related to the conduct described in the Statement of Facts against the Defendant: (a) in a prosecution for perjury or obstruction of justice apart from the charge in the Third Superseding Information and identified in the Statement of Facts; (b) in a prosecution for making a false statement; (c) in a prosecution or other proceeding relating to any crime of violence; or (d) in a prosecution or other proceeding relating to a violation of any provision of Title 26 of the United States Code. This Paragraph does not provide any protection against prosecution for any other conduct, including but not limited

to crimes committed in the future by the Defendant or by any of its affiliates, subsidiaries, officers, directors, employees, agents or consultants, whether or not disclosed by the Defendant pursuant to the terms of this Agreement. In addition, this Agreement does not provide any protection against prosecution of any joint ventures of which the Defendant is a part, or any individuals, regardless of their affiliation with the Defendant. The Defendant agrees that nothing in this Agreement is intended to release the Defendant from any and all of the Defendant's excise and income tax liabilities and reporting obligations for any and all income not properly reported and/or legally or illegally obtained or derived.

5. The Defendant's Obligations

A. Except as otherwise provided in Paragraph 6 below in connection with the Defendant's cooperation obligations, the Defendant's obligations under the Agreement shall last and be effective for a period beginning on the date on which the Third Superseding Information is filed and ending three years from the later of the date on which the Third Superseding Information is filed or the date on which the Monitor is retained by the Defendant, as described in Paragraph 15 below (the "Term"). The Defendant agrees, however, that, in the event the Offices determine, in their sole discretion, that the Defendant has failed specifically to perform or to fulfill each of the Defendant's obligations under this Agreement, an extension or extensions of the Term may be imposed by the Offices, in their sole discretion, for

up to a total additional time period of one year, without prejudice to the Offices' right to proceed as provided in Paragraph 9 below. Any extension of the Term extends all terms of this Agreement, including the terms of the Monitorship in Exhibit 3, for an equivalent period. Conversely, in the event the Offices find, in their sole discretion, that there exists a change in circumstances sufficient to eliminate the need for the Monitorship in Exhibit 3, and that the other provisions of this Agreement have been satisfied, the Term may be terminated early, except for the Defendant's cooperation obligations described in Paragraph 6 below.

B. The Defendant agrees to abide by all terms and obligations of this Agreement as described herein, including, but not limited to, the following:

1. to plead guilty as set forth in this Agreement;
2. to abide by all sentencing stipulations contained in this Agreement;
3. to appear, through its duly appointed representatives, as ordered for all court appearances, and obey any other ongoing court order in this matter, consistent with all applicable U.S. and foreign laws, procedures, and regulations;
4. to commit no further crimes;
5. to be truthful at all times with the Court and the Offices;
6. to pay the applicable fine and special assessments;

7. to cooperate with and report to the Offices as provided in Paragraph 6; and

8. to continue to implement a compliance and ethics program designed to prevent and detect fraudulent conduct throughout its operations.

C. The Defendant agrees that any fine or restitution imposed by the Court will be due and payable in full within ten days of the entry of judgment following the sentencing hearing, and the Defendant will not attempt to avoid or delay payment. The Defendant further agrees to pay the Clerk of the Court for the United States District Court for the Eastern District of Michigan the mandatory special assessment of \$400 per count within ten business days from the date of sentencing.

6. The Defendant's Cooperation and Reporting Obligations

A. The Defendant shall cooperate fully with the Offices in any and all matters relating to the conduct described in this Agreement and Exhibit 2, and other related conduct under investigation by the Offices during the Term, subject to applicable law and regulations, until the later of the date upon which all investigations and prosecutions arising out of such conduct are concluded, or the end of the Term. At the request of the Offices, the Defendant shall also cooperate fully with other domestic law enforcement and regulatory authorities and agencies in any investigation of the Defendant, its parent company or its affiliates, or any of its present or former officers, directors, employees, agents, and consultants, or any other

party, in any and all matters relating to the conduct described in this Agreement and Exhibit 2, and other conduct related to the Defendant's installation of defeat devices and false and fraudulent representations pertaining thereto. The Defendant agrees that its cooperation pursuant to this Paragraph shall include, but not be limited to, the following:

1. The Defendant shall truthfully disclose all factual information not protected by a valid claim of attorney-client privilege or attorney work product doctrine, or by applicable law and regulations, including applicable data protection laws, with respect to its activities, those of its parent company and affiliates, and those of its present and former directors, officers, employees, agents, and consultants, including any evidence or allegations and internal or external investigations, about which the Defendant has any knowledge or about which the Offices may inquire. This obligation of truthful disclosure includes, but is not limited to, the obligation of the Defendant to provide to the Offices, upon request, any document, record or other tangible evidence about which the Offices may inquire of the Defendant.

2. Upon request of the Offices, the Defendant shall designate knowledgeable employees, agents or attorneys to provide to the Offices the information and materials described in Paragraph 6(A)(1) above on behalf of the Defendant. It is further understood that the Defendant must at all times provide complete, truthful, and accurate information.

3. The Defendant shall use its best efforts to make available for interviews or testimony, as requested by the Offices, present or former officers, directors, employees, agents and consultants of the Defendant. This obligation includes, but is not limited to, sworn testimony before a federal grand jury or in federal trials, as well as interviews with domestic law enforcement and regulatory authorities. Cooperation under this Paragraph shall include identification of witnesses who, to the knowledge of the Defendant, may have material information regarding the matters under investigation.

4. With respect to any information, testimony, documents, records or other tangible evidence provided to the Offices pursuant to this Agreement, the Defendant consents to any and all disclosures, subject to applicable law and regulations, including applicable data protection laws, to other governmental authorities in the United States of such materials as the Offices, in their sole discretion, shall deem appropriate.

B. In addition to the obligations in Paragraph 6(A), during the Term, should the Defendant learn of any evidence or allegation of a violation of U.S. federal law by or on behalf of the Defendant and relating to emissions of its vehicles, false or misleading statements made to public authorities or regulators, fraud or misrepresentations in the sale or marketing of its products, or obstruction of any pending or contemplated U.S. federal, state or local investigation or proceeding, the

Defendant shall promptly report such evidence or allegation to the Offices. Thirty days prior to the end of the Term, the Defendant, by the Chief Executive Officer of the Defendant and the Chief Financial Officer of the Defendant, will certify to the Offices that the Defendant has met its disclosure obligations pursuant to this Paragraph. Each certification will be deemed a material statement and representation by the Defendant to the executive branch of the United States for purposes of 18 U.S.C. § 1001, and it will be deemed to have been made in the judicial district in which this Agreement is filed.

7. Other Obligations

A. The Defendant agrees to retain an independent compliance monitor in accordance with Exhibit 3 of this Agreement.

B. While the obligation set forth in this Paragraph is not a condition to the term of probation, any failure to comply with the obligation set forth in this Paragraph shall constitute a breach of this Agreement and be subject to the terms set forth in Paragraph 9 below.

8. Waiver of Appellate and Other Rights Under United States Law

A. The Defendant understands that by entering into this Agreement, the Defendant surrenders certain rights as provided in this Agreement. The Defendant understands that the rights of criminal defendants in the United States include the following:

1. the right to plead not guilty and to persist in that plea;
2. the right to a jury trial;
3. the right to be represented by counsel – and if necessary have the court appoint counsel – at trial and at every other stage of the proceedings;
4. the right at trial to confront and cross-examine adverse witnesses, to be protected from compelled self-incrimination, to testify and present evidence, and to compel the attendance of witnesses; and
5. pursuant to Title 18, United States Code, Section 3742, the right to appeal the sentence imposed.

B. Nonetheless, the Defendant knowingly waives the right to appeal the conviction and any sentence within the statutory maximum described above (or the manner in which that sentence was determined) on the grounds set forth in Title 18, United States Code, Section 3742, or on any ground whatsoever except those specifically excluded in this Paragraph, in exchange for the concessions made by the United States in this plea agreement. This Agreement does not affect the rights or obligations of the United States as set forth in Title 18, United States Code, Section 3742(b). The Defendant hereby waives all rights, whether asserted directly or by a representative, to request or receive from any department or agency of the United States any records pertaining to the investigation or prosecution of this case, including without limitation any records that may be sought under the Freedom of

Information Act, Title 5, United States Code, Section 552, or the Privacy Act, Title 5, United States Code, Section 552a. The Defendant waives all defenses based on the statute of limitations and venue with respect to any federal prosecution related to the conduct described in Exhibit 2 or the Third Superseding Information, including any prosecution that is not time-barred on the date that this Agreement is signed in the event that: (a) the conviction is later vacated for any reason; (b) the Defendant violates this Agreement; or (c) the plea is later withdrawn, provided such prosecution is brought within one year of any such vacation of conviction, violation of agreement, or withdrawal of plea plus the remaining time period of the statute of limitations as of the date that this Agreement is signed. The Offices are free to take any position on appeal or any other post-judgment matter. The parties agree that any challenge to the Defendant's sentence that is not foreclosed by this Paragraph will be limited to that portion of the sentencing calculation that is inconsistent with (or not addressed by) this waiver. Nothing in the foregoing waiver of appellate rights shall preclude the Defendant from raising a claim of ineffective assistance of counsel in an appropriate forum.

C. Federal Rule of Criminal Procedure 11(f) and Federal Rule of Evidence 410 limit the admissibility of statements made in the course of plea proceedings or plea discussions in both civil and criminal proceedings, if the guilty plea is later withdrawn. The Defendant expressly warrants that it has discussed these rules with

its counsel and understands them. Solely to the extent set forth below, the Defendant voluntarily waives and gives up the rights enumerated in Federal Rule of Criminal Procedure 11(f) and Federal Rule of Evidence 410. Specifically, the Defendant understands and agrees that any statements that it makes in the course of its guilty plea or in connection with the Agreement, including the Statement of Facts set forth as Exhibit 2 to the Agreement, are admissible against it for any purpose in any U.S. federal criminal proceeding if, even though the Offices have fulfilled all of their obligations under this Agreement and the Court has imposed the agreed-upon sentence, the Defendant nevertheless withdraws its guilty plea.

9. Breach of Agreement

A. If the Defendant (a) commits any felony under U.S. federal law; (b) provides in connection with this Agreement deliberately false, incomplete, or misleading information; (c) fails to cooperate as set forth in Paragraph 6 of this Agreement; (d) fails to implement a compliance program as set forth in Paragraph 3(A)(7) of this Agreement; or (e) otherwise fails specifically to perform or to fulfill each of the Defendant's obligations under the Agreement, regardless of whether the Offices become aware of such a breach after the Term of the Agreement, the Defendant shall thereafter be subject to prosecution for any federal criminal violation of which the Offices have knowledge, including, but not limited to, the charges in the Third Superseding Information described in Paragraph 1, which may

be pursued by the Offices in the United States District Court for the Eastern District of Michigan or any other appropriate venue. Determination of whether the Defendant has breached the Agreement and whether to pursue prosecution of the Defendant shall be in the Offices' sole discretion. Any such prosecution may be premised on information provided by the Defendant. Any such prosecution relating to the conduct described in the attached Statement of Facts or relating to conduct known to the Offices prior to the date on which this Agreement was signed that is not time-barred by the applicable statute of limitations on the date of the signing of this Agreement may be commenced against the Defendant, notwithstanding the expiration of the statute of limitations, between the signing of this Agreement and the expiration of the Term of the Agreement plus one year. Thus, by signing this Agreement, the Defendant agrees that the statute of limitations with respect to any such prosecution that is not time- barred on the date of the signing of this Agreement shall be tolled for the Term of the Agreement plus one year. The Defendant gives up all defenses based on the statute of limitations, any claim of pre-indictment delay, or any speedy trial claim with respect to any such prosecution or action, except to the extent that such defenses existed as of the date of the signing of this Agreement. In addition, the Defendant agrees that the statute of limitations as to any violation of federal law that occurs during the term of the cooperation obligations provided for in Paragraph 6 of the Agreement will be tolled from the date upon which the

violation occurs until the earlier of the date upon which the Offices are made aware of the violation or the duration of the term plus three years, and that this period shall be excluded from any calculation of time for purposes of the application of the statute of limitations.

B. In the event the Offices determine that the Defendant has breached this Agreement, the Offices agree to provide the Defendant with written notice of such breach prior to instituting any prosecution resulting from such breach. Within thirty (30) days of receipt of such notice, the Defendant shall have the opportunity to respond to the Offices in writing to explain the nature and circumstances of such breach, as well as the actions the Defendant has taken to address and remediate the situation, which explanation the Offices shall consider in determining whether to pursue prosecution of the Defendant.

C. In the event that the Offices determine that the Defendant has breached this Agreement: (a) all statements made by or on behalf of the Defendant to the Offices or to the Court, including the attached Statement of Facts, and any testimony given by the Defendant before a grand jury, a court, or any tribunal, or at any legislative hearings, whether prior or subsequent to this Agreement, and any leads derived from such statements or testimony, shall be admissible in evidence in any and all criminal proceedings brought by the Offices against the Defendant; and (b) the Defendant shall not assert any claim under the United States Constitution,

Rule 11(f) of the Federal Rules of Criminal Procedure, Rule 410 of the Federal Rules of Evidence, or any other federal rule that any such statements or testimony made by or on behalf of the Defendant prior or subsequent to this Agreement, or any leads derived therefrom, should be suppressed or are otherwise inadmissible. The decision whether conduct or statements of any current director, officer or employee, or any person acting on behalf of, or at the direction of, the Defendant, will be imputed to the Defendant for the purpose of determining whether the Defendant has violated any provision of this Agreement shall be in the sole discretion of the Offices.

D. The Defendant acknowledges that the Offices have made no representations, assurances, or promises concerning what sentence may be imposed by the Court if the Defendant breaches this Agreement and this matter proceeds to judgment. The Defendant further acknowledges that any such sentence is solely within the discretion of the Court and that nothing in this Agreement binds or restricts the Court in the exercise of such discretion.

10. Parties to Plea Agreement

The Defendant understands and agrees that this Agreement is between the Offices and the Defendant. Nevertheless, the Offices will bring this Agreement and the nature and quality of the conduct, cooperation and remediation of the Defendant, its direct or indirect affiliates and subsidiaries to the attention of other prosecuting

authorities or other agencies, as well as debarment authorities, if requested by the Defendant.

The Defendant agrees that this Agreement will be executed by an authorized corporate representative. The Defendant further agrees that a resolution duly adopted by the Defendant's Management Board, with the consent of the Supervisory Board in the form attached to this Agreement as Exhibit 1, authorizes the Defendant to enter into this Agreement and take all necessary steps to effectuate this Agreement, and that the signatures on this Agreement by the Defendant and its counsel are authorized by the Defendant's Management Board, with the consent of the Supervisory Board, on behalf of the Defendant.

The Defendant agrees that it has the full legal right, power, and authority to enter into and perform all of its obligations under this Agreement.

11. Change of Corporate Form

Except as may otherwise be agreed by the parties in connection with a particular transaction, the Offices may require, in their sole discretion, that, in the event that, during the Term of the Agreement, the Defendant undertakes any change in corporate form, including if it sells, merges, or transfers business operations that are material to the Defendant's consolidated operations, or to the operations of any subsidiaries or affiliates involved in the conduct described in Exhibit 2 (the Statement of Facts), as they exist as of the date of this Agreement, whether such sale

is structured as a sale, asset sale, merger, transfer, or other change in corporate form, the Defendant shall include in any contract for sale, merger, transfer, or other change in corporate form a provision binding the purchaser, or any successor in interest thereto, to the obligations described in this Agreement. If the Offices so require, the purchaser or successor in interest must also agree in writing that the Offices' ability to declare a breach under this Agreement is applicable in full force to that entity, and the Defendant will agree that the failure to include these provisions in the transaction will make any such transaction null and void. The Defendant shall provide notice to the Offices at least thirty (30) days prior to undertaking any such sale, merger, transfer, or other change in corporate form. The Offices will inform the Defendant within such 30-day period if the Offices require the Defendant to take the steps referred to above. If the Offices notify the Defendant prior to such transaction (or series of transactions) that they have determined that the transaction(s) has the effect of circumventing or frustrating the enforcement purposes of this Agreement, as determined in the sole discretion of the Offices, the Defendant agrees that such transaction(s) will not be consummated. In addition, if at any time during the Term of the Agreement the Offices determine in their sole discretion that the Defendant has engaged in a transaction(s) that has the effect of circumventing or frustrating the enforcement purposes of this Agreement, they may deem it a breach of this Agreement pursuant to Paragraph 9 of this Agreement. Nothing herein shall restrict

the Defendant from indemnifying (or otherwise holding harmless) the purchaser or successor in interest for penalties or other costs arising from any conduct that may have occurred prior to the date of the transaction, so long as such indemnification does not have the effect of circumventing or frustrating the enforcement purposes of this Agreement, as determined by the Offices.

12. Failure of Court to Accept Agreement

This Agreement is presented to the Court pursuant to Fed. R. Crim. P. 11(c)(1)(C). The Defendant understands that, if the Court rejects this Agreement, the Court must: (a) inform the parties that the Court rejects the Agreement; (b) advise the Defendant's counsel that the Court is not required to follow the Agreement and afford the Defendant the opportunity to withdraw its plea; and (c) advise the Defendant that if the plea is not withdrawn, the Court may dispose of the case less favorably toward the Defendant than the Agreement contemplated. The Defendant further understands that if the Court refuses to accept any provision of this Agreement, neither party shall be bound by the provisions of the Agreement.

13. Presentence Report

The Defendant and the Offices waive the preparation of a Pre-Sentence Investigation Report. The Defendant understands that the decision whether to proceed with the sentencing without a Pre-Sentence Investigation Report is exclusively that of the Court. In the event the Court directs the preparation of a Pre-

Sentence Investigation Report, the Offices will fully inform the preparer of the Pre-Sentence Investigation Report and the Court of the facts and law related to the Defendant's case. At the time of the plea hearing, the parties will suggest mutually agreeable and convenient dates for the sentencing.

14. Public Statements by the Defendant

A. The Defendant expressly agrees that it shall not, through present or future attorneys, officers, directors, employees, agents or any other person authorized to speak for the Defendant make any public statement, in litigation or otherwise, contradicting the acceptance of responsibility by the Defendant set forth above, contradicting the fact that the Defendant has pled guilty to the charges set forth in the Third Superseding Information, or contradicting the facts described in Exhibit 2. Any such contradictory statement shall, subject to cure rights of the Defendant described below, constitute a breach of this Agreement, and the Defendant thereafter shall be subject to prosecution as set forth in Paragraph 9 of this Agreement. The decision whether any such contradictory statement will be imputed to the Defendant for the purpose of determining whether it has breached this Agreement shall be at the sole discretion of the Offices. If the Offices determine that a public statement by any such person contradicts in whole or in part the fact that the Defendant pled guilty to the charges in the Third Superseding Information or a statement contained in Exhibit 2, the Offices shall so notify the Defendant, and

the Defendant may avoid a breach of this Agreement by publicly repudiating such statement(s) within five business days after notification. The Defendant shall be permitted to raise defenses, to take legal positions and to assert affirmative claims in other proceedings relating to the matters set forth in the Third Superseding Information and Exhibit 2 provided that such defenses and claims do not contradict, in whole or in part, the fact that the Defendant pled guilty to the charges in the Third Superseding Information or a statement in Exhibit 2. This Paragraph does not apply to any statement made by any present or former officer, director, employee, or agent of the Defendant in the course of any criminal, regulatory, or civil case initiated against such individual, unless such individual is speaking on behalf of the Defendant.

B. The Defendant agrees that if it or any of its direct or indirect subsidiaries or affiliates issues a press release or holds any press conference in connection with this Agreement, the Defendant shall first consult the Offices to determine (a) whether the text of the release or proposed statements at the press conference are true and accurate with respect to matters between the Offices and the Defendant; and (b) whether the Offices have any objection to the release or statement.

15. **Independent Compliance Monitor**

A. Promptly after the Offices' selection pursuant to Paragraph 15(B) below, the Defendant agrees to retain the Monitor for the term specified in Paragraph 15(C). The Monitor's duties and authority, and the obligations of the Defendant with respect to the Monitor and the Offices, are set forth in Exhibit 3, which is incorporated by reference into this Agreement. The same Monitor shall serve as the Independent Auditor appointed pursuant to Paragraph 27(b) of the Third Partial Consent Decree in *In re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation*, MDL No. 2672 CRB (JSC) (N.D. Cal.). No later than the date of execution of this Agreement, and after consultation with the Offices, the Defendant will propose to the Offices a pool of three qualified candidates to serve as the Monitor. If the Offices determine, in their sole discretion, that any of the candidates are not, in fact, qualified to serve as the Monitor, or if the Offices, in their sole discretion, are not satisfied with the candidates proposed, the Offices reserve the right to seek additional nominations from the Defendant. The parties will endeavor to complete the monitor selection process within sixty (60) days of the execution of this Agreement. The Monitor candidates or their team members shall have, at a minimum, the following qualifications:

1. demonstrated expertise with respect to federal anti-fraud and environmental laws, including experience counseling on these issues;

2. experience designing and/or reviewing corporate ethics and compliance programs, including anti-fraud policies, procedures and internal controls;

3. knowledge of automotive or similar industries;

4. the ability to access and deploy resources as necessary to discharge the Monitor's duties as described in the Agreement;

5. sufficient independence from the Defendant to ensure effective and impartial performance of the Monitor's duties as described in the Agreement; and

6. the qualifications set out in Paragraph 27(a) of the Third Partial Consent Decree in *In re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation*, MDL No. 2672 CRB (JSC) (N.D. Cal.).

B. The Offices retain the right, in their sole discretion, to choose the Monitor from among the candidates proposed by the Defendant, though the Defendant may express its preference(s) among the candidates. In the event the Offices reject all proposed Monitors, the Defendant shall propose an additional three candidates within twenty (20) business days after receiving notice of the rejection. This process shall continue until a Monitor acceptable to both parties is chosen. The Offices and the Defendant will use their best efforts to complete the selection process within sixty (60) calendar days of the execution of this Agreement. If, during the

term of the monitorship, the Monitor becomes unable to perform his or her obligations as set out herein and in Exhibit 3, or if the Offices in their sole discretion determine that the Monitor cannot fulfill such obligations to the satisfaction of the Offices, the Offices shall notify the Defendant of the release of the Monitor, and the Defendant shall within thirty (30) calendar days of such notice recommend a pool of three qualified Monitor candidates from which the Offices will choose a replacement.

C. The Monitor's term shall be three years from the date on which the Monitor is retained by the Defendant, subject to extension or early termination as described in Paragraph 5. The Monitor's powers, duties, and responsibilities, as well as additional circumstances that may support an extension of the Monitor's term, are set forth in Exhibit 3. The Defendant agrees that it will not employ or be affiliated with the Monitor or the Monitor's firm for a period of not less than two years from the date on which the Monitor's term expires. Nor will the Defendant discuss with the Monitor or the Monitor's firm the possibility of further employment or affiliation during the Monitor's term.

16. Complete Agreement

This document states the full extent of the Agreement between the parties. There are no other promises or agreements, express or implied. Any modification of this Agreement shall be valid only if set forth in writing in a supplemental or revised plea agreement signed by all parties.

AGREED:

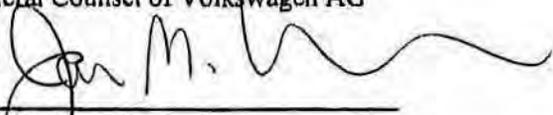
FOR VOLKSWAGEN AG:

Date: January 11, 2017

By: 

Manfred Doess
General Counsel of Volkswagen AG

Date: January 11, 2017

By: 

Reid Weingarten
Jason Weinstein
Christopher Niewoehner
Steptoe & Johnson LLP
Outside counsel for Volkswagen AG

Date: 11 January 2017

By: 

Aaron R. Marcu
Olivia A. Radin
Linda Martin
Freshfields Bruckhaus Deringer US
LLP
Outside counsel for Volkswagen AG

Date: January 11, 2017

By: 

Robert J. Giuffra, Jr.
Sharon L. Nelles
Brent J. McIntosh
Sullivan & Cromwell LLP
Outside counsel for Volkswagen AG

FOR THE DEPARTMENT OF JUSTICE:

ANDREW WEISSMANN
Chief, Fraud Section
Criminal Division

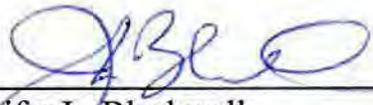
Date: 1/11/17

By: 

Benjamin D. Singer
Chief, Securities and Financial Fraud
Unit
Gary A. Winters
Alison Anderson
David Fuhr
Trial Attorneys

JOHN CRUDEN
Assistant Attorney General
Environment and Natural Resources
Division

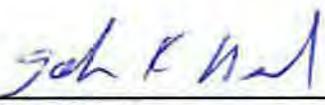
Date: 1/11/17

By: 

Jennifer L. Blackwell
Trial Attorney

BARBARA L. McQUADE
United States Attorney Eastern District
of Michigan

Date: 1/11/17

By: 

John K. Neal
Chief, White Collar Crime Unit

EXHIBIT 1

CERTIFICATE OF CORPORATE RESOLUTIONS

A copy of the executed Certificate of Corporate Resolutions is annexed hereto
as "Exhibit 1."

COMPANY OFFICER'S CERTIFICATE

I have read the plea agreement between Volkswagen AG (the "Defendant") and the United States of America, by and through the Department of Justice, Criminal Division, Fraud Section, the United States Attorney's Office for the Eastern District of Michigan, and the Department of Justice, Environment and Natural Resources Division, Environmental Crimes Section (the "Agreement") and carefully reviewed every part of it with outside counsel for the Defendant. I understand the terms of the Agreement and voluntarily agree, on behalf of the Defendant, to each of its terms. Before signing the Agreement, I consulted outside counsel for the Defendant. Counsel fully advised me of the rights of the Defendant, of possible defenses, of the Sentencing Guidelines' provisions, and of the consequences of entering into this Agreement.

I have carefully reviewed the terms of the Agreement with the Management Board and the Supervisory Board. I have advised and caused outside counsel for the Defendant to advise the Management Board and the Supervisory Board fully of the rights of the Defendant, of possible defenses, of the Sentencing Guidelines' provisions, and of the consequences of entering into the Agreement.

No promises or inducements have been made other than those contained in the Agreement. Furthermore, no one has threatened or forced me, or to my knowledge any person authorizing the Agreement on behalf of the Defendant, in any

way to enter into the Agreement. I am also satisfied with outside counsel's representation in this matter. I certify that I am the General Counsel for the Defendant and that I have been duly authorized by the Defendant to execute the Agreement on behalf of the Defendant.

Date: January 11, 2017

VOLKSWAGEN AG

By: 

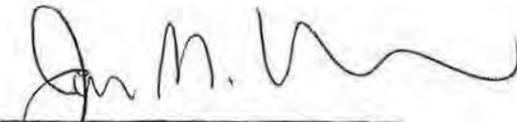
Manfred Doess
General Counsel

CERTIFICATE OF COUNSEL

I am counsel for Volkswagen AG (the "Defendant") in the matter covered by the plea agreement between the Defendant and the United States of America, by and through the Department of Justice, Criminal Division, Fraud Section, the United States Attorney's Office for the Eastern District of Michigan, and the Department of Justice, Environment and Natural Resources Division, Environmental Crimes Section (the "Agreement"). In connection with such representation, I have examined relevant documents and have discussed the terms of the Agreement with the Management Board and the Supervisory Board. Based on our review of the foregoing materials and discussions, I am of the opinion that the representative of the Defendant has been duly authorized to enter into the Agreement on behalf of the Defendant and that the Agreement has been duly and validly authorized, executed, and delivered on behalf of the Defendant and is a valid and binding obligation of the Defendant. Further, I have carefully reviewed the terms of the Agreement with the Management Board and the Supervisory Board and the officers of the Defendant. I have fully advised them of the rights of the Defendant, of possible defenses, of the Sentencing Guidelines' provisions and of the consequences of entering into the Agreement. To my knowledge, the decision of the Defendant to enter into the Agreement, based on the authorization of the Management Board, with the consent of the Supervisory Board, is an informed and voluntary one.

Date: January 11, 2017

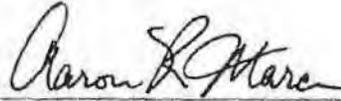
By:



Reid Weingarten
Jason Weinstein
Christopher Niewoehner
Steptoe & Johnson LLP
Counsel to Volkswagen AG

Date: 11 January 2017

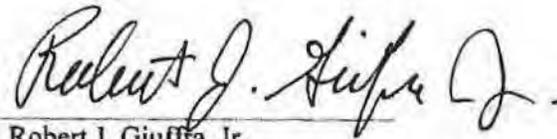
By:



Aaron R. Marcu
Olivia A. Radin
Linda Martin
Freshfields Bruckhaus Deringer
US LLP
Counsel to Volkswagen AG

Date: January 11, 2017

By:



Robert J. Giuffra, Jr.
Sharon L. Nelles
Brent J. McIntosh
Sullivan & Cromwell LLP
Counsel for Volkswagen AG

EXHIBIT 2

STATEMENT OF FACTS

The following Statement of Facts is incorporated by reference as part of the Plea Agreement (the "Agreement") between the United States Department of Justice (the "Department") and Volkswagen AG ("VW AG"). VW AG hereby agrees and stipulates that the following information is true and accurate. VW AG admits, accepts, and acknowledges that under U.S. law it is responsible for the acts of its employees set forth in this Statement of Facts, which acts VW AG acknowledges were within the scope of the employees' employment and, at least in part, for the benefit of VW AG. All references to legal terms and emissions standards, to the extent contained herein, should be understood to refer exclusively to applicable U.S. laws and regulations, and such legal terms contained in this Statement of Facts are not intended to apply to, or affect, VW AG's rights or obligations under the laws or regulations of any jurisdiction outside the United States. This Statement of Facts does not contain all of the facts known to the Department or VW AG; the Department's investigation into individuals is ongoing. The following facts took place during the time frame specified in the Third Superseding Information and establish beyond a reasonable doubt the charges set forth in the criminal Information attached to this Agreement:

Relevant Entities and Individuals

1. VW AG was a motor vehicle manufacturer based in Wolfsburg, Germany. Under U.S. law, VW AG acts through its employees, and conduct undertaken by VW AG, as described herein, reflects conduct undertaken by employees. Pursuant to applicable German stock corporation law, VW AG was led by a Management Board that was supervised by a Supervisory Board. Solely for purposes of this Statement of Facts, unless otherwise indicated, references in this Statement of Facts to “supervisors” are to senior employees below the level of the VW AG Management Board.

2. Audi AG (“Audi”) was a motor vehicle manufacturer based in Ingolstadt, Germany and a subsidiary approximately 99.55% owned by VW AG. Under U.S. law, Audi AG acts through its employees, and conduct undertaken by Audi AG, as described herein, reflects conduct undertaken by employees.

3. Volkswagen Group of America, Inc. (“VW GOA”) was a wholly-owned subsidiary of VW AG based in Herndon, Virginia. Under U.S. law, VW GOA acts through its employees, and conduct undertaken by VW GOA, as described herein, reflects conduct undertaken by employees.

4. VW AG, Audi AG, and VW GOA are collectively referred to herein as “VW.”

5. “VW Brand” was an operational unit within VW AG that developed vehicles to be sold under the “Volkswagen” brand name.

6. Company A was an automotive engineering company based in Berlin, Germany, which specialized in software, electronics, and technology support for vehicle manufacturers. VW AG owned fifty percent of Company A’s shares and was Company A’s largest customer.

7. “Supervisor A,” an individual whose identity is known to the United States and VW AG, was the supervisor in charge of Engine Development for all of VW AG from in or about October 2012 to in or about September 2015. From July 2013 to September 2015, Supervisor A also served as the supervisor in charge of Development for VW Brand, where he supervised a group of approximately 10,000 VW AG employees. From in or about October 2011, when he joined VW, until in or about July 2013, Supervisor A served as the supervisor in charge of the VW Brand Engine Development department.

8. “Supervisor B,” an individual whose identity is known to the United States and VW AG, was a supervisor in charge of the VW Brand Engine Development department from in or about May 2005 to in or about April 2007.

9. “Supervisor C,” an individual whose identity is known to the United States and VW AG, was a supervisor in charge of the VW Brand Engine Development department from in or about May 2007 to in or about March 2011.

10. "Supervisor D," an individual whose identity is known to the United States and VW AG, was a supervisor in charge of the VW Brand Engine Development department from in or about October 2013 to the present.

11. "Supervisor E," an individual whose identity is known to the United States and VW AG, was a supervisor with responsibility for VW AG's Quality Management and Product Safety department who reported to the supervisor in charge of Quality Management from in or about 2007 to in or about October 2014.

12. "Supervisor F," an individual whose identity is known to the United States and VW AG, was a supervisor within the VW Brand Engine Development department from in or about 2003 until in or about December 2012.

13. "Attorney A," an individual whose identity is known to the United States and VW AG, was a German-qualified in-house attorney for VW AG who was the in-house attorney principally responsible for providing legal advice in connection with VW AG's response to U.S. emissions issues from in or about May 2015 to in or about September 2015.

U.S. NO_x Emissions Standards

14. The purpose of the Clean Air Act and its implementing regulations was to protect human health and the environment by, among other things, reducing emissions of pollutants from new motor vehicles, including nitrogen oxides (“NO_x”).

15. The Clean Air Act required the U.S. Environmental Protection Agency (“EPA”) to promulgate emissions standards for new motor vehicles. The EPA established standards and test procedures for light-duty motor vehicles sold in the United States, including emission standards for NO_x.

16. The Clean Air Act prohibited manufacturers of new motor vehicles from selling, offering for sale, introducing or delivering for introduction into U.S. commerce, or importing (or causing the foregoing with respect to) any new motor vehicle unless the vehicle complied with U.S. emissions standards, including NO_x emissions standards, and was issued an EPA certificate of conformity.

17. To obtain a certificate of conformity, a manufacturer was required to submit an application to the EPA for each model year and for each test group of vehicles that it intended to sell in the United States. The application was required to be in writing, to be signed by an authorized representative of the manufacturer, and to include, among other things, the results of testing done pursuant to the published Federal Test Procedures that measure NO_x emissions, and a description

of the engine, emissions control system, and fuel system components, including a detailed description of each Auxiliary Emission Control Device (“AECD”) to be installed on the vehicle.

18. An AECD was defined under U.S. law as “any element of design which senses temperature, vehicle speed, engine RPM, transmission gear, manifold vacuum, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.” The manufacturer was also required to include a justification for each AECD. If the EPA, in reviewing the application for a certificate of conformity, determined that the AECD “reduced the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use,” and that (1) it was not substantially included in the Federal Test Procedure, (2) the need for the AECD was not justified for protection of the vehicle against damage or accident, or (3) it went beyond the requirements of engine starting, the AECD was considered a “defeat device.” Whenever the term “defeat device” is used in this Statement of Facts, it refers to a defeat device as defined by U.S. law.

19. The EPA would not certify motor vehicles equipped with defeat devices. Manufacturers could not sell motor vehicles in the United States without a certificate of conformity from the EPA.

20. The California Air Resources Board (“CARB”) (together with the EPA, “U.S. regulators”) issued its own certificates, called executive orders, for the sale of motor vehicles in the State of California. To obtain such a certificate, the manufacturer was required to satisfy the standards set forth by the State of California, which were equal to or more stringent than those of the EPA.

21. As part of the application for a certification process, manufacturers often worked in parallel with the EPA and CARB. To obtain a certificate of conformity from the EPA, manufacturers were required to demonstrate that the light-duty vehicles were equipped with an on-board diagnostic (“OBD”) system capable of monitoring all emissions-related systems or components. Manufacturers could demonstrate compliance with California OBD standards in order to meet federal requirements. CARB reviewed applications from manufacturers, including VW, to determine whether their OBD systems were in compliance with California OBD standards, and CARB’s conclusion would be included in the application the manufacturer submitted to the EPA.

22. In 1998, the United States established new federal emissions standards that would be implemented in separate steps, or Tiers. Tier II emissions standards, including for NO_x emissions, were significantly stricter than Tier I. For light-duty vehicles, the regulations required manufacturers to begin to phase in compliance with the new, stricter Tier II NO_x emissions standards in 2004 and required

manufacturers to fully comply with the stricter standards for model year 2007. These strict U.S. NOx emissions standards were applicable specifically to vehicles in the United States.

VW Diesel Vehicles Sold in the United States

23. In the United States, VW sold, offered for sale, introduced into commerce, delivered for introduction into commerce, imported, or caused the foregoing actions (collectively, “sold in the United States”) the following vehicles containing 2.0 liter diesel engines (“2.0 Liter Subject Vehicles”):

- a. Model Year (“MY”) 2009-2015 VW Jetta;
- b. MY 2009-2014 VW Jetta Sportwagen;
- c. MY 2010-2015 VW Golf;
- d. MY 2015 VW Golf Sportwagen;
- e. MY 2010-2013, 2015 Audi A3;
- f. MY 2013-2015 VW Beetle and VW Beetle Convertible; and
- g. MY 2012-2015 VW Passat.

24. VW sold in the United States the following vehicles containing 3.0 liter diesel engines (“3.0 Liter Subject Vehicles”):

- a. MY 2009-2016 VW Touareg;
- b. MY 2009-2015 Audi Q7;
- c. MY 2014-2016 Audi A6 Quattro;

- d. MY 2014-2016 Audi A7 Quattro;
- e. MY 2014-2016 Audi A8L; and
- f. MY 2014-2016 Audi Q5.

25. VW GOA's Engineering and Environmental Office ("EEO") was located in Auburn Hills, Michigan, in the Eastern District of Michigan. Among other things, EEO prepared and submitted applications (the "Applications") for a certificate of conformity and an executive order (collectively, "Certificates") to the EPA and CARB to obtain authorization to sell each of the 2.0 Liter Subject Vehicles and 3.0 Liter Subject Vehicles in the United States (collectively, the "Subject Vehicles"). VW GOA's Test Center California performed testing related to the Subject Vehicles.

26. VW AG developed the engines for the 2.0 Liter Subject Vehicles. Audi AG developed the engines for the 3.0 Liter Subject Vehicles and the MY 2013-2016 Porsche Cayenne diesel vehicles sold in the United States (the "Porsche Vehicles").

27. The Applications to the EPA were accompanied by the following signed statement by a VW representative:

The Volkswagen Group states that any element of design, system, or emission control device installed on or incorporated in the Volkswagen Group's new motor vehicles or new motor vehicle engines for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of the Volkswagen Group's information and belief,

cause the emission into the ambient air of pollutants in the operation of its motor vehicles or motor vehicle engines which cause or contribute to an unreasonable risk to public health or welfare except as specifically permitted by the standards prescribed under section 202 of the Clean Air Act. The Volkswagen Group further states that any element of design, system, or emission control device installed or incorporated in the Volkswagen Group's new motor vehicles or new motor vehicle engines, for the purpose of complying with standards prescribed under section 202 of the Clean Air Act, will not, to the best of the Volkswagen Group's information and belief, cause or contribute to an unreasonable risk to public safety.

...

All vehicles have been tested in accordance with good engineering practice to ascertain that such test vehicles meet the requirement of this section for the useful life of the vehicle.

28. Based on the representations made by VW employees in the Applications for the Subject Vehicles, EPA and CARB issued Certificates for these vehicles, allowing the Subject Vehicles to be sold in the United States.

29. Upon importing the Subject Vehicles into the United States, VW disclosed to U.S. Customs and Border Protection ("CBP") that the vehicles were covered by valid Certificates by affixing an emissions label to the vehicles' engines. These labels stated that the vehicles conformed to EPA and CARB emissions regulations. VW affixed these labels to each of the Subject Vehicles that it imported into the United States.

30. VW represented to its U.S. customers, U.S. dealers, U.S. regulators and others in the United States that the Subject Vehicles met the new and stricter

U.S. emissions standards identified in paragraph 22 above. Further, VW designed a specific marketing campaign to market these vehicles to U.S. customers as “clean diesel” vehicles.

VW AG’s Criminal Conduct

31. From approximately May 2006 to approximately November 2015, VW AG, through Supervisors A-F and other VW employees, agreed to deceive U.S. regulators and U.S. customers about whether the Subject Vehicles and the Porsche Vehicles complied with U.S. emissions standards. During their involvement with design, marketing and/or sale of the Subject Vehicles and the Porsche Vehicles in the United States, Supervisors A-F and other VW employees: (a) knew that the Subject Vehicles and the Porsche Vehicles did not meet U.S. emissions standards; (b) knew that VW was using software to cheat the U.S. testing process by making it appear as if the Subject Vehicles and the Porsche Vehicles met U.S. emissions standards when, in fact, they did not; and (c) attempted to and did conceal these facts from U.S. regulators and U.S. customers.

The 2.0 Liter Defeat Device in the United States

32. In at least in or about 2006, VW AG employees working under the supervision of Supervisors B, C, and F were designing the new EA 189 2.0 liter diesel engine (later known as the Generation 1 or “Gen 1”) for use in the United States that would be the cornerstone of a new project to sell passenger diesel

vehicles in the United States. Selling diesel vehicles in the U.S. market was an important strategic goal of VW AG. This project became known within VW as the “US’07” project.

33. Supervisors B, C, and F, and others, however, realized that VW could not design a diesel engine that would both meet the stricter U.S. NOx emissions standards that would become effective in 2007 and attract sufficient customer demand in the U.S. market. Instead of bringing to market a diesel vehicle that could legitimately meet the new, more restrictive U.S. NOx emissions standards, VW AG employees acting at the direction of Supervisors B, C, and F and others, including Company A employees, designed, created, and implemented a software function to detect, evade and defeat U.S. emissions standards.

34. While employees acting at their direction designed and implemented the defeat device software, Supervisors B, C, and F, and others knew that U.S. regulators would measure VW’s diesel vehicles’ emissions through standard U.S. tests with specific, published drive cycles. VW AG employees acting at the direction of Supervisors B, C, and F, and others designed the VW defeat device to recognize whether the vehicle was undergoing standard U.S. emissions testing on a dynamometer (or “dyno”) or whether the vehicle was being driven on the road under normal driving conditions. The defeat device accomplished this by recognizing the standard drive cycles used by U.S. regulators. If the vehicle’s

software detected that it was being tested, the vehicle performed in one mode, which satisfied U.S. NOx emissions standards. If the defeat device detected that the vehicle was not being tested, it operated in a different mode, in which the effectiveness of the vehicle's emissions control systems was reduced substantially, causing the vehicle to emit substantially higher NOx, sometimes 35 times higher than U.S. standards.

35. In designing the defeat device, VW engineers borrowed the original concept of the dual-mode, emissions cycle-beating software from Audi. On or about May 17, 2006, a VW engineer, in describing the Audi software, sent an email to employees in the VW Brand Engine Development department that described aspects of the software and cautioned against using it in its current form because it was "pure" cycle-beating, i.e., as a mechanism to detect, evade and defeat U.S. emissions cycles or tests. The VW AG engineer wrote (in German), "within the clearance structure of the pre-fuel injection the acoustic function is nearly always activated within our current US'07-data set. This function is pure [cycle-beating] and can like this absolutely not be used for US'07."

36. Throughout in or around 2006, Supervisor F authorized VW AG engineers to use the defeat device in the development of the US'07 project, despite concerns expressed by certain VW AG employees about the propriety of designing and activating the defeat device software. In or about the fall of 2006, lower level

VW AG engineers, with the support of their supervisors, raised objections to the propriety of the defeat device, and elevated the issue to Supervisor B. During a meeting that occurred in or about November 2006, VW AG employees briefed Supervisor B on the purpose and design of the defeat device. During the meeting, Supervisor B decided that VW should continue with production of the US'07 project with the defeat device, and instructed those in attendance, in sum and substance, not to get caught.

37. Throughout 2007, various technical problems arose with the US'07 project that led to internal discussions and disagreements among members of the VW AG team that was primarily responsible for ensuring vehicles met U.S. emissions standards. Those disagreements over the direction of the project were expressly articulated during a contentious meeting on or about October 5, 2007, over which Supervisor C presided. As a result of the meeting, Supervisor C authorized Supervisor F and his team to proceed with the US'07 project despite knowing that only the use of the defeat device software would enable VW diesel vehicles to pass U.S. emissions tests.

38. Starting with the first model year 2009 of VW's new engine for the 2.0 Liter Subject Vehicles through model year 2016, Supervisors A-D and F, and others, then caused the defeat device software to be installed in the 2.0 Liter Subject Vehicles marketed and sold in the United States.

The 3.0 Liter Defeat Device in the United States

39. Starting in or around 2006, Audi AG engineers designed a 3.0 liter diesel for the U.S. market. The 3.0 liter engine was more powerful than the 2.0 liter engine, and was included in larger and higher-end model vehicles. The 3.0 liter engine was ultimately placed in various Volkswagen, Audi and Porsche diesel vehicles sold in the United States for model years 2009 through 2016. In order to pass U.S. emissions tests, Audi engineers designed and installed software designed to detect, evade and defeat U.S. emissions standards, which constituted a defeat device under U.S. law.

40. Specifically, Audi AG engineers calibrated a defeat device for the 3.0 Liter Subject Vehicles and the Porsche Vehicles that varied injection levels of a solution consisting of urea and water (“AdBlue”) into the exhaust gas system based on whether the vehicle was being tested or not, with less NOx reduction occurring during regular driving conditions. In this way, the vehicle consumed less AdBlue, and avoided a corresponding increase in the vehicle’s AdBlue tank size, which would have decreased the vehicle’s trunk size, and made the vehicle less marketable in the United States. In addition, the vehicle could drive further between service intervals, which was also perceived as important to the vehicle’s marketability in the United States.

Certification of VW Diesel Vehicles in the United States

41. VW employees met with the EPA and CARB to seek the certifications required to sell the Subject Vehicles to U.S. customers. During these meetings, some of which Supervisor F attended personally, VW employees misrepresented, and caused to be misrepresented, to the EPA and CARB staff that the Subject Vehicles complied with U.S. NOx emissions standards, when they knew the vehicles did not. During these meetings, VW employees described, and caused to be described, VW's diesel technology and emissions control systems to the EPA and CARB staff in detail but omitted the fact that the engine could not meet U.S. emissions standards without using the defeat device software.

42. Also as part of the certification process for each new model year, Supervisors A-F and others certified, and/or caused to be certified, to the EPA and CARB that the Subject Vehicles met U.S. emissions standards and complied with standards prescribed by the Clean Air Act. Supervisors A-F, and others, knew that if they had told the truth and disclosed the existence of the defeat device, VW would not have obtained the requisite Certificates for the Subject Vehicles and could not have sold any of them in the United States.

Importation of VW Diesel Vehicles in the United States

43. In order to import the Subject Vehicles into the United States, VW was required to disclose to CBP whether the vehicles were covered by valid certificates for the United States. VW did so by affixing a label to the vehicles' engines. VW employees caused to be stated on the labels that the vehicles complied with applicable EPA and CARB emissions regulations and limitations, knowing that if they had disclosed that the Subject Vehicles did not meet U.S. emissions regulations and limitations, VW would not have been able to import the vehicles into the United States. Certain VW employees knew that the labels for the Porsche Vehicles stated that those vehicles complied with EPA and CARB emissions regulations and limitations, when in fact, the VW employees knew they did not.

Marketing of "Clean Diesel" Vehicles in the United States

44. Supervisors A and C and others marketed, and caused to be marketed, the Subject Vehicles to the U.S. public as "clean diesel" and environmentally-friendly, when they knew the Subject Vehicles were intentionally designed to detect, evade and defeat U.S. emissions standards.

45. For example, on or about November 18, 2007, Supervisor C sent an email to Supervisor F and others attaching three photos of himself with

California's then-Governor, which were taken during an event at which Supervisor C promoted the 2.0 Liter Subject Vehicles in the United States as "green diesel."

The Improvement of the 2.0 Liter Defeat Device in the United States

46. Following the launch of the Gen 1 2.0 Liter Subject Vehicles in the United States, Supervisors C and F, and others, worked on a second generation of the vehicle (the "Gen 2"), which also contained software designed to detect, evade and defeat U.S. emissions tests. The Gen 2 2.0 Liter Subject Vehicles were launched in the United States in or around 2011.

47. In or around 2012, hardware failures developed in certain of the 2.0 Liter Subject Vehicles that were being used by customers on the road in the United States. VW AG engineers hypothesized that vehicles equipped with the defeat device stayed in "dyno" mode (i.e., testing mode) even when driven on the road outside of test conditions. Since the 2.0 Liter Subject Vehicles were not designed to be driven for longer periods of time in "dyno" mode, VW AG engineers suspected that the increased stress on the exhaust system from being driven too long in "dyno" mode could be the root cause of the hardware failures.

48. In or around July 2012, engineers from the VW Brand Engine Development department met, in separate meetings, with Supervisors A and E to explain that they suspected that the root cause of the hardware failures in the 2.0 Liter Subject Vehicles was the increased stress on the exhaust system from being

driven too long in “dyno” mode as a result of the use of software designed to detect, evade and defeat U.S. emissions tests. To illustrate the software’s function, the engineers used a document. Although they understood the purpose and significance of the software, Supervisors A and E each encouraged the further concealment of the software. Specifically, Supervisors A and E each instructed the engineers who presented the issue to them to destroy the document they had used to illustrate the operation of the defeat device software.

49. VW AG engineers, having informed the supervisor in charge of the VW AG Engine Development department and within the VW AG Quality Management and Product Safety department of the existence and purpose of the defeat device in the 2.0 Liter Subject Vehicles, then sought ways to improve its operation in existing 2.0 Liter Subject Vehicles to avoid the hardware failures. To solve the hardware failures, VW AG engineers decided to start the 2.0 Liter Subject Vehicles in the “street mode” and, when the defeat device recognized that the vehicle was being tested for compliance with U.S. emissions standards, switch to the “dyno mode.” To increase the likelihood that the vehicle in fact realized that it was being tested on the dynamometer for compliance with U.S. emissions standards, the VW AG engineers activated a “steering wheel angle recognition” feature. The steering wheel angle recognition interacted with the software by

enabling the vehicle to detect whether it was being tested on a dynamometer (where the steering wheel is not turned), or being driven on the road.

50. Certain VW AG employees again expressed concern, specifically about the expansion of the defeat device through the steering wheel angle detection, and sought approval for the function from more senior supervisors within the VW AG Engine Development department. In particular, VW AG engineers asked Supervisor A for a decision on whether or not to use the proposed function in the 2.0 Liter Subject Vehicles. In or about April 2013, Supervisor A authorized activation of the software underlying the steering wheel angle recognition function. VW employees then installed the new software function in new 2.0 Liter Subject Vehicles being sold in the United States, and later installed it in existing 2.0 Liter Subject Vehicles through software updates during maintenance.

51. VW employees falsely told, and caused others to tell, U.S. regulators, U.S. customers and others in the United States that the software update in or around 2014 was intended to improve the 2.0 Liter Subject Vehicles when, in fact, VW employees knew that the update also used the steering wheel angle of the vehicle as a basis to more easily detect when the vehicle was undergoing emissions tests, thereby improving the defeat device's precision in order to reduce the stress on the emissions control systems.

The Concealment of the Defeat Devices in the United States – 2.0 Liter

52. In or around March 2014, certain VW employees learned of the results of a study undertaken by West Virginia University's Center for Alternative Fuels, Engines and Emissions and commissioned by the International Council on Clean Transportation (the "ICCT study"). The ICCT study identified substantial discrepancies in the NOx emissions from certain 2.0 Liter Subject Vehicles when tested on the road compared to when these vehicles were undergoing EPA and CARB standard drive cycle tests on a dynamometer. The results of the study showed that two of the three vehicles tested on the road, both 2.0 Liter Subject Vehicles, emitted NOx at values of up to approximately 40 times the permissible limit applicable during testing in the United States.

53. Following the ICCT study, CARB, in coordination with the EPA, attempted to work with VW to determine the cause for the higher NOx emissions in the 2.0 Liter Subject Vehicles when being driven on the road as opposed to on the dynamometer undergoing standard emissions test cycles. To do this, CARB, in coordination with the EPA, repeatedly asked VW questions that became increasingly more specific and detailed, as well as conducted additional testing themselves.

54. In response to learning about the results of the ICCT study, engineers in the VW Brand Engine Development department formed an ad hoc task force to

formulate responses to questions that arose from the U.S. regulators. VW AG supervisors, including Supervisors A, D, and E, and others, determined not to disclose to U.S. regulators that the tested vehicle models operated with a defeat device. Instead, Supervisors A, D, and E, and others decided to pursue a strategy of concealing the defeat device in responding to questions from U.S. regulators, while appearing to cooperate.

55. Throughout 2014 and the first half of 2015, Supervisors A, D, and E, and others, continued to offer, and/or cause to be offered, software and hardware “fixes” and explanations to U.S. regulators for the 2.0 Liter Subject Vehicles’ higher NOx measurements on the road without revealing the underlying reason – the existence of software designed to detect, evade and defeat U.S. emissions tests.

56. On or about April 28, 2014, members of the VW task force presented the findings of the ICCT study to Supervisor E, whose supervisory responsibility included addressing safety and quality problems in vehicles in production. Included in the presentation was an explanation of the potential financial consequences VW could face if the defeat device was discovered by U.S. regulators, including but not limited to applicable fines per vehicle, which were substantial.

57. On or about May 21, 2014, a VW AG employee sent an email to his supervisor, Supervisor D, and others, describing an “early round meeting” with

Supervisor A, at which emissions issues in North America for the Gen 2 2.0 Liter Subject Vehicles were discussed, and questions were raised about the risk of what could happen and the available options for VW. Supervisor D responded by email that he was in “direct touch” with the supervisor in charge of Quality Management at VW AG and instructed the VW AG employee to “please treat confidentially” the issue.

58. On or about October 1, 2014, VW AG employees presented to CARB regarding the ICCT study results and discrepancies identified in NOx emissions between dynamometer testing and road driving. In response to questions, the VW AG employees did not reveal that the existence of the defeat device was the explanation for the discrepancies in NOx emissions, and, in fact, gave CARB various false reasons for the discrepancies in NOx emissions including driving patterns and technical issues.

59. When U.S. regulators threatened not to certify VW model year 2016 vehicles for sale in the United States, VW AG supervisors requested a briefing on the situation in the United States. On or about July 27, 2015, VW AG employees presented to VW AG supervisors. Supervisors A and D were present, among others.

60. On or about August 5, 2015, in a meeting in Traverse City, Michigan, two VW employees met with a CARB official to discuss again the discrepancies in

emissions of the 2.0 Liter Subject Vehicles. The VW employees did not reveal the existence of the defeat device.

61. On or about August 18, 2015, Supervisors A and D, and others, approved a script to be followed by VW AG employees during an upcoming meeting with CARB in California on or about August 19, 2015. The script provided for continued concealment of the defeat device from CARB in the 2.0 Liter Subject Vehicles, with the goal of obtaining approval to sell the Gen 3 model year 2016 2.0 Liter Subject Vehicles in the United States.

62. On or about August 19, 2015, in a meeting with CARB in El Monte, California, a VW employee explained, for the first time to U.S. regulators and in direct contravention of instructions from supervisors at VW AG, that certain of the 2.0 Liter Subject Vehicles used different emissions treatment depending on whether the vehicles were on the dynamometer or the road, thereby signaling that VW had evaded U.S. emissions tests.

63. On or about September 3, 2015, in a meeting in El Monte, California with CARB and EPA, Supervisor D, while creating the false impression that he had been unaware of the defeat device previously, admitted that VW had installed a defeat device in the 2.0 Liter Subject Vehicles.

64. On or about September 18, 2015, the EPA issued a public Notice of Violation to VW stating that the EPA had determined that VW had violated the

Clean Air Act by manufacturing and installing defeat devices in the 2.0 Liter Subject Vehicles.

The Concealment of the Defeat Devices in the United States – 3.0 Liter

65. On or about January 27, 2015, CARB informed VW AG that CARB would not approve certification of the Model Year 2016 3.0 Liter Subject Vehicles until Audi AG confirmed that the 3.0 Liter Subject Vehicles did not possess the same emissions issues as had been identified by the ICCT study and as were being addressed by VW with the 2.0 Liter Subject Vehicles.

66. On or about March 24, 2015, in response to CARB's questions, Audi AG employees made a presentation to CARB, during which Audi AG employees did not disclose that the Audi 2.0 and 3.0 Liter Subject Vehicles and the Porsche Vehicles in fact contained a defeat device, which caused emissions discrepancies in those vehicles. The Audi AG employees informed CARB that the 3.0 Liter Subject Vehicles did not possess the same emissions issues as the 2.0 Liter Subject Vehicles when, in fact, the 3.0 Liter Subject Vehicles possessed at least one defeat device that interfered with the emissions systems to reduce NOx emissions on the dyno but not on the road. On or about March 25, 2015, CARB, based on the misstatements and omissions made by the Audi AG representatives, issued an executive order approving the sale of Model Year 2016 3.0 Liter Subject Vehicles.

67. On or about November 2, 2015, EPA issued a Notice of Violation to VW AG, Audi AG and Porsche AG, citing violations of the Clean Air Act related to EPA's discovery that the 3.0 Liter Subject Vehicles and the Porsche Vehicles contained a defeat device that resulted in excess NOx emissions when the vehicles were driven on the road.

68. On or about November 2, 2015, VW AG issued a statement that "no software has been installed in the 3-liter V6 diesel power units to alter emissions characteristics in a forbidden manner."

69. On or about November 19, 2015, Audi AG representatives met with EPA and admitted that the 3.0 Liter Subject Vehicles contained at least three undisclosed AECDs. Upon questioning from EPA, Audi AG representatives conceded that one of these three undisclosed AECDs met the criteria of a defeat device under U.S. law.

70. On or about May 16, 2016, Audi AG representatives met with CARB and admitted that there were additional elements within two of its undisclosed AECDs, which impacted the dosing strategy in the 3.0 Liter Subject Vehicles and the Porsche Vehicles.

71. On or about July 19, 2016, in a presentation to CARB, Audi AG representatives conceded that elements of two of its undisclosed AECDs met the definition of a defeat device.

72. Supervisors A-F and others caused defeat device software to be installed on all of the approximately 585,000 Subject Vehicles and the Porsche Vehicles sold in the United States from 2009 through 2015.

Obstruction of Justice

73. As VW employees prepared to admit to U.S. regulators that VW used a “defeat device” in the 2.0 Liter Subject Vehicles, counsel for VW GOA prepared a litigation hold notice to ensure that VW GOA preserved documents relevant to diesel emissions issues. At the same time, VW GOA was in contact with VW AG to discuss VW AG preserving documents relevant to diesel emissions issues. Attorney A made statements that several employees understood as suggesting the destruction of these materials. In anticipation of this hold taking effect at VW AG, certain VW AG employees destroyed documents and files related to U.S. emissions issues that they believed would be covered by the hold. Certain VW AG employees also requested that their counterparts at Company A destroy sensitive documents relating to U.S. emissions issues. Certain Audi AG employees also destroyed documents related to U.S. emissions issues. The VW AG and Audi AG employees who participated in this deletion activity did so to protect both VW and themselves from the legal consequences of their actions.

74. Between the August 19, 2015 and September 3, 2015 meetings with U.S. regulators, certain VW AG employees discussed issues with Attorney A and others.

75. On or about August 26, 2015, VW GOA's legal team sent the text of a litigation hold notice to Attorney A in VW AG's Wolfsburg office that would require recipients to preserve and retain records in their control. The subject of the e-mail was "Legal Hold Notice – Emissions Certification of MY2009-2016 2.0L TDI Volkswagen and Audi vehicles." The VW GOA legal team stated that VW GOA would be issuing the litigation hold notice to certain VW GOA employees the following day. On or about August 28, 2015, Attorney A received notice that VW GOA was issuing that litigation hold notice that day. Attorney A indicated to his staff on August 31 that the hold would be sent out at VW AG on September 1. Among those at VW AG being asked to retain and preserve documents were Supervisors A and D and a number of other VW AG employees.

76. On or about August 27, 2015, Attorney A met with several VW AG engineers to discuss the technology behind the defeat device. Attorney A indicated that a hold was imminent, and that these engineers should check their documents, which multiple participants understood to mean that they should delete documents prior to the hold being issued.

77. On or about August 31, 2015, a meeting was held to prepare for the September 3 presentation to CARB and EPA where VW's use of the defeat device in the United States was to be formally revealed. During the meeting, within hearing of several participants, Attorney A discussed the forthcoming hold and again told the engineers that the hold was imminent and recommended that they check what documents they had. This comment led multiple individuals, including supervisors in the VW Brand Engine Development department at VW AG, to delete documents related to U.S. emissions issues.

78. On or about September 1, 2015, the hold at VW AG was issued. On or about September 1, 2015, several employees in the VW Brand Engine Development department at VW AG discussed the fact that their counterparts at Company A would also possess documents related to U.S. emissions issues. At least two VW AG employees contacted Company A employees and asked them to delete documents relating to U.S. emissions issues.

79. On or about September 3, 2015, Supervisor A approached Supervisor D's assistant, and requested that Supervisor D's assistant search in Supervisor D's office for a hard drive on which documents were stored containing emails of VW AG supervisors, including Supervisor A. Supervisor D's assistant recovered the hard drive and gave it to Supervisor A. Supervisor A later asked his assistant to throw away the hard drive.

80. On or about September 15, 2015, a supervisor within the VW Brand Engine Development department convened a meeting with approximately 30-40 employees, during which Attorney A informed the VW AG employees present about the current situation regarding disclosure of the defeat device in the United States. During this meeting, a VW AG employee asked Attorney A what the employees should do with new documents that were created, because they could be harmful to VW AG. Attorney A indicated that new data should be kept on USB drives and only the final versions saved on VW AG's system, and then, only if "necessary."

81. Even employees who did not attend these meetings, or meet with Attorney A personally, became aware that there had been a recommendation from a VW AG attorney to delete documents related to U.S. emissions issues. Within VW AG and Audi AG, thousands of documents were deleted by approximately 40 VW AG and Audi AG employees.

82. After it began an internal investigation, VW AG was subsequently able to recover many of the deleted documents.

EXHIBIT 3

INDEPENDENT COMPLIANCE MONITOR

The duties and authority of the Independent Compliance Monitor (the “Monitor”), and the obligations of Volkswagen AG, on behalf of itself and its subsidiaries and affiliates other than Porsche AG and Porsche Cars North America (for purposes of this Exhibit 3, the “Defendant” or “Company”), with respect to the Monitor and the United States Department of Justice, Criminal Division, Fraud Section, the United States Attorney’s Office for the Eastern District of Michigan, and the United States Department of Justice, Environment and Natural Resources Division, Environmental Crimes Section (collectively hereafter, “the Offices”), are as described below. For the avoidance of doubt, the Monitorship described herein does not extend to Porsche AG or Porsche Cars North America.

1. The Company will retain the Monitor for a period of three years (the “Term of the Monitorship”), unless the early termination provision of Paragraph 5(A) of the Plea Agreement (the “Agreement”) is triggered.

Monitor's Mandate

2. The Monitor’s responsibility is to assess, oversee, and monitor the Company’s compliance with the terms of the Agreement, so as to specifically address and reduce the risk of any recurrence of the Company’s misconduct, and to oversee the Company’s obligations under Section V (Injunctive Relief for VW Defendants) of the Third Partial Consent Decree in *In re: Volkswagen “Clean Diesel”*

Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 CRB (JSC) (N.D. Cal.). During the Term of the Monitorship, the Monitor will evaluate, in the manner set forth below, the Company's implementation and enforcement of its compliance and ethics program for the purpose of preventing future criminal fraud and environmental violations by the Company and its affiliates, including, but not limited to, violations related to the conduct giving rise to the Third Superseding Information filed in this matter, and will take such reasonable steps as, in his or her view, may be necessary to fulfill the foregoing mandate (the "Mandate"). This Mandate shall include an assessment of the Board of Management's and senior management's commitment to, and effective implementation of, the Company's corporate compliance and ethics program.

Company's Obligations

3. The Company shall cooperate fully with the Monitor, and the Monitor shall have the authority to take such reasonable steps as, in his or her view, may be necessary to be fully informed about the Company's ethics and compliance program in accordance with the principles set forth herein and applicable law, including applicable environmental, data protection, and labor laws and regulations. To that end, the Company shall: facilitate the Monitor's access to the Company's documents and resources; not limit such access, except as provided in Paragraphs 5-6; and provide guidance on applicable local law (such as relevant data protection and

labor laws). The Company shall provide the Monitor with access to all information, documents, records, facilities, and employees, as reasonably requested by the Monitor, that fall within the scope of the Mandate of the Monitor under the Agreement. The Company shall use its best efforts to provide the Monitor with access to the Company's former employees and its third- party vendors, agents, and consultants.

4. Any disclosure by the Company to the Monitor concerning fraudulent conduct shall not relieve the Company of any otherwise applicable obligation to truthfully disclose such matters to the Offices, pursuant to the Agreement.

Withholding Access

5. The parties agree that no attorney-client relationship shall be formed between the Company and the Monitor. In the event that the Company seeks to withhold from the Monitor access to information, documents, records, facilities, or current or former employees of the Company that may be subject to a claim of attorney-client privilege or to the attorney work-product doctrine, or where the Company reasonably believes production would otherwise be inconsistent with applicable law, the Company shall work cooperatively with the Monitor to resolve the matter to the satisfaction of the Monitor consistent with applicable law.

6. If the matter cannot be resolved, at the request of the Monitor, the Company shall promptly provide written notice to the Monitor and the Offices. Such

notice shall include a general description of the nature of the information, documents, records, facilities or current or former employees that are being withheld, as well as the legal basis for withholding access. The Offices may then consider whether to make a further request for access to such information, documents, records, facilities, or employees.

Monitor's Coordination with the Company and Review Methodology

7. In carrying out the Mandate, to the extent appropriate under the circumstances, the Monitor should coordinate with Company personnel, including in-house counsel, compliance personnel, and internal auditors, on an ongoing basis. The Monitor may rely on the product of the Company's processes, such as the results of studies, reviews, sampling and testing methodologies, audits, and analyses conducted by or on behalf of the Company, as well as the Company's internal resources (e.g., legal, compliance, and internal audit), which can assist the Monitor in carrying out the Mandate through increased efficiency and Company-specific expertise, provided that the Monitor has confidence in the quality of those resources.

8. The Monitor's reviews should use a risk-based approach, and thus, the Monitor is not expected to conduct a comprehensive review of all business lines, all business activities, or all markets. In carrying out the Mandate, the Monitor should consider, for instance, risks presented by: (a) organizational structure; (b) training programs or lack thereof; (c) compensation structure; (d) internal auditing

processes; (e) internal investigation procedures; (f) reporting mechanisms; (g) corporate culture; and (h) employee incentives and disincentives.

9. In undertaking the reviews to carry out the Mandate, the Monitor shall formulate conclusions based on, among other things: (a) inspection of relevant documents, including the Company's current anti-fraud and environmental policies and procedures; (b) on-site observation of selected systems and procedures of the Company at sample sites; (c) meetings with, and interviews of, relevant current and, where appropriate, former directors, officers, employees, business partners, agents, and other persons at mutually convenient times and places; and (d) analyses, studies, and testing of the Company's compliance program.

Monitor's Written Work Plans

10. To carry out the Mandate, during the Term of the Monitorship, the Monitor shall conduct an initial review and prepare an initial report, followed by at least two follow-up reviews and reports as described in Paragraphs 16-19 below. With respect to the initial report, after consultation with the Company and the Offices, the Monitor shall prepare the first written work plan within sixty (60) calendar days of being retained, and the Company and the Offices shall provide comments within thirty (30) calendar days after receipt of the written work plan. With respect to each follow-up report, after consultation with the Company and the Offices, the Monitor shall prepare a written work plan at least thirty (30) calendar

days prior to commencing a review, and the Company and the Offices shall provide comments within twenty (20) calendar days after receipt of the written work plan. Any disputes between the Company and the Monitor with respect to any written work plan shall be decided by the Offices in their sole discretion.

11. All written work plans shall identify with reasonable specificity the activities the Monitor plans to undertake in execution of the Mandate, including a written request for documents. The Monitor's work plan for the initial review shall include such steps as are reasonably necessary to conduct an effective initial review in accordance with the Mandate, including by developing an understanding, to the extent the Monitor deems appropriate, of the facts and circumstances surrounding any violations that may have occurred before the date of the Agreement. In developing such understanding the Monitor is to rely to the extent possible on available information and documents provided by the Company. It is not intended that the Monitor will conduct his or her own inquiry into the historical events that gave rise to the Agreement.

Initial Review

12. The initial review shall commence no later than one hundred twenty (120) calendar days from the date of the engagement of the Monitor (unless otherwise agreed by the Company, the Monitor, and the Offices). The Monitor shall issue a written report within one hundred fifty (150) calendar days of commencing

the initial review, setting forth the Monitor's assessment and, if necessary, making recommendations reasonably designed to improve the effectiveness of the Company's program for ensuring compliance with anti-fraud and environmental laws. The Monitor should consult with the Company concerning his or her findings and recommendations on an ongoing basis and should consider the Company's comments and input to the extent the Monitor deems appropriate. The Monitor may also choose to share a draft of his or her reports with the Company prior to finalizing them. The Monitor's reports need not recite or describe comprehensively the Company's history or compliance policies, procedures and practices, but rather may focus on those areas with respect to which the Monitor wishes to make recommendations, if any, for improvement or which the Monitor otherwise concludes merit particular attention. The Monitor shall provide the report to the Management Board of the Company and contemporaneously transmit copies to the Deputy Chief – Securities and Financial Fraud Unit, Fraud Section, Criminal Division, U.S. Department of Justice, at 1400 New York Avenue N.W., Bond Building, Washington, D.C. 20005; Chief, White Collar Crime Unit, United States Attorney's Office, Eastern District of Michigan, 211 W. Fort Street, Suite 2001, Detroit, Michigan 48226; and Deputy Chief, Environmental Crimes Section, U.S. Department of Justice, 601 D Street N.W., Washington D.C. 20530. After consultation with the Company, the Monitor may extend the time period for issuance

of the initial report for a brief period of time with prior written approval of the Offices.

13. Within one hundred fifty (150) calendar days after receiving the Monitor's initial report, the Company shall adopt and implement all recommendations in the report, unless, within sixty (60) calendar days of receiving the report, the Company notifies in writing the Monitor and the Offices of any recommendations that the Company considers unduly burdensome, inconsistent with applicable law or regulation, impractical, excessively expensive, or otherwise inadvisable. With respect to any such recommendation, the Company need not adopt that recommendation within the one hundred fifty (150) calendar days of receiving the report but shall propose in writing to the Monitor and the Offices an alternative policy, procedure or system designed to achieve the same objective or purpose. As to any recommendation on which the Company and the Monitor do not agree, such parties shall attempt in good faith to reach an agreement within forty-five (45) calendar days after the Company serves the written notice.

14. In the event the Company and the Monitor are unable to agree on an acceptable alternative proposal, the Company shall promptly consult with the Offices. The Offices may consider the Monitor's recommendation and the Company's reasons for not adopting the recommendation in determining whether the Company has fully complied with its obligations under the Agreement. Pending

such determination, the Company shall not be required to implement any contested recommendation(s).

15. With respect to any recommendation that the Monitor determines cannot reasonably be implemented within one hundred fifty (150) calendar days after receiving the report, the Monitor may extend the time period for implementation with prior written approval of the Offices.

Follow-Up Reviews

16. A follow-up review shall commence no later than one hundred and eighty (180) calendar days after the issuance of the initial report (unless otherwise agreed by the Company, the Monitor and the Offices). The Monitor shall issue a written follow-up report within one hundred twenty (120) calendar days of commencing the follow-up review, setting forth the Monitor's assessment and, if necessary, making recommendations in the same fashion as set forth in Paragraph 12 with respect to the initial review. After consultation with the Company, the Monitor may extend the time period for issuance of the follow-up report for a brief period of time with prior written approval of the Offices.

17. Within one hundred twenty (120) calendar days after receiving the Monitor's follow-up report, the Company shall adopt and implement all recommendations in the report, unless, within thirty (30) calendar days after receiving the report, the Company notifies in writing the Monitor and the Offices

concerning any recommendations that the Company considers unduly burdensome, inconsistent with applicable law or regulation, impractical, excessively expensive, or otherwise inadvisable. With respect to any such recommendation, the Company need not adopt that recommendation within the one hundred twenty (120) calendar days of receiving the report but shall propose in writing to the Monitor and the Offices an alternative policy, procedure, or system designed to achieve the same objective or purpose. As to any recommendation on which the Company and the Monitor do not agree, such parties shall attempt in good faith to reach an agreement within thirty (30) calendar days after the Company serves the written notice.

18. In the event the Company and the Monitor are unable to agree on an acceptable alternative proposal, the Company shall promptly consult with the Offices. The Offices may consider the Monitor's recommendation and the Company's reasons for not adopting the recommendation in determining whether the Company has fully complied with its obligations under the Agreement. Pending such determination, the Company shall not be required to implement any contested recommendation(s). With respect to any recommendation that the Monitor determines cannot reasonably be implemented within one hundred twenty (120) calendar days after receiving the report, the Monitor may extend the time period for implementation with prior written approval of the Offices.

19. The Monitor shall undertake a second follow-up review not later than one hundred fifty (150) calendar days after the issuance of the first follow-up report. The Monitor shall issue a second follow-up report within one hundred and twenty (120) days of commencing the review, and recommendations shall follow the same procedures described in Paragraphs 16-18. No later than sixty (60) days before the end of the Term, the Monitor shall submit to the Offices a final written report (“Certification Report”), setting forth an overview of the Company’s remediation efforts to date, including the implementation status of the Monitor’s recommendations, and an assessment of the sustainability of the Company’s remediation efforts. No later than thirty (30) days before the end of the Term, the Monitor shall certify whether the Company’s compliance program, including its policies and procedures, is reasonably designed and implemented to prevent and detect violations of the anti-fraud and environmental laws.

Monitor's Discovery of Potential or Actual Misconduct

20. (a) Except as set forth below in sub-paragraphs (b), (c) and (d), should the Monitor discover during the course of his or her engagement that:

- any defeat device has been designed, installed, or implemented in any vehicle of any kind manufactured by the Company, and is in use after the date of this Agreement, whether such design, installation or implementation has been accomplished by the Company alone or in

concert with any other person or entity contracting with or working with the Company; or

- the Company has made any materially false statement to any governmental entity, department, agency, or component within the United States, in connection with the certification, sale, offer for sale, importation or introduction of any vehicle or vehicle type

(collectively, “Potential Misconduct”), the Monitor shall immediately report the Potential Misconduct to the Company’s General Counsel, Chief Compliance Officer, and/or Audit Committee for further action, unless the Potential Misconduct was already so disclosed. The Monitor also may report Potential Misconduct to the Offices at any time, and shall report Potential Misconduct to the Offices when they request the information.

(b) In some instances, the Monitor should immediately report Potential Misconduct directly to the Offices and not to the Company. The presence of any of the following factors militates in favor of reporting Potential Misconduct directly to the Offices and not to the Company, namely, where the Potential Misconduct: (1) poses a risk to public health or safety or the environment; (2) involves senior management of the Company; (3) involves obstruction of justice; or (4) otherwise poses a substantial risk of harm.

(c) If the Monitor believes that any Potential Misconduct actually occurred or may constitute a criminal or regulatory violation of U.S. law (“Actual Misconduct”), the Monitor shall immediately report the Actual Misconduct to the Offices. When the Monitor discovers Actual Misconduct, the Monitor shall disclose the Actual Misconduct solely to the Offices, and, in such cases, disclosure of the Actual Misconduct to the General Counsel, Chief Compliance Officer, and/or the Audit Committee of the Company should occur as the Offices and the Monitor deem appropriate under the circumstances.

(d) The Monitor shall address in his or her reports the appropriateness of the Company’s response to disclosed Potential Misconduct or Actual Misconduct, whether previously disclosed to the Offices or not. Further, if the Company or any entity or person working directly or indirectly for or on behalf of the Company withholds information necessary for the performance of the Monitor’s responsibilities and the Monitor believes that such withholding is without just cause, the Monitor shall also immediately disclose that fact to the Offices and address the Company’s failure to disclose the necessary information in his or her reports.

(e) Neither the Company nor anyone acting on its behalf shall take any action to retaliate against the Monitor for any such disclosures or for any other reason.

Meetings During Pendency of Monitorship

21. The Monitor shall meet with the Offices within thirty (30) calendar days after providing each report to the Offices to discuss the report, to be followed by a meeting between the Offices, the Monitor, and the Company.

22. At least annually, and more frequently if appropriate, representatives from the Company and the Offices will meet together to discuss the Monitorship and any suggestions, comments, or improvements the Company may wish to discuss with or propose to the Offices, including with respect to the scope or costs of the Monitorship.

Contemplated Confidentiality of Monitor's Reports

23. The reports will likely include proprietary, financial, confidential, and competitive business information. Moreover, public disclosure of the reports could discourage cooperation, or impede pending or potential government investigations and thus undermine the objectives of the Monitorship. For these reasons, among others, the reports and the contents thereof are intended to remain and shall remain non-public, except as otherwise agreed to by the parties in writing, or except to the extent that the Offices determine in their sole discretion that disclosure would be in furtherance of the Offices' discharge of their duties and responsibilities or is otherwise required by law.

Tab 3

(footnote 4)

We have archived this page and will not be updating it.

You can use it for research or reference.



Government
of Canada

Gouvernement
du Canada

[Home](#) → [News](#)

Government of Canada opens an investigation into Volkswagen's alleged use of defeat devices to circumvent emissions regulations

Statement

OTTAWA, Ont. – September 22, 2015 – On September 18, 2015, the U.S. Environmental Protection Agency (EPA) issued a Notice of Violation (NOV) of the *Clean Air Act* to Volkswagen. The Notice alleges that four-cylinder Volkswagen and Audi diesel cars from model years 2009-2015 included a "defeat device" that enable the cars to circumvent EPA emissions standards for certain air pollutants.

Today, Environment Canada issued the following update on the issue:

"The Government of Canada has implemented stringent emissions standards to address air pollutants from new cars sold in Canada to help ensure clean air for Canadians in alignment with the U.S. EPA's standards.

"With aligned emission standards, Environment Canada works closely with the U.S. EPA to ensure our common environmental outcomes are achieved.

"Upon becoming aware of this issue, Environment Canada acted quickly to examine potential implications for Canada and is in communications with its U.S. EPA counterparts and representatives of Volkswagen Group Canada Inc.

"After careful assessment of the known facts, Environment Canada has opened an investigation into this matter. An investigation involves gathering, from a variety of sources, evidence and information relevant to a suspected violation.

"Canadian legislation and regulations prohibit vehicle manufacturers and importers from equipping a vehicle with a defeat device. If officers uncover sufficient evidence of violations, enforcement action will be taken in accordance with the Compliance and Enforcement Policy for the *Canadian Environmental Protection Act, 1999* (CEPA, 1999).

"As the investigation is ongoing, it would be inappropriate to provide further information at this time.

"It is estimated that approximately 100,000 Volkswagen and Audi four-cylinder diesel cars of the model years 2009-2015 were sold in Canada.

"Car owners should know that while the alleged defeat device hinders the effectiveness of a vehicle's air pollutant control systems, it is not a safety issue."

Background on penalties for violating Canadian emission regulations

Canadian vehicle emission regulations are made under the authority of the *Canadian Environmental Protection Act, 1999* (CEPA, 1999). Penalties for offences relating to violations of such regulations may be imposed following a conviction of the offender and under CEPA, 1999, the maximum fine which a large corporation would face for conviction on indictment is \$6 million for each offence. Violators may also have to forfeit any profits earned as a result of an offence. Corporate officials can be prosecuted if they authorize, accept or participate in any violation of CEPA, 1999, or its regulations. A range of sentences may be available upon conviction, including fines and possible imprisonment.

Contacts

Media Relations
Environment Canada
819-934-8008

Search for related information by keyword

Hon. Leona Aglukkaq

Environment and Climate Change Canada

Nature and Environment

Date modified:

2015-09-22

Tab 4

(footnote 5)



This copy is for your personal non-commercial use only. To order presentation-ready copies of Toronto Star content for distribution to colleagues, clients or customers, or inquire about permissions/licensing, please go to: www.TorontoStarReprints.com

Volkswagen Canada resumes selling diesel cars at centre of emissions-testing scandal

Volkswagen dealers have resumed selling 2015 diesel models despite an ongoing investigation by the federal government. The company says the models have been retrofitted with a software upgrade and will receive a hardware fix next year to address the emissions problem.



"Canada's vehicle emission standards are aligned with those of the United States," said a Volkswagen Canada spokesperson. "All vehicles are being modified in accordance with the approved emissions modification prior to sale." (RICK MADONIK / TORONTO STAR FILE PHOTO)

By **DAVID BRUSER** News Reporter
JESSE MCLEAN Investigative News reporter
Wed., May 17, 2017

Volkswagen Canada has recently resumed selling some of its scandal-plagued diesel cars at dealerships across the country, despite still being under investigation for allegedly using software on those same models to cheat emissions tests.

Federal government officials are “looking into the matter to determine the most appropriate course of action,” said Marie-Pascale Des Rosiers, a spokesperson for Environment and Climate Change Minister Catherine McKenna.

In the United States, Volkswagen got the green light to resume selling 2015 2.0-litre diesel engine models that are undergoing emissions modifications in two phases. The U.S. regulators had already secured a \$2.8-billion (U.S.) criminal penalty when [the carmaker pleaded guilty](#) as a result of a “long-running scheme” that deceived customers and circumvented standards with emissions-cheating software.

In Canada, the [government’s investigation](#) into certain Volkswagen vehicles with model years from 2009 to 2015 is still in progress.

“It would not be appropriate to comment on how (the sale of cars by Canadian dealers) may or may not impact the investigation,” Des Rosiers said.

The so-called defeat device in these vehicles meant cars met standards during emissions testing, but pumped out up to 40 times the permitted levels of harmful nitrogen oxides while on the open road, the U.S. Environmental Protection Agency (EPA) said.

Volkswagen has said the 2015 models for sale in the U.S. and Canada have been retrofitted with a software upgrade, and will receive a hardware fix when parts are available next year.

“Canada’s vehicle emission standards are aligned with those of the United States,” said Volkswagen Canada spokesperson Thomas Tetzlaff. “All vehicles are being modified in accordance with the approved emissions modification prior to sale.”

Volkswagen is co-operating with Environment Canada’s investigation, he said.

Meanwhile, Volkswagen dealers across the country have in recent weeks been selling 2015 diesel models, including Jettas and Golfs.

“While supplies last!” said the website for an Ottawa dealer that advertised a sale late last week. “These vehicles will not last long.”

As Volkswagen had voluntarily stopped sales of these vehicles in Canada, the company is not breaking any government orders or directions by resuming sales, the spokesperson for the

environment minister said.

The cars had been frozen on dealers' lots since late 2015, when U.S. regulators announced they were investigating the company for the emissions cheating.

Environment Canada began its own investigation around the same time.

"It is inappropriate for Volkswagen to make money off these cars before Canada has completed its investigation," said Elaine MacDonald of EcoJustice, an environmental advocacy group in Toronto.

A company can face a maximum fine of \$6 million (Canadian) per offence if convicted of violating Canadian vehicle emission regulations. The violating company may also have to forfeit any profits it earned as a result of the misconduct.

How is it the cars are back on the market? At Volkswagen and in the federal government, the Star found uncertainty and confusion.

A Volkswagen Canada spokesperson initially told the Star this week that the company was recently given an "exemption" by the federal government — similar to one granted in the U.S. — that allowed the 2015 vehicles back on the market.

This was confusing news to both Transport Canada and Environment Canada, which pointed the finger at each other as the agency responsible for such a possible exemption.

Then the Volkswagen spokesperson followed up to say no permission was asked for or given.

"Environment Canada, they don't issue approval or rejections" in such situations, VW's Tetzlaff said. "We informed them but they don't say yes or no. We informed them so that they're aware of it."

In the United States, regulators allowed Volkswagen to resume selling its 2015 diesel models with updated emissions software. The vehicles will also receive repairs to the hardware at a later date.

This approval to sell the 2015 vehicles came after the company pleaded guilty to three criminal felony counts and agreed to pay a \$2.8-billion (U.S.) penalty for misleading regulators and customers by using the emissions-cheating software.

The U.S. government also secured up to \$14.7 billion in settlements from Volkswagen in connection with the diesel scandal. Nearly \$3 billion of that money will go towards mitigating pollution from the affected vehicles.

In April, courts in Ontario and Quebec approved a \$2.1-billion settlement in a [class action lawsuit](#) that offered cash payments to the roughly 105,000 people who had already bought or leased Volkswagen or Audi vehicles with 2.0-litre diesel engines. (Audi is owned by Volkswagen.) The settlement was not an admission of liability, Volkswagen said at the time in a statement.

Under the agreement, the drivers can choose to sell their vehicle back to Volkswagen, keep the vehicle and get an emissions modification, trade it in, or terminate the lease without penalty.

Volkswagen Canada and Audi Canada agreed to pay an additional \$15-million penalty resulting from an investigation by the federal Competition Bureau, which said the companies misled consumers with false environmental marketing claims.

Volkswagen Canada's Tetzlaff said he did not know how many 2015 models are for sale or have already been sold nationwide, though he said the cars, known for fuel efficiency, are especially popular at rural dealerships.

Read more about: [United States](#)

Copyright owned or licensed by Toronto Star Newspapers Limited. All rights reserved. Reproduction or distribution of this content is expressly prohibited without the prior written consent of Toronto Star Newspapers Limited and/or its licensors. To order copies of Toronto Star articles, please go to: www.TorontoStarReprints.com

Tab 5

(footnote 7)

Courts approve consumer settlement in Canada for Volkswagen and Audi 2.0L TDI vehicles nationwide

AJAX, TORONTO, ON and MONTREAL, QC, April 21, 2017 /CNW/ - Volkswagen Group Canada Inc. and Canadian class counsel announced today that both the Québec and Ontario Courts have granted approval of the nationwide settlement agreement to resolve consumer claims in Canada related to the 2.0L diesel emissions matter for approximately 105,000 affected vehicles. The Ontario Court will also be subsequently providing additional reasons for granting approval.

The approved settlement agreement provides for cash payments to eligible owners and lessees of Volkswagen and Audi 2.0L TDI vehicles. Many of these settlement class members will also have choices that may include selling or trading in their vehicle, or terminating their lease without any early termination penalty, or keeping their vehicle and receiving an emissions modification that has been approved by regulators together with an extended emissions warranty.

Maria Stenstroem, Chief Executive Officer, Volkswagen Group Canada, said, "Approval of the settlement is an important milestone in our journey to making things right in Canada. Volkswagen Group Canada is committed to ensuring that the settlement program is carried out as conveniently as possible for our affected Volkswagen and Audi 2.0L TDI customers. We are devoting significant resources and personnel to ensuring their experience with the settlement program is a positive one."

Charles Wright, a partner at Siskinds LLP and one of the lead counsel for vehicle owners, said, "this settlement responds to the concerns raised by our clients and we are pleased that it will now be implemented."

Harvey Strosberg, a partner at Strosberg Sasso Sutts LLP and one of the lead counsel, stated, "the approvals from the Courts are wonderful news for the Settlement Class Members."

Sylvie De Bellefeuille, Legal Advisor at Option consommateurs, Representative Plaintiff for the Québec Settlement Class Members, said: "this is a great settlement for all Canadian consumers. We are very pleased with this outcome. We thank Belleau Lapointe, our lawyers in this class action, who have done an exceptional job for the benefit of all Canadian Settlement Class Members."

2.0L TDI Settlement Program in Canada

The approved nationwide settlement program includes:

- Cash payments to eligible current and former owners and lessees of approximately 105,000 affected vehicles nationwide.
- Many of these settlement class members are also eligible to choose to sell their vehicle to Volkswagen (the buyback option) or terminate their lease without any early termination penalty, or, if an emissions modification is approved, keep their vehicle and have it modified at no charge and receive an extended emissions warranty.
- A vehicle's value for a buyback will be determined based on the Canadian Black Book® Inc. wholesale value as of September 18, 2015, with adjustments for factory options and mileage at the time of the buyback offer.
- Eligible owners can also choose to trade in their vehicle and apply its fair market value at the time of the trade-in towards the purchase of a new or used Volkswagen or Audi vehicle. In addition, they will receive payment of any amount by which their vehicle's wholesale value as of September 18, 2015 exceeds its fair market value at the time of the trade-in.

Starting on April 28, Canadian settlement class members and U.S. customers with affected 2.0L TDI vehicles that were first sold or leased in Canada may submit claims for benefits under the settlement by way of an online portal at www.VWCanadaSettlement.ca or a paper claim form (available at www.VWCanadaSettlement.ca or by calling the Canadian Settlement Claims Centre at 1-888-670-4773).

As their claims are approved, claimants will, where applicable, be able to schedule appointments with their preferred Volkswagen or Audi dealership in Canada to complete their settlement transactions.

More detailed information about the 2.0L TDI settlement program in Canada and available benefits can be found at www.VWCanadaSettlement.ca or by calling the Canadian Settlement Claims Centre at 1-888-670-4773.

Notes to Editors

The following 2.0L TDI vehicles are included in the approved settlement program in Canada:

VW Jetta 2009-2015	VW Jetta Wagon 2009	VW Golf 2010-2013, 2015	VW Passat 2012-2015
VW Beetle 2013-2015	VW Golf Wagon 2010-2014	VW Golf Sportwagon 2015	Audi A3 2010-2013, 2015

Amounts for legal fees and expenses of class counsel that will be approved by the Courts will be paid by Volkswagen Group and will not reduce the benefits available to settlement class members.

The class settlement is not an admission of liability by Volkswagen Group. By its terms, the settlement agreement is not intended to apply to or affect Volkswagen Group's obligations under the laws or regulations of any jurisdiction outside Canada. Emission regulations and vehicle standards vary from country to country. Regulations governing nitrogen oxide (NOx) emissions limits for vehicles in Canada are stricter than those in other parts of the world and diesel engine variants also differ significantly.

About Volkswagen Group Canada

Founded in 1952, Volkswagen Group Canada Inc. is headquartered in Ajax, Ontario, and is the largest volume European automotive nameplate in Canada. It is a subsidiary of Volkswagen AG, headquartered in Wolfsburg, Germany. Volkswagen Group is one of the world's largest producers of passenger cars and is Europe's largest automaker.

About Option consommateurs

Option consommateurs is a not-for-profit organization whose mission is to promote and defend the rights and interests of consumers. In order to do so, it notably institutes class action suits. Option consommateurs is interested in various issues, namely business practices, financial services, energy, agro food and health.

SOURCE Volkswagen Group Canada Inc.

For further information: Volkswagen Group Canada: Spokesperson: Thomas Tetzlaff, Phone: 905-428-5858, Email: Thomas.Tetzlaff@VW.ca, www.Volkswagen.ca; Representatives of Settlement Class Members: Harvey T. Strosberg QC, Strosberg Sasso Sutts LLP, Phone: 1-800-229-5323 extn 296, Email: volkswagen@strosbergco.com; Charles M. Wright, Siskinds LLP, Phone: 519-868-6134, Email: charles.wright@siskinds.com; Option consommateurs: Spokesperson: Sylvie De Bellefeuille, Phone: 514-777-6133, Email: sdebellefeuille@option-consommateurs.org; Daniel Belleau, Belleau Lapointe LLP, Phone: 514-987-6700, Email: dbelleau@belleaulapointe.com

CUSTOM PACKAGES

Browse our custom packages or build your own to meet your unique communications needs.

Start today.

CNW MEMBERSHIP

Fill out a CNW membership form or contact us at 1 (877) 269-7890

LEARN ABOUT CNW SERVICES

Request more information about CNW products and services or call us at 1 (877) 269-7890

Tab 6

(footnote 14)



JAN 06 2017

VIA CERTIFIED MAIL AND ELECTRONIC MAIL

Volkswagen AG
Berliner Ring 2
38440 Wolfsburg, Germany
Attention: Group General Counsel
Attention: Company Secretary

Audi AG
Auto-Union Straße 1
85045 Ingolstadt, Germany
Attention: Company Secretary

Volkswagen Group of America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: President
Attention: U.S. General Counsel
Attention: Company Secretary

Volkswagen Group of America
Chattanooga Operations, LLC
8001 Volkswagen Dr.
Chattanooga, TN 37416
Attention: Company Secretary

Robert J. Giuffra, Jr.
Sharon L. Nelles
Sullivan & Cromwell LLP
125 Broad Street
New York, New York 10004
giuffrar@sullcrom.com
nelless@sullcrom.com

**Re: Approved Emissions Modification: Test Group FVGAV02.0VAL of 2.0 Liter
Subject Vehicles Covering Model Year 2015 Volkswagen Beetle, Beetle Convertible,
Golf, Golf SportWagen, Jetta, Passat, and Audi A3 Diesel Vehicles**

To Whom It May Concern:

Appendix B of the 2.0 liter (2.0L) Partial Consent Decree¹ entered on October 25, 2016 establishes how Settling Defendants shall submit Proposed Emissions Modifications, and how the United States Environmental Protection Agency (EPA) and the California Air Resources

¹ In Re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 CRB (JSC), United States District Court, Northern District of California.

In Re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 CRB (JSC), United States District Court, Northern District of California.

Board (CARB) will approve or disapprove any such proposal that Settling Defendants choose to submit. Although the 2.0L Partial Consent Decree was entered on October 25, 2016, the EPA and CARB have been working with Settling Defendants for many months prior to this date to evaluate a potential remedy to reduce the NOx pollution from these vehicles. Over these months Settling Defendants have provided, and the agencies have reviewed, a significant amount of files, data, and materials in support of a Proposed Emissions Modification for Test Group FVGAV02.0VAL of the 2.0L Subject Vehicles covering model year 2015 Volkswagen Beetle, Beetle Convertible, Golf, Golf SportWagen, Jetta, and Passat diesel vehicles, and model year 2015 Audi A3 diesel vehicles.

After thoroughly reviewing these materials, including examining and evaluating test data, software descriptions and files, onboard diagnostic system functionality, durability demonstration results, auxiliary emission control device (AECD) descriptions, consumer disclosures, extended warranty plans, and various statements of compliance therein; and after conducting our own extensive testing of eight vehicles equipped with the Proposed Emissions Modification; and based upon the certifications of the Settling Defendants that the materials submitted are true, correct and complete, the EPA and CARB have determined that the Proposed Emissions Modification as described by the entirety of Settling Defendants' submissions satisfies the terms and conditions set forth in Appendix B of the 2.0L Partial Consent Decree. Thus, the EPA and CARB hereby approve Settling Defendants' Proposed Emissions Modification for Test Group FVGAV02.0VAL of the 2.0 Liter Subject Vehicles.²

Settling Defendants remain obligated to fulfill all other requirements set forth in Appendix B including, but not limited to, the Final OBD Demonstration Data, Continued Compliance, Extended Warranty, Defeat Device Prohibition, and any other applicable regulatory requirements. Any failure of terms, conditions and regulatory requirements shall be subject to stipulated penalties as specified in the Consent Decree.

Settling Defendants shall, within ten days of the date of this Conditional Approval, provide all Eligible Owners and Eligible Lessees with notice that the Emissions Modification for Test Group FVGAV02.0VAL of the 2.0 Liter Subject Vehicles is available, pursuant to the terms, and in accordance with the requirements of Appendix A and Appendix B of the 2.0L Partial Consent Decree.

² Covering model year 2015 Volkswagen Beetle, Beetle Convertible, Golf, Golf SportWagen, Jetta, and Passat diesel vehicles, and model year 2015 Audi A3 diesel vehicles.

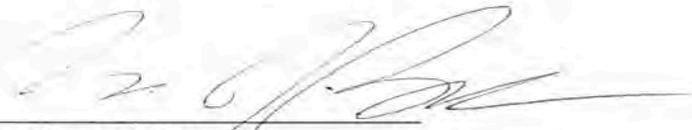
In Re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 CRB (JSC), United States District Court, Northern District of California.

Approved Emissions Modification: Test Group FVGAV02.0VAL of 2.0 Liter Subject Vehicles Covering Model Year 2015 Volkswagen Beetle, Beetle Convertible, Golf, Golf SportWagen, Jetta, Passat, and Audi A3 Diesel Vehicles

FOR THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY



Phillip A. Brooks, Director
Air Enforcement Division
Office of Civil Enforcement
U.S. Environmental Protection Agency



Byron Bunker, Director
Compliance Division
Office of Transportation and Air Quality
U.S. Environmental Protection Agency

*In Re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability
Litigation, MDL No. 2672 CRB (JSC), United States District Court, Northern District of
California.*

**Approved Emissions Modification: Test Group FVGAV02.0VAL of 2.0 Liter Subject
Vehicles Covering Model Year 2015 Volkswagen Beetle, Beetle Convertible, Golf, Golf
SportWagen, Jetta, Passat, and Audi A3 Diesel Vehicles**

FOR THE CALIFORNIA AIR RESOURCES BOARD



Annette Hebert, Chief
Emissions Compliance
Automotive Regulations and Science Division
California Air Resources Board



Todd Sax, Chief
Enforcement Division
California Air Resources Board

In Re: Volkswagen "Clean Diesel" Marketing, Sales Practices, and Products Liability Litigation, MDL No. 2672 CRB (JSC), United States District Court, Northern District of California.

cc:

EES Case Management Unit
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Re: DJ # 90-5-2-1-11386
eesdcopy.enrd@usdoj.gov

Chief Counsel
California Air Resources Board
Legal Office
1001 I Street
Sacramento, California 95814
Alexandra.Kamel@arb.ca.gov
Ellen.Peter@arb.ca.gov

Senior Assistant Attorney General
Consumer Law Section
California Department of Justice
455 Golden Gate Ave., Suite 11000
San Francisco, CA 94102-7004
nicklas.akers@doj.ca.gov
judith.fiorentini@doj.ca.gov
david.zonana@doj.ca.gov

Senior Assistant Attorney General
Environment Section
Office of the Attorney General
P.O. Box 944255
Sacramento, CA 94244-2550

Tab 7

(footnote 16)



Nitrogen Oxides - NO_x

Nitrogen oxides include the gases nitrogen oxide (NO) and nitrogen dioxide (NO₂). NO_x is formed primarily from the liberation of nitrogen contained in fuel and nitrogen contained in combustion air during combustion processes. NO emitted during combustion quickly oxidizes to NO₂ in the atmosphere. NO₂ dissolves in water vapour in the air to form acids, and interacts with other gases and particles in the air to form particles known as nitrates and other products that may be harmful to people and their environment.

Both NO₂ in its untransformed state, and the acid and nitrate transformation products of NO₂, can have adverse effects on human health or the [environment \(/education/default.asp?lang=En&n=3AD65317-1\)](#). NO₂ itself can cause adverse effects on respiratory systems of humans and animals, and damage to vegetation. When dissolved by water vapour, the acids formed can have adverse effects on the respiratory systems of humans and animals. Nitric acid (HNO₃) can cause damage to vegetation, buildings and materials, and contribute to acidification of aquatic and terrestrial ecosystems. When NO₂ is transformed into nitrate particles that are subsequently deposited on aquatic and terrestrial ecosystems, acidification can result. When nitrate is combined with other compounds in the atmosphere, such as ammonia, it becomes an important contributor to the secondary formation of respirable [particulate matter \(PM \(/air/default.asp?lang=En&n=2C68B45C-1\)2.5 \(PM 2.5 10-WS2C68B45C-1 En.htm\) \(PM 2.5 10-WS2C68B45C-1 En.htm\)](#). NO₂ is one of the two primary contributing pollutants, along with [volatile organic compounds \(VOCs\) \(/air/default.asp?lang=En&n=15B9B65A-1\)](#), to the formation of [ground-level ozone \(/air/default.asp?lang=En&n=F50890E8-1\)](#). Both ozone and PM_{2.5} is known to have harmful effects on human health and the environment.

Date modified:

2013-04-24

Tab 8

(footnote 17)

Public health impacts of excess NO_x emissions from Volkswagen diesel passenger vehicles in Germany

This content has been downloaded from IOPscience. Please scroll down to see the full text.

2017 Environ. Res. Lett. 12 034014

(<http://iopscience.iop.org/1748-9326/12/3/034014>)

View [the table of contents for this issue](#), or go to the [journal homepage](#) for more

Download details:

IP Address: 216.13.74.18

This content was downloaded on 13/06/2017 at 16:13

Please note that [terms and conditions apply](#).

You may also be interested in:

[Impact of the volkswagen emissions control defeat device on US public health](#)

Steven R H Barrett, Raymond L Speth, Sebastian D Eastham et al.

[Global, regional and local health impacts of civil aviation emissions](#)

Steve H L Yim, Gideon L Lee, In Hwan Lee et al.

[Estimating source-attributable health impacts of ambient fine particulate matter exposure: global premature mortality from surface transportation emissions in 2005](#)

S E Chambliss, R Silva, J J West et al.

[The impact of weather changes on air quality and health in the United States in 1994–2012](#)

Iny Jhun, Brent A Coull, Joel Schwartz et al.

[Health benefits of reducing NO_x emissions in the presence of epidemiological and atmospheric nonlinearities](#)

A J Pappin, A Hakami, P Blagden et al.

[Carbon reductions and health co-benefits from US residential energy efficiency measures](#)

Jonathan I Levy, May K Woo, Stefani L Penn et al.

[Global health and economic impacts of future ozone pollution](#)

N E Selin, S Wu, K M Nam et al.

[Air quality and climate benefits of long-distance electricity transmission in China](#)

Wei Peng, Jiahai Yuan, Yu Zhao et al.

Environmental Research Letters



LETTER

OPEN ACCESS

RECEIVED

27 June 2016

REVISED

12 December 2016

ACCEPTED FOR PUBLICATION

16 January 2017

PUBLISHED

3 March 2017

Original content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/).

Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.



Public health impacts of excess NO_x emissions from Volkswagen diesel passenger vehicles in Germany

Guillaume P Chossière¹, Robert Malina^{1,2}, Akshay Ashok¹, Irene C Dedoussi¹, Sebastian D Eastham³, Raymond L Speth¹ and Steven R H Barrett^{1,4}

¹ Laboratory for Aviation and the Environment, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge MA 02139, United States of America

² Center for Environmental Sciences, Hasselt University, Martelarenlaan 42, 3500 Hasselt, Belgium

³ Atmospheric Chemistry Modeling Group, Harvard University, 29 Oxford Street, Cambridge MA 02138, United States of America

⁴ Author to whom any correspondence should be addressed.

E mail: sbarrett@mit.edu

Keywords: Volkswagen, air quality, human health, diesel

Supplementary material for this article is available [online](#)

Abstract

In September 2015, the Volkswagen Group (VW) admitted the use of 'defeat devices' designed to lower emissions measured during VW vehicle testing for regulatory purposes. Globally, 11 million cars sold between 2008 and 2015 are affected, including about 2.6 million in Germany. On-road emissions tests have yielded mean on-road NO_x emissions for these cars of 0.85 g km⁻¹, over four times the applicable European limit of 0.18 g km⁻¹. This study estimates the human health impacts and costs associated with excess emissions from VW cars driven in Germany. A distribution of on-road emissions factors is derived from existing measurements and combined with sales data and a vehicle fleet model to estimate total excess NO_x emissions. These emissions are distributed on a 25 by 28 km grid covering Europe, using the German Environmental Protection Agency's (UBA) estimate of the spatial distribution of NO_x emissions from passenger cars in Germany. We use the GEOS-Chem chemistry-transport model to predict the corresponding increase in population exposure to fine particulate matter and ozone in the European Union, Switzerland, and Norway, and a set of concentration-response functions to estimate mortality outcomes in terms of early deaths and of life-years lost. Integrated over the sales period (2008–2015), we estimate median mortality impacts from VW excess emissions in Germany to be 1 200 premature deaths in Europe, corresponding to 13 000 life-years lost and 1.9 billion EUR in costs associated with life-years lost. Approximately 60% of mortality costs occur outside Germany. For the current fleet, we estimate that if on-road emissions for all affected VW vehicles in Germany are reduced to the applicable European emission standard by the end of 2017, this would avert 29 000 life-years lost and 4.1 billion 2015 EUR in health costs (median estimates) relative to a counterfactual case with no recall.

1. Introduction

Public health is significantly and globally affected by outdoor air pollution (WHO 2006), with the European Environment Agency (EEA) estimating that outdoor air pollution is responsible for more than 400 000 premature deaths annually in Europe (EEA 2015b). These impacts are driven primarily by population exposure to fine particulate matter with an aerodynamic diameter of 2.5 μm or less (PM_{2.5})

and, to a lesser extent, ozone, both of which have been associated with an increased risk of premature mortality by epidemiological studies (see the review study by Hoek *et al* 2013 and the multi-city analysis in WHO 2013b). Road transportation emissions account for approximately 50% of the total health impacts from ambient air pollution in Europe (OECD 2014).

Vehicle emissions standards initially introduced in 1991 (the so called Euro standards) aimed to reduce the air quality impacts of road transportation

(European Commission 1991). However, observed reductions in ambient pollution have not been as significant as expected, and the EEA noted that ‘emissions in real-life driving conditions are often higher, especially for diesel vehicles, than those measured during the approval test’ (EEA 2015b). A partial explanation for this discrepancy came to light in September 2015 when an investigation by Thompson *et al* (2014) quantified excess emissions from Volkswagen group vehicles, ultimately leading to allegations by the US Environmental Protection Agency (EPA) and admission by VW that certain vehicle models had engines equipped with software designed to reduce emissions during approval testing significantly below levels achieved under actual on-road operation (US EPA 2015).

Consequently, in October 2015 the German Federal Motor Transport Authority (KBA) ordered a mandatory recall of all 2.4 million affected passenger vehicles still in service and stated that they must be modified to comply with European regulations (KBA 2015). Following the KBA order, VW announced that the recall would begin in 2016 with completion originally scheduled for the end of the same year (VW 2015). The first vehicles were recalled at the end of January 2016 (VW 2016). For all three engine sizes affected (1.2 liter, 1.6 liter and 2.0 liter), Volkswagen will update the EA 189 engine software to ensure that on-road emissions stay below the permitted limit. In addition, for the 1.6 liter engine, VW will fit a flow rectifier to the intake duct.

In this study, we estimate excess NO_x emissions from affected cars commercialized by the brands of the Volkswagen Group that used the EA 189 1.2, 1.6 and 2.0 liter engines (Audi, Seat, Skoda, Volkswagen) within Germany, calculating health impacts and health costs throughout Europe which have already occurred between 2008 and 2015, in addition to future outcomes under different recall scenarios. We seek to estimate the number of early deaths as well as the total number of life-years lost which are at risk of resulting from excess emissions. Morbidity impacts are not evaluated or estimated.

2. Methods

Excess emissions in this paper are defined as the difference between vehicle on-road NO_x emissions and the limit value set by the applicable European Emissions Standard, Euro 5. Even though European Union regulations only require vehicles to meet this standard during the type approval test conducted in the laboratory using the New European Driving Cycle, the intent of the regulation is to limit on-road emissions and achieve real-world air quality improvements (European Commission 2007). In the absence of an official factor to account for the difference between laboratory and on-road testing, we use the regulatory limit as the point of reference for our calculations of excess emissions.

For effects occurring in the future, we first estimate impacts assuming all affected VW vehicles in Germany are modified to bring on-road emissions down to Euro 5 standards by the end of 2016, with a fleet recall occurring at a fixed rate over the course of 2016. We then calculate effects for the counterfactual case that affected vehicles remain in the fleet until their retirement without on-road emissions being reduced to Euro 5 levels. The difference between the counterfactual and recall cases yields the benefits of the recall in terms of avoided excess emissions, health impacts and health costs. The paper also quantifies the impact for a case where the recall is performed at a slower rate and completed by the end of 2017 with the same start date. It should be noted here that future health impacts under one of the ‘recall’ scenarios correspond to a reduction of on-road emissions to the Euro 5 limit value. While the absolute decrease in NO_x emissions which would result from a recall is difficult to estimate, any recall, if carried out, would reduce the average NO_x emissions rate from the current estimated value of $\sim 0.85 \text{ g km}^{-1}$ to some lower value. We take the regulatory limit (0.18 g km^{-1}) as a reasonable minimum value. It is possible to calculate the benefits of smaller reductions as a linear combination of the ‘no policy’ scenario and the ‘recall’ scenario. As detailed later in this study, the atmospheric response to excess emissions is essentially linear for the range of perturbations considered.

We augment and extend the modelling capabilities used in Barrett *et al* (2015) to estimate the impact of excess VW NO_x emissions in the US. They used an adjoint-sensitivity-based air quality modeling approach to capture the impacts of spatially disaggregate excess NO_x emissions on aggregate $\text{PM}_{2.5}$ and ozone population exposure in the US. Due to nonlinearity associated with differences in population density and distribution, background atmospheric composition and local meteorology, linear scaling of the results calculated by Barrett *et al* for the US will not necessarily yield an accurate or reliable answer for other countries. In this study we therefore use a chemistry-transport model to capture the impacts of spatially disaggregate excess NO_x emissions in Germany on spatially disaggregate $\text{PM}_{2.5}$ and ozone population exposure in Germany and other European countries. The calculated increase in population exposure due to these excess emissions is then converted into policy-relevant metrics of health impacts and costs.

The air quality and health impacts of the VW excess emissions in Germany are computed using spatially-resolved excess NO_x emissions estimates. Unless otherwise specified, NO_x emissions are reported on an NO_2 mass basis, consistent with the standards used in emissions inventories. Excess emissions are estimated from on-road measurements of the affected models, as well as the number of affected cars and the vehicle kilometers traveled. Their

Table 1. Uncertain parameters used in this study when calculating premature mortalities. Uncertainty in monetization is calculated separately.

Parameter	Central value [95% CI]	Distribution type
Emissions index (g NO _x /L)	16 [5.0, 28]	Truncated normal (bounds: 3.7, 29)
VKT growth rate (2008–2020)	0.005 [0.003, 0.007]	Triangular
VKT growth rate (2020–2040)	0.003 [0.001, 0.004]	Triangular
PM _{2.5} response bias	+11% [−15%, +91%]	Uniform
Ozone response bias	0.050% [−18%, +35%]	Uniform
PM _{2.5} CRF (risk per 10 μg m ^{−3})	1.11 [1.05, 1.16]	Triangular
Ozone CRF (risk per 10 ppbv)	1.040 [1.013, 1.067]	Triangular

spatial distribution is inferred from the distribution of overall NO_x emissions from passenger cars in Germany, obtained from the German Environmental Protection Agency (UBA 2016). A regional chemistry-transport model is used to relate emissions to pollutant concentrations. Concentration-response functions are applied to convert the resultant population exposure to PM_{2.5} and ozone into health impacts. Given the significant uncertainties in estimating health impacts of air pollution and the associated costs, we use a probabilistic framework which propagates uncertainty through all aspects of the calculation. Public health outcomes are monetized using both the Value of Statistical Life (VSL) and Value of Life Year (VOLY) approach. In this section we describe the uncertainty estimation approach, the excess emissions calculation, the population exposure estimation, health impacts estimation and the monetary valuation of the impacts.

2.1. Uncertainty quantification

Uncertainty in input variables such as vehicle activity and emissions factors (mass of NO_x emitted per kilometer driven) is propagated through the analysis by performing a Monte Carlo simulation. For each sample, a random draw is taken for each of the parameters listed in table 1, according to the distributions shown. The total excess emissions from German light-duty VW vehicles is calculated for each sample based on the randomly drawn emissions factor and on the vehicle-kilometers traveled (VKT) growth factor. These two variables and their distributions are discussed in section 2.3. Total population exposure to PM_{2.5} and ozone is then calculated by interpolating results from the chemistry-transport model GEOS-Chem, described in section 2.4. This includes compensation for bias in the modeled response gradient for both ozone and PM_{2.5}, each drawn as a random variable.

The health impacts of variations in exposure to PM_{2.5} and ozone are calculated by applying concentration response functions (CRFs), as described in section 2.5. For each CRF, the rate of increase in relative risk per unit of exposure is again drawn as a random variable for each sample. The total mortality resulting from the excess emissions for that sample is calculated by summing the premature mortalities

calculated for PM_{2.5} and ozone, assuming independent effects. We perform one thousand independent draws of each variable to yield one thousand independent estimates of the number of premature mortalities and Years of Life Lost (YLL). The rationale for the choice of sample size is presented in the supplementary material (stacks.iop.org/ERL/12/034014/mmedia). The input variables and their distributions are discussed in the following sections and summarized in table 1. In monetizing health impacts, we perform ten additional draws of a distribution of the economic value of statistical life (VSL) and ten draws of a distribution of the Value of Life Year (VOLY), discussed in section 2.6.

Unless explicitly stated otherwise, we report the median value of the output distribution. Data sources and the uncertainties associated with the different parts of our study are detailed in the following subsections.

2.2. Affected vehicle fleet and geographic distribution

An inventory of affected vehicle models in Germany is constructed from publically available sources (Auto, Motor und Sport 2016, ADAC Online Autodatenbank 2016). It comprises cars marketed by the brands of the Volkswagen Group that used the EA 189 engine in its 1.2, 1.6, and 2.0 liter versions (Audi, Seat, Skoda, Volkswagen). We compute the number of affected cars for each relevant model that entered into service each year using annual new registration data published by the German Federal Motor Transport Authority (KBA). In order to obtain estimates for vehicle-kilometers traveled (VKT) by all affected vehicles in each year, the registration data are used as inputs to the Stochastic Transport Emissions Policy (STEP) light-duty vehicle fleet model, developed by Bastani *et al* (2012). We further calibrate the model using Germany-specific data gathered by the TRACCS project (Papadimitriou *et al* 2013). A logistic function is used to estimate the vehicle retirement rate.

The total activity of the affected vehicles is expressed in vehicles-kilometers traveled (VKT) per year. The growth rate of this quantity over time is treated as a random variable and drawn from two triangular distributions, one applicable to the years prior to 2020 and one to the years between 2020 and 2040. The total activity for each year and each sample is estimated

for each 25 km by 28 km grid cell within Germany using a spatially resolved emissions dataset of NO_x emissions from passenger cars, as reported by the German Federal Environmental Protection Agency (UBA 2016).

2.3. Emissions factors for affected vehicles

The estimation of NO_x emissions factors (mass of NO_x emitted per kilometer driven) for the affected vehicles relies on two sets of on-road measurements. The first set of measurements is from KBA (BMVI 2016) using the Real-world Driving Emissions test cycle, as announced by the European Commission's Technical Committee of Motor Vehicles (European Commission 2015). NO_x emission estimates are available for four vehicle models (VW Beetle 2.0L EA 189 Euro 5, VW Golf Plus 1.6L EA 189 Euro 5, VW Passat 2.0L EA 189 Euro 5 and VW Polo 1.2L EA 189 Euro 5). KBA published one measurement per model, yielding four on-road results.

The second set of measurements is from Thompson *et al* (2014), who tested two vehicles – a 2012 Jetta (Vehicle A) and a 2013 Passat (Vehicle B) – on several drive cycles characteristic of different types of driving (urban, rural, highway). Each cycle was driven one or two times for each vehicle, yielding a total of 17 samples.

We combined the results from both sources into a single distribution, composed of 21 samples. Each measured emissions factor expressed in grams of NO_x per kilometer is normalized by the fuel economy of the tested car (in liters of fuel per 100 kilometers). A truncated normal distribution of these factors is used to perform the draws for the Monte Carlo simulation method. The lower bound of the truncation corresponds to the Euro 5 limit of 0.18 g km⁻¹ for the average fuel economy of the fleet of affected vehicles. We obtain the emissions factor of each affected model by multiplying its fuel economy (in L/100 km) by the drawn value in 100 g L⁻¹, yielding a value in g km⁻¹, from which we compute the excess emissions factor. This approach assumes that the emissions factors scale linearly with fuel economy, and that the cars that were tested on-road constitute a representative sample of the fleet of affected vehicles. The excess emissions factor for each vehicle is multiplied by the corresponding VKT sample for this vehicle for a given year, and the sum over all vehicles yields the total amount of excess NO_x emitted each year.

Although VW have published technical details regarding the modifications to be made to each vehicle as part of the recall, at the time of publication there is no reliable data regarding the effect that these modifications have on the NO_x emissions of the affected vehicles. As such, we assume that a recalled vehicle's emissions are brought down to the Euro 5 standard of 0.18 g NO_x/km driven.

2.4. Air quality modeling

The GEOS-Chem chemistry-transport model, originally developed by Bey *et al* (2001) and since

continuously developed and updated, is used to calculate the PM_{2.5} and ozone concentrations. The model domain encompasses most of Europe, covering 15° W 40° E and 33° N 61° N. The resolution is 0.25° in latitude and 0.3125° in longitude (approximately 25 km × 28 km). This resolution corresponds to 759 grid cells over Germany.

The GEOS-Chem model has been extensively used at comparable resolutions to capture PM_{2.5} and ozone impacts at the ground level. Numerous studies have evaluated predicted PM_{2.5} concentrations against observations in the US (Duncan Fairlie *et al* 2007, Heald *et al* 2012, Henze *et al* 2009, Leibensperger *et al* 2012, Zhang *et al* 2012), and in Asia (Brauer *et al* 2012, 2015, Jiang *et al* 2015, Kharol *et al* 2013, van Donkelaar *et al* 2010, 2015). Barrett *et al* (2015) used the model over the US domain to predict PM_{2.5} and ozone concentrations. Protonotariou *et al* (2012) used the model over the European domain and evaluated the predicted ozone concentrations in Greece.

We use meteorological data from GEOS-FP, provided by the Global Modeling and Assimilation Office (GMAO) at NASA's Goddard Space Flight Center. Boundary conditions for this nested domain are obtained from a global GEOS-Chem run at 4° × 5° resolution, using the same meteorological source. We use the 2013 GEOS-FP data for all simulations. 2013 was a climatologically average year in Europe, with the average temperature 0.08 °C warmer than the 1995–2015 mean, and 0.16 °C below the mean of the period of interest 2008–2015 (NOAA 2016). We use the EMEP anthropogenic emissions inventory for 2012 and note that emissions reductions between 2012 and 2013 associated with other anthropogenic sources are less than 3% (EMEP 2016). Each simulation is run for a 15-month period with the first 3 months used as model spin up, during which the model is run but the output is not included in the analysis, to ensure that initial conditions do not impact the results.

A model simulation using baseline anthropogenic emissions (excluding excess emissions associated with the VW defeat device) is performed to assess the accuracy of the model in calculating PM_{2.5} and ozone concentrations. Two scenario runs are then performed where a total of 72 and 130 kilotonnes (10⁶ kg) excess NO_x emissions are added to the baseline anthropogenic emissions using the spatial distribution described in section 2.3. Excess NO_x emissions are input in the air quality model as NO. This is consistent with the fact that NO accounts for more than 80% of NO_x emissions from diesel vehicles (Carslaw and Beever 2005, Yao *et al* 2005), and that the NO_x steady-state in the atmosphere is expected to be reached quickly with respect to the timescale of this study (3 to 30 minutes for NO concentrations of 10 to 1 ppb, following Seinfeld and Pandis 2006). The uncertainty associated with this hypothesis is further discussed in section 4. Differences in the PM_{2.5} and ozone concentrations between the baseline and scenario simulations are

attributed to the computed excess VW emissions. Given that the highest estimate for excess VW NO_x emissions is less than 0.8% of the background anthropogenic NO_x emissions in Germany, we use a linear approach in estimating the PM_{2.5} and ozone impacts of intermediate amounts of excess emissions. One additional scenario run with 520 kilotonnes of annual excess NO_x emissions was conducted in order to verify the validity of this linear approach. This is further discussed in the supplementary material.

Simulated PM_{2.5} and ozone model output concentrations over Germany are validated against observations from the European Environment Agency Air Quality e-Reporting dataset for Germany (EEA 2015a), as well as the entire European domain. Similar to Caiazzo *et al* (2013), the model normalized mean biases are used to account for the uncertainty in predicting PM_{2.5} and ozone concentrations. They are obtained from the point-to-point comparison between available measurements and the model predictions. The resulting distributions have means of 0.11 and -5.0×10^{-4} (95% CI: -0.15 to 0.91 and -0.18 to 0.35) for PM_{2.5} and ozone, respectively. This implies that the model typically overpredicts concentrations of PM_{2.5} by 11%, and underpredicts ozone by 0.050%. The reciprocals of the biases are used as multiplicative factors to correct the GEOS-Chem model predictions in the uncertainty calculations. Only the results from the comparison with the observations in Germany are used in the uncertainty calculations.

2.5. Health impacts

Population exposure to both annual PM_{2.5} and one-hour daily maximum ozone concentrations attributable to excess NO_x emissions from Volkswagen cars within Germany are calculated using the outputs of the GEOS-Chem air quality model described in section 2.4. The annual average PM_{2.5} concentrations are obtained from the hourly output of GEOS-Chem for the species that constitute PM_{2.5} (the GEOS-Chem tracers NH₄, NIT, SO₄, BPCI, BPCO, OCPI, and OCPO). One-hour daily maximum ozone concentrations during ozone season are obtained from the hourly output for the tracer O₃. Population exposure is calculated by multiplying population counts in each grid cell by the annual-average PM_{2.5} or one-hour daily maximum ozone concentration within that grid cell. The spatial distribution of population in Europe is taken from the LandScan database for 2013 (Bright *et al* 2014), which is aggregated from a 1 km resolution to the model grid cells. Country-specific population counts are obtained from the UN World Population Prospects Division for each year of the study (UN 2015) and are used to scale the population density distribution. We take into account the current (2016) member states of the European Union and, due to their geographic proximity, Switzerland and Norway. We use the term 'Europe' to refer to these states and

note that the United Kingdom is still included in future year analyses irrespective of the date the state leaves the EU.

Epidemiological concentration-response functions (CRFs) are applied to estimate premature mortality resulting from population exposure to each species. Cardiovascular premature mortality from long-term exposure to PM_{2.5} is calculated using a log-linear CRF, with a relative risk distribution taken from Hoek *et al* (2013). They find a central relative risk for cardiovascular disease mortality of 1.11 (95% CI: 1.05–1.16) per 10 $\mu\text{g m}^{-3}$ increase in PM_{2.5} exposure. Premature mortality due to exacerbation of both asthma and chronic obstructive pulmonary disease (COPD) as a result of exposure to ozone is also calculated using a log-linear CRF, this time applying the relative risk distribution from an American Cancer Society study (Jerrett *et al* 2009). This CRF has been widely used by previous studies to assess air quality impacts (Barrett *et al* 2015, Jhun *et al* 2015). Jerrett *et al* find a central relative risk of 1.04 (95% CI: 1.013–1.067) per 10 ppb increase in one-hour daily maximum ozone exposure during local ozone season. Country-specific baseline mortality rates for each disease are taken from the World Health Organization global burden of disease database (WHO 2014) and are assumed to remain constant over time. We estimate premature mortality for adults aged 30 and older given that the epidemiological studies are based on a cohort of participants aged 30 years or greater (Jerrett *et al* 2009, Krewski *et al* 2009). The age fraction for each country and each year is taken from UN population forecasts (UN 2015). Alternative PM_{2.5} CRF shapes and parameters, including the integrated exposure-response (IER) function applied in the 2010 Global Burden of Disease study (Burnett *et al* 2014, Lim *et al* 2012), a log-linear CRF from an American Cancer Society study (Krewski *et al* 2009) and an all-cause log-linear CRF reported in Hoek *et al* (2013), are evaluated to determine the sensitivity of the result to the choice of CRF. We also implemented a log-linear ozone CRF derived from the findings of Turner *et al* (2015) that link changes in exposure to the annual average of the daily maximum 8-hour average ozone concentrations to changes in mortality from respiratory and circulatory diseases. These results are presented in the supplementary material. In all cases, a cessation lag structure is applied where 30% of the mortalities due to exposure in a given year occur in the first year, 50% occur equally in years 2 through 5, and the remaining 20% occur equally over years 6 through 20, based on US EPA (2004) recommendations.

The relative risk factors for each of the CRFs are treated as independent, uncertain variables. We assume a triangular distribution with mode and 95% confidence interval taken from the corresponding epidemiological study.

We also compute the number of life-years lost for each estimated number of premature mortalities. The

number of life-years lost is the product of mortalities in each age group (for adults over 30) with the age group's corresponding standard life expectancy, obtained from UN population forecasts for the appropriate year (UN 2015).

2.6. Monetization of health impacts

Mortality effects are valued using two monetization methods that have been widely used in the literature and by government agencies. A detailed overview is given by OECD (2012). The first method relies on estimates for the monetary value of changes in mortality risk due to PM_{2.5} and ozone exposure, calculated as the Value of a Statistical Life (VSL). The second uses estimates for the Value Of a Life Year lost (VOLY) due to exposure to PM_{2.5} and ozone. VSL and VOLY estimates are not additive but describe two different approaches for placing a monetary value on the health impacts of air pollution.

A distribution of VSL estimates for Europe is only available in year 2010 USD (OECD 2012), therefore this distribution is converted to 2015 EUR by accounting for the USD/EUR purchasing power parity, changes in economic growth and inflation. The supplementary material contains detailed information on the conversion. We estimate a lower-bound VSL for 2015 of 1.82 million EUR and a higher bound of 5.48 million EUR, to which we fit a triangular distribution with an adjusted OECD base value of 3.65 million EUR as mode. For other years, we adjust VSL distributions for forecast changes in GDP per capita compared to 2015. The supplementary material shows the VSL distributions for all years considered in the analysis. Annual health costs from changes in premature mortality are calculated by multiplying the annual incidences of premature mortality due to excess NO_x emissions with a year-specific VSL estimate, assuming the mortality lag structure recommended by the EPA for air-quality impacts (US EPA 2011).

For VOLY, we use a year-2015 mean value of 133 000 EUR per year of life lost, with a standard deviation of 16 000 EUR derived from recommendations by European agencies (EEA 2014, EC4MACS 2012). For other years, we adjust VOLY distributions for forecast changes in GDP per capita compared to 2015 in the same fashion as for the VSL. Annual health costs from life-years lost due to exposure to PM_{2.5} and ozone in each year and each sample are calculated by multiplying the number of life-years lost by a year-specific estimate for the VOLY drawn from a year-specific normal distribution. Monetization with the VOLY method is therefore sensitive to age, with early deaths in younger age groups resulting in greater estimated costs than if they occur in older age groups.

Total health costs from historical excess emissions during the years 2008 to 2015 are expressed in year-2015 EUR using a social rate of time preference of 3 percent (discount rate), as recommended by the EU ExternE methodology (Bickel and Friedrich 2005) and

by the US EPA (US EPA 2014). Total health costs because of additional incidences of premature mortality or life-years lost occurring in future years are expressed in year-2015 EUR with the same social rate of time preference as for historical costs. We follow Bickel and Friedrich (2005) and also calculate results for lower and upper bounds of discount rates as sensitivity analyses (0% and 6%, respectively). These alternative discount scenarios are presented in the supplementary material.

3. Results

We report results for excess emissions, health impacts and health costs for historical excess emissions from the affected fleet as well as for future emissions from this fleet.

3.1. Excess emissions

Based on the drive cycle tests by KBA (BMVI 2016) and Thompson *et al* (2014), we estimate the overall NO_x emissions indices for the affected vehicles to be 16 grams per liter fuel consumed. The associated 95% confidence interval (95% CI) is 5.0 to 28 g L⁻¹. The central estimate is equivalent to 0.85 g km⁻¹ for the given fleet distribution, compared to the Euro 5 standard of 0.18 g km⁻¹. The total excess emissions for the affected fleet over time are shown in figure 1. The emissions factor is multiplied by the fuel economy of each model affected in order to obtain the mass of NO_x emitted per kilometer driven.

The total vehicle-kilometers traveled (VKT) by the affected vehicles between 2008 and 2015 is 354 billion km (95% CI: 349 to 360), corresponding to emissions of 240 kilotonnes of NO_x (95% CI: 28 to 440) above the total emissions that would have occurred if on-road emissions of all affected vehicles were equivalent to the Euro 5 NO_x limit of 0.18 g km⁻¹. In the absence of a recall that brings on-road emissions down to Euro 5 limit values, future emissions from 2016 onward would be 560 kilotonnes of excess NO_x emissions (95% CI: 67 to 1100), as a result of total expected future VKT for the affected vehicles from 2016 onward of 838 billion km (95% CI: 823 to 854). If, instead, on-road emissions from all affected vehicles are reduced to Euro 5 standards by the end of 2016, future excess NO_x emissions would be reduced to 29 kilotonnes (95% CI: 3.4 to 54). If the recall takes longer and is not complete until the end of 2017, future excess NO_x emissions increase to 59 kilotonnes (95% CI: 7.0 to 110).

Figure 2 represents the spatial distribution of the aggregated excess NO_x emissions between 2008 and 2015. It is assumed to follow the same spatial pattern as passenger cars NO_x emissions, as reported and gridded by UBA for the year 2010 (UBA 2016).

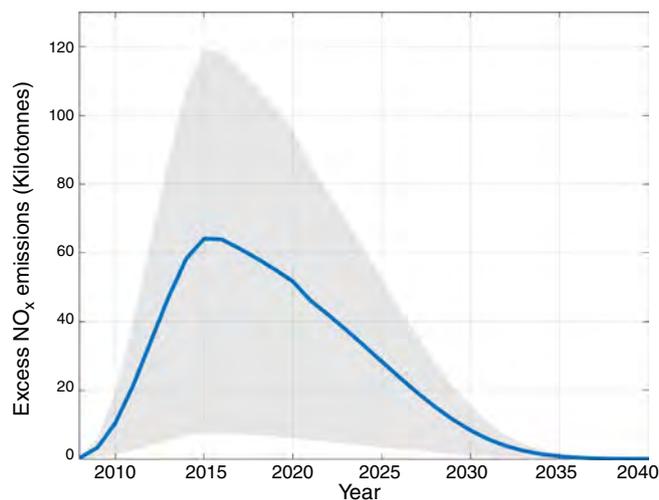


Figure 1. Annual excess NO_x emissions for the affected cars in kilotonnes. The results up to 2015 are estimates of the historical excess NO_x emissions and the results from 2016 onward assume no sales of new vehicles from September 2015 on and no return to recall of affected vehicles. The blue curve represents the median value, and the shaded area the 95% confidence interval.

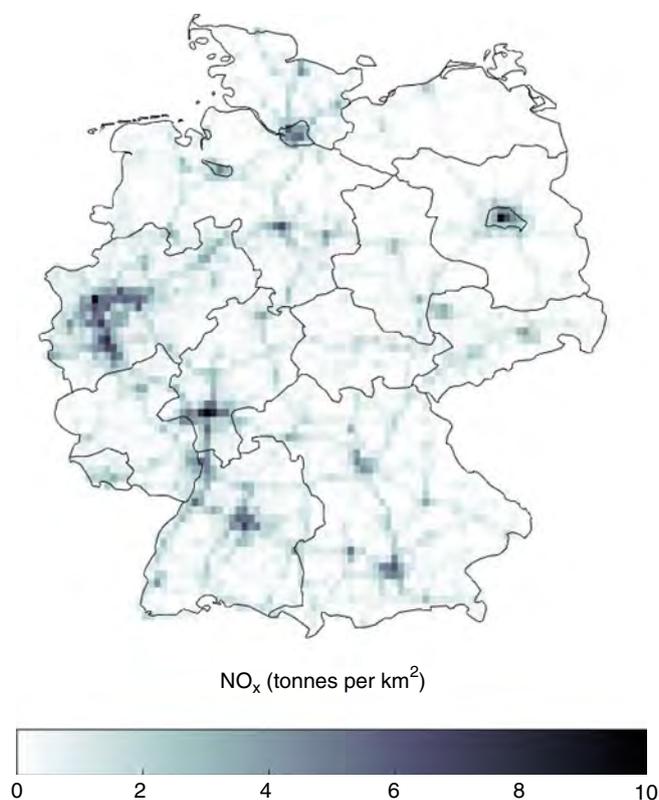
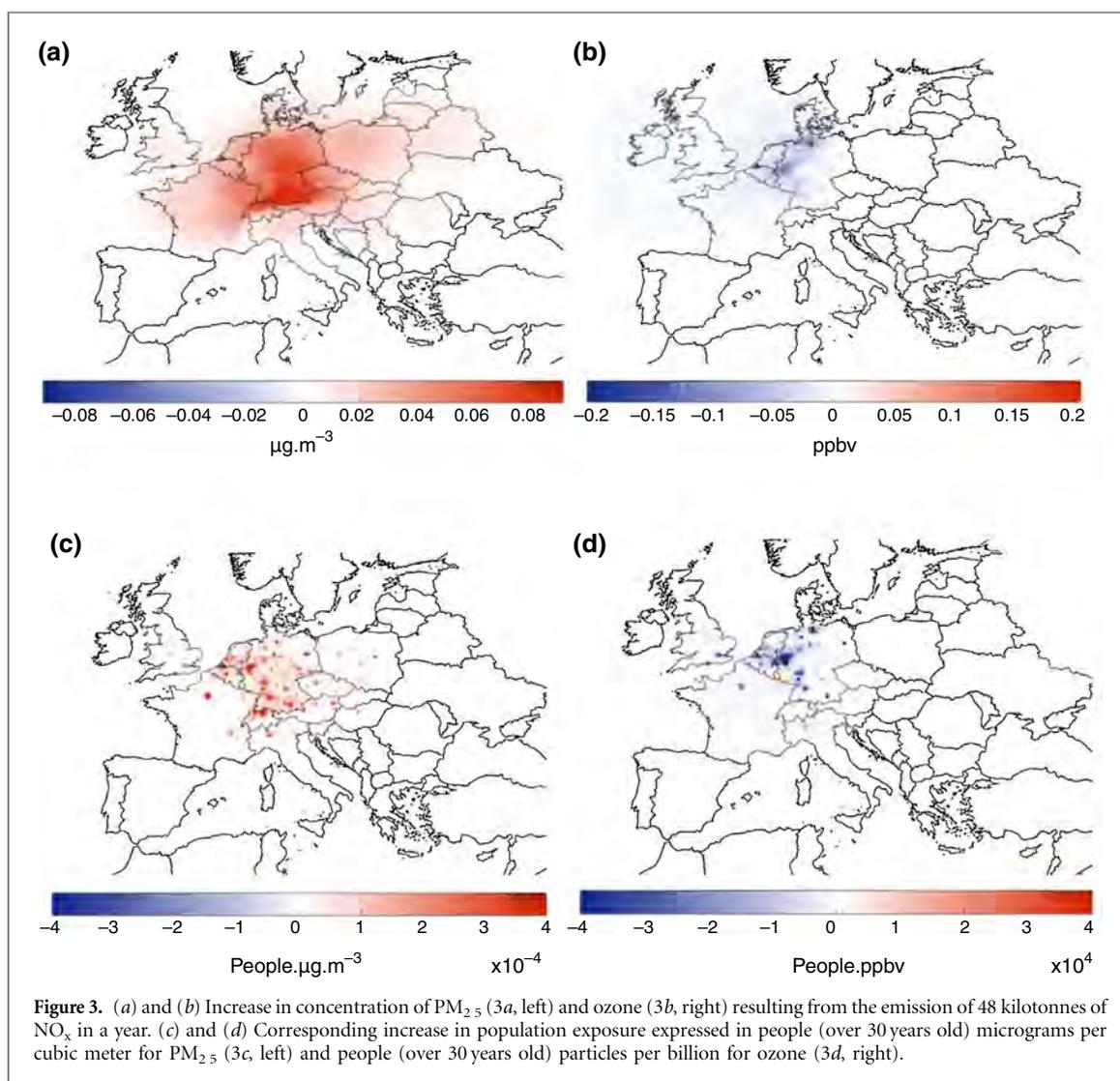


Figure 2. Spatial distribution of the aggregated excess NO_x emissions over 8 years (2008 to 2015) in tonnes per km^2 based on data provided by UBA (UBA 2016). This figure is at the resolution of the original UBA data, $0.1^\circ \times 0.1^\circ$. It shows the median value of the estimated aggregate excess emissions, namely 240 kilotonnes. Emission density peaks at $11.4 \text{ tonnes}/\text{km}^2$. For comparison, the UBA inventory for the year 2010 only reports a total of 230 kilotonnes of NO_x emitted from passenger cars, with a peak emission density of $11 \text{ tonnes}/\text{km}^2$.

3.2. Exposure and health impacts

For each year within the scope of our analysis and each draw of the Monte Carlo simulation, the linearity assumption allows us to compute the increase in the concentrations of $\text{PM}_{2.5}$ and ozone over Europe, as well as the corresponding increase in population exposure. Figures 3(a) and (b) below present an example of the variation of the concen-

tration of $\text{PM}_{2.5}$ and ozone, respectively, corresponding to annual excess emissions of 48 kilotonnes of NO_x , the approximate median value for 2013. Figures 3(c) and (d) show the corresponding population exposure to $\text{PM}_{2.5}$ and ozone respectively, and are obtained by multiplying the concentration of $\text{PM}_{2.5}$ or ozone in each grid cell by the population count in the cell.



The excess NO_x emissions result in reduced ozone concentrations in almost all countries impacted by the excess emissions (with the exception of the region of the Alps between Switzerland and Austria). This is attributed to the high concentration of NO_x relative to volatile organic compound (VOC) concentrations at these locations. Under these conditions, an increase in NO_x emissions inhibits the production of ozone due to the removal of oxidants from the atmosphere via chemical reaction with NO_x (Seinfeld and Pandis 2006). These atmospheric conditions are denoted as VOC-limited chemical regimes and have been established for Europe by previous studies (e.g. Beekman and Vautard 2010, Martin *et al* 2004). In other locations with higher VOC concentrations, it appears that long-range transported NO_x from Germany dominates ozone production.

After applying the concentration response functions to the computed population exposures to $PM_{2.5}$ and ozone, we are able to evaluate the number of premature mortalities that resulted from the estimated excess NO_x emissions.

Table 2 summarizes the health impacts associated with excess emissions in Germany and in Europe. It

features a retrospective analysis for the period 2008 to 2015 and three prospective scenarios, the first one without a recall of the affected cars, the second one with a recall completed by the end of 2016 and the third one with a recall completed by the end of 2017.

The benefits of a recall completed at a constant rate over the course of 2016 are obtained by comparing the scenario assuming that all affected cars are driven during their whole lifecycle without any modification to the scenario where all cars are brought down to the Euro 5 standard by the end of 2016. We also computed the benefit of a recall completed by the end of 2017. The mortality reductions from reduced ozone exposure amount to approximately 10% of the aggregate estimates shown in this table.

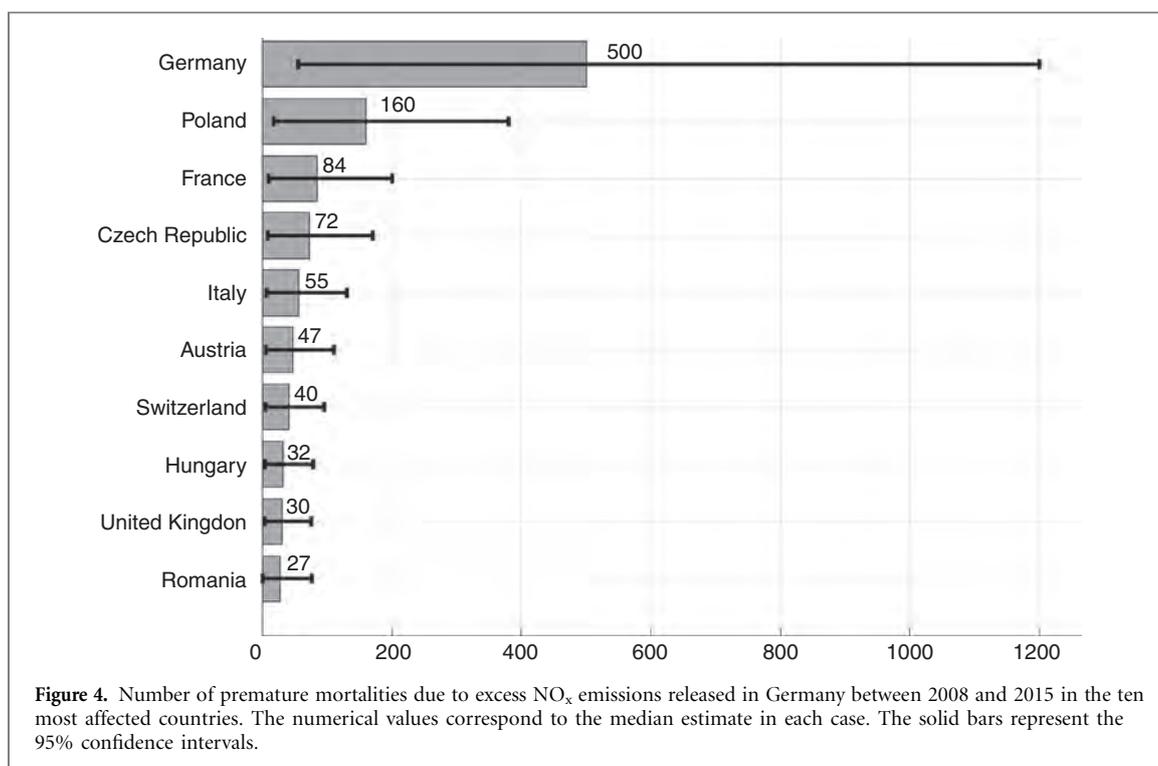
Figure 4 presents detailed estimates for the number of early deaths occurring in the ten countries that were most affected by excess emissions released between 2008 and 2015. The results for other European countries, as well as the distribution of the number of life-years lost per country, are presented in the supplementary material.

Table 2. Estimated historical and forecast impacts of excess NO_x emissions. The median estimates are reported with 95% CI in parentheses. Results after 2016 assume no new sales of affected vehicles. Note that the sums of medians may not equal the median of sums. All values are rounded consistently with the order of magnitude of the standard deviation of the distribution considered.

		Germany	Europe (excluding Germany)	Europe
2008 to 2015	Exposure to $\text{PM}_{2.5}^a$	14 (1.8; 27)	17 (0.23; 35)	31 (0.41; 62)
estimated impacts	Exposure to ozone ^a	11 (13; 2.1)	4.2 (8.1; 0.50)	16 (30; 1.8)
	Early deaths	500 (54; 1200)	660 (71; 1600)	1200 (130; 2800)
	Number of life years lost	5600 (610; 14 000)	7700 (830; 19 000)	13 000 (1400; 32 000)
	Mortality costs (VSL) ^b	1.5 (0.17; 3.7)	2.0 (0.23; 4.8)	3.5 (0.40; 8.5)
	Mortality costs (VOLY) ^b	0.80 (0.088; 1.9)	1.1 (0.12; 2.6)	1.9 (0.21; 4.9)
Forecast impacts from 2016 assuming no recall	Exposure to $\text{PM}_{2.5}^a$	34 (4.4; 67)	44 (0.57; 87)	77 (10; 150)
	Exposure to ozone ^a	27 (52; 3.2)	11 (21; 1.3)	38 (73; 4.5)
	Early deaths	1200 (130; 3000)	1600 (180; 4000)	2900 (310; 7000)
	Number of life years lost	14 000 (1500; 34 000)	19 000 (2100; 46 000)	33 000 (3600; 80 000)
	Mortality costs (VSL) ^b	3.8 (0.44; 9.4)	5.1 (0.58; 12)	8.9 (1.0; 22)
	Mortality costs (VOLY) ^b	2.0 (0.22; 4.8)	2.7 (0.30; 6.6)	4.6 (0.52; 11)
Benefit of a recall completed by the end of 2016	Exposure to $\text{PM}_{2.5}^a$	32 (4.2; 63)	41 (0.54; 82)	74 (9.6; 150)
	Exposure to ozone ^a	26 (49; 3.1)	10 (20; 1.2)	36 (69; 4.3)
	Early deaths	1200 (130; 2800)	1600 (170; 3800)	2700 (300; 6600)
	Number of life years lost	13 000 (1400; 32 000)	18 000 (2000; 44 000)	31 000 (3400; 76 000)
	Mortality costs (VSL) ^b	3.6 (0.42; 8.8)	4.8 (0.55; 12)	8.4 (0.97; 21)
	Mortality costs (VOLY) ^b	1.9 (0.20; 4.5)	2.5 (0.28; 6.2)	4.4 (0.49; 11)
Benefit of a recall completed by the end of 2017	Exposure to $\text{PM}_{2.5}^a$	30 (4.0; 60)	39 (0.51; 78)	69 (9.1; 140)
	Exposure to ozone ^a	25 (47; 2.9)	9.7 (18; 1.2)	34 (65; 4.1)
	Early deaths	1100 (120; 2700)	1500 (160; 3600)	2600 (280; 6200)
	Number of life years lost	12 000 (1400; 30 000)	17 000 (1900; 42 000)	29 000 (3200; 72 000)
	Mortality costs (VSL) ^b	3.4 (0.39; 8.3)	4.5 (0.52; 11)	7.9 (0.91; 19)
	Mortality costs (VOLY) ^b	1.7 (0.19; 4.2)	2.4 (0.27; 5.8)	4.1 (0.46; 10)

^a Exposure is in million of people over 30 years old times $\mu\text{g m}^{-3}$ (or times ppbv for ozone).

^b Mortality costs are expressed in billion 2015 EUR.



3.3. Health costs

Monetized health impacts of the excess NO_x emissions are shown in table 2. Costs calculated using the VOLY method are approximately 50%

lower on average than those calculated using the VSL, with an average estimate of 11 life-years lost per premature mortality. This difference is due to the prevalence of cardiovascular and respiratory disease

in the older population, resulting in the majority of air-quality-related mortalities occurring in higher age brackets with lower life expectancies (in terms of life-years remaining).

Using the VOLY method, we find that past excess emissions have already caused median health costs of 1.9 billion EUR, and that median additional costs of 4.6 billion EUR are expected under a 'no recall' scenario. 95% of these costs are avoided if the recall is completed by the end of 2016; this is reduced to 90% if the recall is not completed until the end of 2017. The costs presented here do not take into account non-mortality impacts such as new cases of chronic bronchitis or increased hospital admissions, but these are expected to be small relative to costs associated with premature mortality (Barrett *et al* 2015).

Regardless of the valuation method used, we find that the majority of monetary damages are incurred outside of Germany, with approximately 60% of all mortality costs exported to other countries within the area of interest. This implies that there might also be significant health costs within Germany due to diesel cars operating outside of Germany which are not accounted for in this study.

4. Discussion and conclusion

We compare our results to an existing study by Oldenkamp *et al* (2016) which estimates Europe-wide health impacts of VW excess emissions using a simplified modeling approach. The authors calculate point estimates for health impacts from spatially unresolved, constant relationships between excess emissions and mortality impacts. Using this approach, the authors link estimated historical excess NO_x emissions of 491.7 kilotonnes to 5000 early deaths, and estimated future emissions in the absence of vehicle modifications of 802.2 kilotonnes to an additional 8200 early deaths. We use a chemistry-transport model to estimate spatially resolved population exposure in each European country as a result of the additional NO_x emissions in Germany. Using this approach yields an estimate for premature mortality per unit of excess emissions that is 50% lower than the value used in Oldenkamp *et al* (2016), i.e. 5.1 vs. 10.2 early deaths per kilotonne of excess emissions.

In the case of the US, Barrett *et al* (2015) report median excess NO_x emissions of 36.7 kilotonnes for 2008 from 2015 from 482 000 affected cars sold, leading to 59 additional early deaths at the median. Similarly, Oldenkamp *et al* (2016) found 33.8 kilotonnes of excess NO_x over the same period, yielding 59 premature mortalities. Holland *et al* (2015), found 45.1 kilotonnes of NO_x and 46.1 mortalities. In our study, we find that while the number of VW cars sold in Germany is 440% higher than the number sold in the US, excess emissions in Germany are 540% higher

than in the US, which is a result of annual kilometer driven per vehicle in Germany being 19 percent higher than in the US. We note however that our estimate is for the average diesel vehicle in Germany, whereas Barrett *et al* (2015) compute the annual mileage of an average American vehicle.

Further comparing the results of these studies to our results, we find that each unit of NO_x emitted in Europe results in 5 times as many premature mortalities (per capita) as in the US. This difference can be explained by the combination of Europe's greater population density and its more NO_x-sensitive background conditions. A study by Koo *et al* (2013) found that in Europe, a combination of high ammonia emissions and relatively low sulfur emissions results in a higher sensitivity of population-weighted PM_{2.5} to NO_x emissions than any other region in the world apart from Eastern China, where population densities are comparable to or greater than Europe. This aspect is discussed further in the supplementary material.

4.1. Limitations

Some sources of uncertainty in this study have not been quantified. The fleet model does not account for possible differences in distance traveled by vehicle model considered. Vehicle kilometers traveled for a given year are assumed to depend only on the year and the age of the vehicle. However, we note that the TRACCS report (Papadimitriou *et al* 2013) distinguished between four categories of diesel passenger cars (small, lower-medium, upper-medium, executive) and found no significant differences among these categories in terms of vehicle kilometers traveled, when controlling for year and vehicle age (less than 5% for the average vehicle). We also assume that the spatial distribution of the excess NO_x emissions and population remains constant over time.

The excess NO_x emissions are input into the air quality model as pure NO. While it is usually considered that NO accounts for more than 80% of NO_x emissions from diesel vehicles (Carslaw and Beevers 2005, Yao *et al* 2005), it appears that the NO₂ to NO_x ratio in primary emissions from diesel vehicles is increasing over time (Alvarez *et al* 2008). However, the NO_x steady-state is reached in about 3 to 30 minutes for ambient NO concentrations of 10 ppb to 1 ppb respectively (Seinfeld and Pandis 2006), which means that the initial NO₂ to NO_x ratio is not expected to significantly influence PM_{2.5} production. Ashok *et al* (2013) have shown in the case of aviation that the maximum sensitivity of population PM_{2.5} exposure to the NO₂ to NO_x ratio in emissions was 2.75%. Since PM_{2.5} is the main driver of the health impacts estimated in this study, we do not expect our results would vary significantly if we modified the NO₂ to NO_x ratio in the primary emissions. As for ozone, the fact that excess emissions are input as pure NO results in increased nighttime titration of ozone. However, we find that this does not occur during daylight hours due

to the high background ozone concentrations. Since the ozone health impact metrics are based on exposure to 1-hour daily maximum and 8-hour daily maximum ozone concentrations which occur during the daylight hours, the calculated ozone impacts are insensitive to the primary NO_2 to NO_x ratio.

We assume the toxicity of different PM species to be equal, consistent with standard practice. However, it is worth noting that the particle composition of $\text{PM}_{2.5}$ is suspected to influence the related health impacts, as pointed out by Hoek *et al* (2013) and WHO (2013b). Since NO_x emissions impact ammonium nitrate most strongly, any differential toxicity of ammonium nitrate relative to the basket of urban PM for which CRFs are derived is not captured. The standard GEOS-Chem chemical mechanism does not include a detailed secondary organic aerosol model, and these compounds are therefore not included in our health impact assessment.

Although some epidemiological studies have been published which find a link between increased exposure to NO_2 and premature mortality independent of exposure to other pollutants, there remains substantial disagreement with regard to the specific health outcomes affected and their magnitude. If we include the health impacts of changes in exposure to NO_2 due to VW excess emissions following the recommendations of the HRAPIE group (WHO 2013a), we find that excess NO_x emissions in Germany released between 2008 and 2015 caused 1 300 (95% CI: 160 to 2800) additional premature mortalities due to exposure to NO_2 , including 1 200 in Germany. The associated health costs are estimated to be 2 billion EUR (median VOLY estimate). Future emissions in the absence of modification of affected cars are expected to cause 3200 additional premature mortalities from exposure to NO_2 in Europe (including 2800 in Germany) and 5.2 billion EUR in associated health costs. Including NO_2 impacts would approximately double the total impacts estimated earlier, with Germany bearing the great majority of this additional burden. It should also be noted that NO_2 is a precursor to ozone and secondary particulate matter (these effects are accounted for in our study).

When using a CRF derived from the findings of Turner *et al* (2015), we observed greater reductions in mortality due to reduced ozone exposure than our central estimate (derived from Jerrett *et al* 2009). Integrated excess emissions over the period 2008 to 2015 are estimated to have averted 28 premature mortalities (95% CI: 1.7 to 85) with the Jerrett *et al* 2009 CRF, while the Turner CRF predicts 78 avoided mortalities (95% CI: 0.28 to 640). The total impacts in Europe of past excess emissions (from exposure to both $\text{PM}_{2.5}$ and O_3) using the Turner CRF as the central estimate would then be 1 000 premature mortalities (95% CI: 93 to 2700). This result is to be compared to the 1,200 mortalities obtained with our central CRF (95 % CI: 130 to 2800). Using the Turner

CRF as the central ozone estimate, we find that future emissions in the absence of any modification to the affected cars are predicted to cause 2600 (95% CI: 230 to 6 700) additional premature mortalities in Europe. This is to be compared to 2900 (95% CI: 310 to 7 000) additional premature mortalities estimated with the Jerrett CRF as our central ozone estimate. In conclusion, changing our central estimate for ozone-related health impacts from Jerrett *et al* (2009) to Turner *et al* (2015) yields 10% lower mortality estimates. The supplementary material provides results obtained with different $\text{PM}_{2.5}$ CRFs.

In addition, our assessment does not include morbidity impacts, which would increase the health costs of the estimated excess emissions but typically account for less than 10% of total health costs associated with air quality impacts (US EPA 2011). It should also be mentioned here that although the epidemiological studies used here and in the supplementary material are widely used in the literature (Barrett *et al* 2015 for instance), they represent only a small portion of the health literature on $\text{PM}_{2.5}$ and ozone and mortality.

We also note that no potential environmental benefits of excess NO_x emissions are included in the analysis. An example could be the reduced use of diesel exhaust fluid in the selective catalytic reduction, which could lead to a lower risk of ammonia leakage, a phenomenon which has been known to contribute to the $\text{PM}_{2.5}$ health impacts of the road transportation sector at approximately equal magnitude as NO_x (Dedoussi and Barrett 2014).

Finally, we note that the assessment of model performance and the corresponding correction by reciprocal biases use the baseline scenario and the officially reported emissions data. These might not fully account for real on-road emissions, and this issue might introduce a second-order effect that is not accounted for. However, given the magnitude of the perturbation (less than 0.8% of total NO_x emissions), this effect is not expected to alter our results significantly.

4.2. Wider implications

In January 2016, and following orders by the KBA (2015), VW started to recall affected vehicles with the aim of reducing their NO_x emissions to an as-yet unspecified level. The modification costs per car have been reported to amount to 60 EUR, excluding the value added tax (FAZ 2016). We assume that the vehicle modification can be completed within 1 hour, including time required to travel to and from the modification site. Applying an average value-of-time of 40 EUR per hour (Korzhenevych *et al* 2014), modification of one vehicle incurs a total cost of approximately 100 EUR. The overall cost of the recall would then be 240 million EUR. This estimate does not include other costs such as increased fuel expenses or social costs of additional carbon emissions if the vehicle modification results in a reduction in fuel

economy. Assuming that the modification reduces on-road emissions to the Euro 5 standard, the total cost of the recall amounts to 5% of the median 4.4 billion EUR health costs (using the VOLY approach) which we estimate will be avoided if the recall is completed by the end of 2016. Our analysis suggests that the recall will remain net beneficial as long as the per-vehicle cost is below 1800 EUR.

Although this analysis was centered on Volkswagen-manufactured cars operated in Germany, NO_x emissions from diesel vehicles in excess of the existing standards constitute a broader and ongoing issue in the European Union. On-road measurements have shown that vehicles from several other manufacturers emit more NO_x than the applicable limits (Carslaw *et al* 2011, Franco *et al* 2014, BMVI 2016), despite the absence of any identified measures intended to circumvent emissions tests. These discrepancies have motivated the development of on-road emissions testing procedures (Weiss *et al* 2013, European Commission 2015) which were approved by the European Council in February 2016. The VW vehicles modeled in this study comprise 2.6 million of the 13 million diesel passenger vehicles operating in Germany in 2012 (Eurostat 2016). Consequently, there will be additional health impacts due to excess emissions from vehicles produced by other manufacturers that are not accounted for in our study. In addition, there were a total of 86 million diesel passenger vehicles operating in the EU28 in 2010 (Papadimitriou *et al* 2013), making excess diesel NO_x emissions a public health concern for all of Europe. On the modeling side, current road transport NO_x inventories are also likely to be affected, if they are based on measurements from laboratory test cycles (e.g. EEA 2013), given that emissions from real-world driving conditions could be significantly different than those measured during a laboratory test cycle (Franco *et al* 2014).

Acknowledgments

We would like to thank the German Umweltbundesamt, in particular Mr Stefan Feigenspan and Mr Michael Kotzulla, for their valuable help in obtaining data on the spatial distribution of NO_x emissions in Germany.

References

- Allgemeiner Deutscher Automobil Club (ADAC, German automobile club) 2016 Autodatenbank (www.adac.de/infotestrat/autodatenbank/Autodaten/default.aspx) (in German)
- Alvarez R, Weilenmann M and Favez J Y 2008 Evidence of increased mass fraction of NO₂ within real world NO_x emissions of modern light vehicles derived from a reliable online measuring method *Atmos. Environ.* **42** 4699–4707
- Ashok A, Lee I H, Arunachalam S, Waitz I A, Yim S H L and Barrett S R H, 2013. Development of a response surface model of aviation's air quality impacts in the United States *Atmos. Environ.* **77** 445–52
- Auto, Motor und Sport 2016 All about the VW scandal, 28 January 2016 (www.auto-motor-sport.de/news/ea189-motor-mit-betrugsoftware-diese-autos-sind-betroffen-9982008.html) (in German)
- Barrett S R H, Speth R L, Eastham S D, Dedoussi I C, Ashok A, Malina R and Keith D W 2015 Impact of the Volkswagen emissions control defeat device on US public health *Environ. Res. Lett.* **10** 114005
- Bastani P, Heywood J B and Hope C 2012 The effect of uncertainty on US transport related GHG emissions and fuel consumption out to 2050 *Transport. Res. A Pol* **46** 517–48
- Beekmann M and Vautard R 2010 A modelling study of photochemical regimes over Europe: robustness and variability *Atmos. Chem. Phys.* **10** 10067–84
- Bey I, Jacob D J, Yantosca R M, Logan J A, Field B D, Fiore A M, Li Q, Liu H Y, Mickley L J and Schultz M G 2001 Global modeling of tropospheric chemistry with assimilated meteorology: model description and evaluation *J. Geophys. Res.* **106** 23073–95
- Bickel P and Friedrich R (ed) 2005 Impact pathway approach: monetary valuation *ExternE Externalities of Energy: Methodology 2005 Update* (Luxembourg: European Commission) ch 7
- BMVI Bundesministerium für Verkehr und digitale Infrastruktur 2016 Bericht der Untersuchungskommission 'Volkswagen'
- Brauer M *et al* 2012 Exposure assessment for estimation of the global burden of disease attributable to outdoor air pollution *Environ. Sci. Technol.* **46** 652–60
- Brauer M *et al* 2015 Ambient air pollution exposure estimation for the Global Burden of disease 2013 *Environ. Sci. Technol.* **50** 79–88
- Bright E A, Coleman P R, Rose A N and Urban M L 2014 *LandScan 2013TM High Resolution global Population Data Set* (www.ornl.gov/landscan/)
- Burnett R T *et al* 2014 An integrated risk function for estimating the global burden of disease attributable to ambient fine particulate matter exposure *Environ. Health Perspect.* **122** 397–403
- Caiazzo F, Ashok A, Waitz I A, Yim S H L and Barrett S R H 2013 Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005 *Atmos. Environ.* **79** 198–208
- Carslaw D C and Beevers S D 2005 Estimations of road vehicle primary NO₂ Exhaust emission fractions using monitoring data in London *Atmos. Environ.* **39** 167–77
- Carslaw D C, Beevers S D, Tate J E, Westmoreland E J and Williams M L 2011 Recent evidence concerning higher NO_x emissions from passenger cars and light duty vehicles *Atmos. Environ.* **2011** 45 7053–63
- Dedoussi I C and Barrett S R H 2014 Air pollution and early deaths in the United States. Part II: Attribution of PM_{2.5} exposure to emissions species, time, location and sector *Atmos. Environ.* **99** 610–7
- Duncan Fairlie T, Jacob D J and Park R J 2007 The impact of transpacific transport mineral dust in the United States *Atmos. Environ.* **41** 1251–66
- EC4MACS European Consortium for Modelling of Air Pollution and Climate Strategies 2012 eds M Holland, A Wagner and A Hunt, The ALPHA Benefit Assessment Model, March 2012
- EEA European Environment Agency 2013 *EMEP Technical Guidance to Prepare National Emission Inventories* (Luxembourg: European Environment Agency) Publications Office (<http://publications.europa.eu/10.2800/92722>)
- EEA 2014 Costs of air pollution from European industrial facilities 2008–2012 – an updated assessment, *EEA Technical Report No 20/2014*, Publications Office of the European Union
- EEA 2015a Air Quality e Reporting, Data for Germany, 2013, published on May 29, 2015, archived on May 16, 2016 (www.eea.europa.eu/data-and-maps/data/aqereporting#tab_data-by-country) (Accessed: 12 May 2016)

- EEA 2015b *Air Quality in Europe 2015 Report, EEA Report No 5/2015*, Publications Office of the European Union
- EMEP European Monitoring and Evaluation Programme 2016 Centre on Emission Inventories and Projections, WebDab Emissions Database, last updated May 30, 2016 (www.ceip.at/ms/ceip_home1/ceip_home/webdab/emepdatabase/reported_emissiondata/) (Accessed: 1 June 2016)
- European Commission 1991 Council Directive 91/441/EEC of 26 June 1991 amending Directive 70/220/EEC on the approximation of the laws of the Member States relating to measures to be taken against air pollution by emissions from motor vehicles (http://eur.lex.europa.eu/legal_content/EN/TXT/PDF/?uri=CELEX:31991L0441&from=EN) (Accessed: 19 June 2016)
- European Commission 2007 Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (<http://eur.lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:171:0001:0016:EN:PDF>) (Accessed: 30 September 2016)
- European Commission 2015 Press release: 'Commission welcomes Member States' agreement on robust testing of air pollution emissions by cars', October 28, 2015 (http://europa.eu/rapid/press_release_IP_15_5945_en.htm) (Accessed: 23 May 2016)
- Eurostat 2016 Custom data obtained from the road transportation database (<http://ec.europa.eu/eurostat/web/transport/data/database>)
- Franco V, Sánchez F P, German J and Mock P 2014 Real world exhaust emissions from modern diesel cars (www.automotive-online.nl/upload/files/feitencijfers/1443626509ICCT_PEMS_study_diesel_cars_20141013.pdf)
- Frankfurter Allgemeine Zeitung (FAZ) 2016 VW zahlt Werkstätten 60 Euro pro Software Update (www.faz.net/aktuell/wirtschaft/vw-abgasskandal/nach-vw-abgasskandal-rueckrufaktion-manipulierter-autos-14039092.html) (Accessed: 2 June 2016) (in German)
- Heald C L *et al* 2012 Atmospheric ammonia and particulate inorganic nitrogen over the United States *Atmos. Chem. Phys. Discuss.* **12** 10295–312
- Henze D K, Seinfeld J H and Shindell D T 2009 Inverse modeling and mapping US air quality influences of inorganic PM_{2.5} precursor emissions using the adjoint of GEOS chem. *Atmos. Chem. Phys.* **9** 5877–903
- Hoek G, Krishnan R M, Beelen R, Peters A, Ostro B, Brunekreef B and Kaufman J D 2013 Long term air pollution exposure and cardio respiratory mortality: a review *Environ. Health* **12** 43
- Holland S P, Mansur E, Muller N and Yates A 2015 Damages and expected deaths due to excess NO_x emissions from 2009–2015 Volkswagen diesel vehicles *Environ. Sci. Technol.*
- Jerrett M, Burnett R T, Pope C A, Ito K, Thurston G, Krewski D, Shi Y, Calle E and Thun M 2009 Long term ozone exposure and mortality *New Engl. J. Med.* **360** 1085–95
- Jhun I, Coull BA, Schwartz J, Hubbell B and Koutrakis P 2015 The impact of weather changes on air quality and health in the United States in 1994–2012 *Environ. Res. Lett.* **10** 084009
- Jiang X *et al* 2015 Revealing the hidden health costs embodied in Chinese exports *Environ. Sci. Technol.* **49** 4381–8
- KBA Kraftfahrtbundesamt 2015 Kraftfahrt Bundesamt ordnet den Rückruf von 2, 4 Millionen Volkswagen an, Press release October 16, 2015, Flensburg
- Kharol S K, Martin R V, Philip S, Vogel S, Henze D K, Chen D, Wang Y, Zhang Q and Heald C L 2013 Persistent sensitivity of Asian aerosol to emissions of nitrogen oxides *Geophys. Res. Lett.* **40** 1021–26
- Koo J, Wang Q, Henze D K, Waitz I and Barrett S R H 2013 Spatial sensitivities of human health risk to intercontinental and high altitude pollution *Atmos. Environ.* **71** 140–7
- Korzhenyevych A, Dehnen N, Bröcker J, Holtkamp M, Meier H, Gibson G, Varma A and Cox V 2014 Update of the handbook on external costs of transport. European Commission DG MOVE
- Krewski D *et al* 2009 Extended follow up and spatial analysis of the American Cancer Society study linking particulate air pollution and mortality *HEI Research Report 140* (Boston, MA: Health Effects Institute)
- Leibensperger E *et al* 2012 Climatic effects of 1950–2050 changes in US anthropogenic aerosols part 1: aerosol trends and radiative forcing *Atmos. Chem. Phys.* **12** 3333–48
- Lim S S *et al* 2012 A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010 *Lancet* **380** 2224–60
- Martin R V, Fiore A M and Van Donkelaar A 2004 Space based diagnosis of surface ozone sensitivity to anthropogenic emissions *Geophys. Res. Lett.* **31** L06120
- NOAA 2016 Climate at a Glance National Centers for Environmental Information (NCEI) (www.ncdc.noaa.gov/cag/time-series/global/europe/land/ytd/12/1995-2015)
- OECD 2012 Recommended value of a statistical life: numbers for policy analysis *Mortality Risk Valuation in Environment, Health and Transport Policies* (Paris: OECD Publishing) ch 6 (https://doi.org/10.1787/9789264130807_en)
- OECD 2014 Reviewing the evidence of and calculating the cost of the health impacts of air pollution *The Cost of Air Pollution: Health Impacts of Road Transport* (Paris: OECD Publishing) ch2 (https://doi.org/10.1787/9789264210448_en)
- Oldenkamp R, Van Zelm R and Huijbregts M A J 2016 Valuing the human health damage caused by the fraud of Volkswagen *Environ. Pollut.* **212** 121–7
- Papadimitriou G, Ntziachristos L, Wüthrich P, Notter B, Keller M, Fridell E, Winnes H, Styhre L and Sjödin A 2013 *Transport data collection supporting the quantitative analysis of measures relating to transport and climate change (TRACCS)* final report prepared for the Directorate General for Climate Action, European Commission
- Protonotariou A P, Bossioli E, Tombrou M, Mihalopoulos N, Biskos G, Kalogiros J, Kouvarakis G and Amiridis V 2012 Air pollution in eastern mediterranean: Nested Grid GEOS CHEM model results and airborne observations ed G Costas Helmis and T Panagiotis *Nastos Advances in Meteorology, Climatology and Atmospheric Physics* (Berlin Heidelberg: Springer) pp 1203–9 (http://doi.org/10.1007/978-3-642-29172-2_168)
- Seinfeld J H and Pandis S N 2006 *Chemistry of the troposphere Atmospheric Chemistry and Physics: From air Pollution to Climate Change* (Hoboken, NJ: John Wiley and Sons) ch 6
- Thompson G J, Carder D K, Besch M C, Thiruvengadam A and Kappanna H K 2014 In use emissions testing of light duty diesel vehicles in the United States (www.theicct.org/sites/default/files/publications/WVU_LDDV_in_use_ICCT_Report_Final_may2014.pdf)
- Turner M C *et al* 2015 Long term ozone exposure and mortality in a large prospective study *Am. J. Respir. Crit. Care Med.* **193** 1134–42
- UBA Umweltbundesamt 2016 NO_x emissions from passenger cars for year 2010, gridded with the tool GRETA, custom data obtained from UBA in 2016
- UN 2015 *World Population Prospects: The 2015 Revision, custom data acquired via website* United Nations, Department of Economic and Social Affairs, Population Division 2015 (<http://esa.un.org/unpd/wpp/DataQuery/>)
- US EPA 2004 Advisory Council on Clean Air Compliance Analysis Response to Agency Request on Cessation Lag (Washington, DC)
- US EPA 2011 The Benefits and Costs of the Clean Air Act: 1990 to 2020 Final report of US Environmental Protection Agency Office of Air and Radiation

- US EPA 2014 Guidelines for Preparing Economic Analysis National Center for Environmental Economics Office of Policy (<http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>)
- US EPA 2015 Notice of Violation (18 September 2015) sent by EPA to Volkswagen Group of America, Inc. (www.epa.gov/sites/production/files/2015-10/documents/vw_nov_caa_09_18_15.pdf)
- van Donkelaar A, Martin R V, Brauer M, Kahn R, Levy R, Verduzco C and Villeneuve P J 2010 Global estimates of ambient fine particulate matter concentrations from satellite based aerosol optical depth: development and application *Environ. Health Perspec.* **118** 847–55
- van Donkelaar A, Martin R V, Brauer M and Boys B L 2015 Use of satellite observations for long term exposure assessment of global concentrations of fine particulate matter *Environ. Health Perspec.* **123** 135–43
- VW Volkswagen 2015 Technical measures for the EA 189 diesel engines affected presented to the German Federal Motor Transport Authority, Press Release, Nov 25 2016, Wolfsburg
- VW Volkswagen 2016 Volkswagen making progress as planned with first wave of technical measures for diesel engines, press release, Feb 18 2016, Wolfsburg
- Weiss M, Bonnel P, Hummel R and Steininger N 2013 A complementary emissions test for light duty vehicles: assessing the technical feasibility of candidate procedures *Report EUR 25572 EN. European Commission Joint Research Centre*
- WHO 2006 Health Risks of Particulate Matter from Long range Transboundary Air Pollution (www.euro.who.int/data/assets/pdf_file/0006/78657/E88189.pdf)
- WHO 2013a Health risks of air pollution in Europe HRAPIE project (http://www.euro.who.int/data/assets/pdf_file/0006/238956/Health_risks_of_air_pollution_in_Europe_HRAPIE_project_Recommendations_for_concentration_response_functions_for_cost_benefit_analysis_of_particulate_matter_ozone_and_nitrogen_dioxide.pdf)
- WHO 2013b Review of evidence on health aspects of air pollution REVIHAAP project: technical report. Copenhagen, WHO Regional Office for Europe (www.euro.who.int/data/assets/pdf_file/0004/193108/REVIHAAP_Final_technical_report.pdf)
- WHO 2014 Disease and Injury Country Mortality Estimates for 2012 (World Health Organization)
- Yao X, Lau N T, Chan C K and Fang M 2005 The use of tunnel concentration profile data to determine the ratio of NO₂/NO_x directly emitted from vehicles *Atmos. Chem. Phys. Discuss.* **5** 12723–40
- Zhang L, Jacob D J, Knipping E M, Kumar N, Munger JW, Carouge C C, van Donkelaar A, Wang Y X and Chen D 2012 Nitrogen deposition to the United States: distribution, sources, and processes *Atmos. Chem. Phys.* **12** 4539–54

Tab 9

(footnote 19)

1 JOHN C. CRUDEN
Assistant Attorney General
2 Environment and Natural Resources Division

3 JOSHUA H. VAN EATON (WA-39871)
4 BETHANY ENGEL (MA-660840)
Trial Attorneys
5 Environmental Enforcement Section

6 U.S. Department of Justice
7 P.O. Box 7611
8 Washington DC 20044-7611
9 Telephone: (202) 514-5474
Facsimile: (202) 514-0097
10 Email: Josh.Van.Eaton@usdoj.gov

11 *Attorneys for Plaintiff United States of America*

12 UNITED STATES DISTRICT COURT
13 NORTHERN DISTRICT OF CALIFORNIA
SAN FRANCISCO DIVISION

14 _____)
15 IN RE: VOLKSWAGEN “CLEAN)
16 DIESEL” MARKETING, SALES)
17 PRACTICES, AND PRODUCTS)
18 LIABILITY LITIGATION)
19)
20)
21 _____)

Case No: MDL No. 2672 CRB (JSC)

PARTIAL CONSENT DECREE

Hon. Charles R. Breyer

22
23
24
25
26
27
28

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

TABLE OF CONTENTS

I. JURISDICTION AND VENUE 6

II. APPLICABILITY 6

III. DEFINITIONS 8

IV. PARTIAL INJUNCTIVE RELIEF 12

V. APPROVAL OF SUBMISSIONS AND EPA/CARB DECISIONS 18

VI. REPORTING AND CERTIFICATION REQUIREMENTS 20

VII. STIPULATED PENALTIES AND OTHER MITIGATION TRUST PAYMENTS 23

VIII. FORCE MAJEURE 30

IX. DISPUTE RESOLUTION 32

X. INFORMATION COLLECTION AND RETENTION 35

XI. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS 38

XII. COSTS 43

XIII. NOTICES 43

XIV. EFFECTIVE DATE 48

XV. RETENTION OF JURISDICTION 48

XVI. MODIFICATION 48

XVII. TERMINATION 49

XVIII. PUBLIC PARTICIPATION 49

XIX. SIGNATORIES/SERVICE 50

XX. INTEGRATION 50

XXI. FINAL JUDGMENT 51

XXII. APPENDICES 51

1 **WHEREAS**, Plaintiff United States of America, on behalf of the United States
2 Environmental Protection Agency, filed a complaint in this action on January 4, 2016, against
3 Volkswagen AG, Volkswagen Group of America, Inc., Volkswagen Group of America
4 Chattanooga Operations, LLC, Audi AG, Dr. Ing. h.c. F. Porsche AG, and Porsche Cars North
5 America, Inc. alleging that Defendants violated Sections 203(a)(1), (2), (3)(A), and (3)(B) of the
6 Clean Air Act, 42 U.S.C. §§ 7522(a)(1), (2), (3)(A), and (3)(B), with regard to approximately
7 500,000 model year 2009 to 2015 motor vehicles containing 2.0 liter diesel engines (more
8 specifically defined elsewhere as “2.0 Liter Subject Vehicles”) and approximately 80,000 model
9 year 2009 to 2016 motor vehicles containing 3.0 liter diesel engines (more specifically defined
10 elsewhere as “3.0 Liter Subject Vehicles”), for a total of approximately 580,000 motor vehicles
11 (collectively, “Subject Vehicles”);

12 **WHEREAS**, the U.S. Complaint alleges that each Subject Vehicle contains, as part of
13 the engine control module (“ECM”), certain computer algorithms that cause the emissions
14 control system of those vehicles to perform differently during normal vehicle operation and use
15 than during emissions testing. The U.S. Complaint alleges that these computer algorithms are
16 prohibited defeat devices under the Act, and that during normal vehicle operation and use, the
17 Subject Vehicles emit levels of oxides of nitrogen (“NOx”) significantly in excess of the EPA
18 compliant levels. The U.S. Complaint alleges and asserts four claims for relief related to the
19 presence of the defeat devices in the Subject Vehicles;

20 **WHEREAS**, the People of the State of California, by and through the California Air
21 Resources Board and Kamala D. Harris, Attorney General of the State of California, filed a
22 complaint on June 28, 2016, against Defendants alleging that Defendants violated Cal. Health &
23 Safety Code §§ 43106, 43107, 43151, 43152, 43153, 43205, 43211, and 43212; Cal. Code Regs.

1 tit. 13, §§ 1903, 1961, 1961.2, 1965, 1968.2, and 2037, and 40 C.F.R. Sections incorporated by
2 reference in those California regulations; Cal. Bus. & Prof. Code §§ 17200 *et seq.*, 17500 *et seq.*,
3 and 17580.5; Cal. Civ. Code § 3494; and 12 U.S.C. § 5531 *et seq.*, with regard to approximately
4 71,000 model year 2009 to 2015 motor vehicles containing 2.0 liter diesel engines and
5 approximately 16,000 model year 2009 to 2016 motor vehicles containing 3.0 liter diesel
6 engines, for a total of approximately 87,000 motor vehicles. The California Complaint alleges,
7 in relevant part, that the motor vehicles contain prohibited defeat devices and have resulted in,
8 and continue to result in, increased NOx emissions from each such vehicle significantly in excess
9 of CARB requirements, that these vehicles have resulted in the creation of a public nuisance, and
10 that Defendants engaged in related conduct that violated unfair competition, false advertising,
11 and consumer protection laws;

14 **WHEREAS**, the United States and California enter into this Partial Consent Decree with
15 Volkswagen AG, Audi AG, Volkswagen Group of America, Inc., and Volkswagen Group of
16 America Chattanooga Operations, LLC (“Settling Defendants”) (collectively, the “Parties”) to
17 address the 2.0 Liter Subject Vehicles on the road and the associated environmental
18 consequences resulting from the past and future excess emissions from the 2.0 Liter Subject
19 Vehicles;

21 **WHEREAS**, Settling Defendants admit that software in the 2.0 Liter Subject Vehicles
22 enables the vehicles’ ECMs to detect when the vehicles are being driven on the road, rather than
23 undergoing Federal Test Procedures, and that this software renders certain emission control
24 systems in the vehicles inoperative when the ECM detects the vehicles are not undergoing
25 Federal Test Procedures, resulting in emissions that exceed EPA-compliant and CARB-
26 compliant levels when the vehicles are driven on the road;

1 **WHEREAS**, Settling Defendants admit that this software was not disclosed in the
2 Certificate of Conformity and Executive Order applications for the 2.0 Liter Subject Vehicles,
3 and, as a result, the design specifications of the 2.0 Liter Subject Vehicles, as manufactured,
4 differ materially from the design specifications described in the Certificate of Conformity and
5 Executive Order applications;
6

7 **WHEREAS**, except as expressly provided in this Consent Decree, nothing in this
8 Consent Decree shall constitute an admission of any fact or law by any Party except for the
9 purpose of enforcing the terms or conditions set forth herein;
10

11 **WHEREAS**, the Parties agree that:

12 1. The 2.0 Liter Subject Vehicles on the road emit NOx at levels above the standards
13 to which they were certified to EPA and CARB pursuant to the Clean Air Act and the California
14 Health and Safety Code, and a prompt remedy to address the noncompliance is needed;

15 2. At the present time, there are no practical engineering solutions that would,
16 without negative impact to vehicle functions and unacceptable delay, bring the 2.0 Liter Subject
17 Vehicles into compliance with the exhaust emission standards and the on-board diagnostics
18 requirements to which VW certified the vehicles to EPA and CARB;

19 3. Accordingly, as one element of the remedy to address the Clean Air Act and
20 California Health and Safety Code violations, Settling Defendants are required to remove from
21 commerce in the United States and/or perform an Approved Emissions Modification on at least
22 85% of the 2.0 Liter Subject Vehicles (“Recall Rate”). To this end, Settling Defendants must
23 offer each and every Eligible Owner and Eligible Lessee of an Eligible Vehicle the option of the
24 Buyback of the Eligible Vehicle or the Lease Termination, in accordance with the terms
25 specified in Appendix A (Buyback, Lease Termination, and Vehicle Modification Recall
26
27
28

1 Program). In addition, Settling Defendants shall offer Eligible Owners and Eligible Lessees the
2 option of an emissions modification in accordance with the technical specifications of Appendix
3 B (Vehicle Recall and Emissions Modification Program), if Settling Defendants propose such a
4 modification and EPA/CARB approve it. Settling Defendants estimate that the total cost of
5 injunctive relief pursuant to the requirements of Appendix A and the related Class Action
6 Settlement and FTC Order may be up to \$10,033,000,000. In the event Settling Defendants do
7 not achieve an 85% Recall Rate, Settling Defendants must pay additional funds into the
8 Mitigation Trust;
9

10
11 4. The practical engineering solutions provided by Appendix B (Vehicle Recall and
12 Emissions Modification Program), should Settling Defendants propose such emissions
13 modifications consistent with the provisions of Appendix B, would substantially reduce NOx
14 emissions from the 2.0 Liter Subject Vehicles and improve their on-board diagnostics, would
15 avoid undue waste and potential environmental harm that would be associated with removing the
16 2.0 Liter Subject Vehicles from service, and would allow Eligible Owners and Eligible Lessees
17 to retain their Eligible Vehicles if they want to do so;
18

19 5. Members of the public who are Eligible Owners or Eligible Lessees of Eligible
20 Vehicles will benefit from the relief provided by this Consent Decree;
21

22 6. As described in Appendix C (ZEV Investment Commitment), Settling Defendants
23 will direct \$2,000,000,000 of investments over a 10-year period to support increased use of
24 technology for Zero Emission Vehicles (“ZEV”) in California and the United States and may
25 include investments related to ZEV infrastructure, access to ZEVs, and ZEV education. The
26 ZEV investments required by this Consent Decree are intended to address the adverse
27 environmental impacts arising from consumers’ purchases of the 2.0 Liter Subject Vehicles,
28

1 which the United States and California contend were purchased with the mistaken belief that
2 they were lower-emitting vehicles;

3 7. As described below and in Appendix D (Form of Environmental Mitigation Trust
4 Agreement), Settling Defendants will pay a total of \$2,700,000,000 to fund Eligible Mitigation
5 Actions that will reduce emissions of NOx where the 2.0 Liter Subject Vehicles were, are, or will
6 be operated. The funding for the Eligible Mitigation Actions required by this Consent Decree is
7 intended to fully mitigate the total, lifetime excess NOx emissions from the 2.0 Liter Subject
8 Vehicles; and
9

10 **WHEREAS**, the Parties recognize, and the Court by entering this Consent Decree finds,
11 that this Consent Decree has been negotiated by the Parties in good faith and will avoid litigation
12 among the Parties regarding certain relief with respect to the 2.0 Liter Subject Vehicles for the
13 claims alleged in the Complaints, and that this Consent Decree is fair, reasonable, and in the
14 public interest;
15

16 **WHEREAS**, the Parties recognize, and the Court by entering this Consent Decree finds,
17 that the United States and California are not enforcing the laws of other countries, including the
18 emissions laws or regulations of any jurisdiction outside the United States. Nothing in this
19 Consent Decree is intended to apply to, or affect, Settling Defendants' obligations under the laws
20 or regulations of any jurisdiction outside the United States. At the same time, the laws and
21 regulations of other countries shall not affect the Settling Defendants' obligations under this
22 Consent Decree.
23

24 **NOW, THEREFORE**, before the taking of any testimony, without the adjudication of
25 any issue of fact or law, and with the consent of the Parties, **IT IS HEREBY ADJUDGED,**
26 **ORDERED, AND DECREED** as follows:
27
28

1 **I. JURISDICTION AND VENUE**

2 1. The Court has jurisdiction over the subject matter of this action, pursuant to 28
3 U.S.C. §§ 1331, 1345, and 1355, and Sections 203, 204, and 205 of the Act, 42 U.S.C. §§ 7522,
4 7523, and 7524, and over the Parties. Venue lies in this District pursuant to 28 U.S.C. § 1407
5 and the MDL Panel’s Transfer Order, dated December 8, 2015, and filed in this MDL action as
6 Dkt. # 1. The Court has supplemental jurisdiction over the California State law claims pursuant
7 to 28 U.S.C. § 1367. For purposes of this Decree, Settling Defendants consent to the Court’s
8 jurisdiction over this Consent Decree, over any action to enforce this Consent Decree, and over
9 Settling Defendants, and consent to venue in this judicial district. Settling Defendants reserve
10 the right to challenge and oppose any claims to jurisdiction that do not arise from the Court’s
11 jurisdiction over this Consent Decree or an action to enforce this Consent Decree.
12

13
14 2. For purposes of this Consent Decree, Settling Defendants agree that the U.S.
15 Complaint states claims upon which relief may be granted pursuant to Sections 203, 204, and
16 205 of the Act, 42 U.S.C. §§ 7522, 7523, and 7524, and that the California Complaint states
17 claims upon which relief may be granted pursuant to Cal. Health & Safety Code §§ 43106,
18 43107, 43151, 43152, 43153, 43205, 43211, and 43212; Cal. Code Regs., tit. 13, §§ 1903, 1961,
19 1961.2, 1965, 1968.2, and 2037, and 40 C.F.R. Sections incorporated by reference in those
20 California regulations; Cal. Bus. & Prof. Code §§ 17200 *et seq.*, 17500 *et seq.*, and 17580.5; Cal.
21 Civ. Code § 3494; and 12 U.S.C. § 5531 *et seq.*
22
23

24 **II. APPLICABILITY**

25 3. The obligations of this Consent Decree apply to and are binding upon the United
26 States and California, and upon Settling Defendants and any of Settling Defendants’ successors,
27 assigns, or other entities or persons otherwise bound by law.
28

1 4. Settling Defendants' obligations to comply with the requirements of this Consent
2 Decree are joint and several. In the event of the insolvency of any Settling Defendant or the
3 failure by any Settling Defendant to implement any requirement of this Consent Decree, the
4 remaining Settling Defendants shall complete all such requirements.
5

6 5. Any legal successor or assign of any Settling Defendant shall remain jointly and
7 severally liable for the payment and other performance obligations hereunder. Settling
8 Defendants shall include an agreement to so remain liable in the terms of any sale, acquisition,
9 merger, or other transaction changing the ownership or control of any of the Settling Defendants,
10 and no change in the ownership or control of any Settling Defendant shall affect the obligations
11 hereunder of any Settling Defendant without modification of the Decree in accordance with
12 Section XVI.
13

14 6. Settling Defendants shall provide a copy of this Consent Decree to the members
15 of their respective Board of Management and/or Board of Directors and their executives whose
16 duties might reasonably include compliance with any provision of this Decree. Settling
17 Defendants shall condition any contract providing for work required under this Consent Decree
18 to be performed in conformity with the terms thereof. Settling Defendants shall also ensure that
19 any contractors, agents, and employees whose duties might reasonably include compliance with
20 any provision of the Decree are made aware of those requirements of the Decree relevant to their
21 performance.
22
23

24 7. In any action to enforce this Consent Decree, Settling Defendants shall not raise
25 as a defense the failure by any of its officers, directors, employees, agents, or contractors to take
26 any actions necessary to comply with the provisions of this Consent Decree.
27
28

III. DEFINITIONS

8. Terms used in this Consent Decree that are defined in the Act or in regulations promulgated pursuant to the Act shall have the meanings assigned to them in the Act or such regulations, unless otherwise provided in this Decree. Terms that are defined in an Appendix to this Consent Decree have the meaning assigned to them in that Appendix. Whenever the terms set forth below are used in this Consent Decree, the following definitions apply:

“2.0 Liter Subject Vehicles” means each and every light duty diesel vehicle equipped with a 2.0 liter TDI engine that Settling Defendants sold or offered for sale in, or introduced or delivered for introduction into commerce in the United States or its Territories, or imported into the United States or its Territories, and that is or was purported to have been covered by the following EPA Test Groups:

Model Year	EPA Test Group	Vehicle Make and Model(s)
2009	9VWXV02.035N	VW Jetta, VW Jetta Sportwagen
2009	9VWXV02.0U5N	VW Jetta, VW Jetta Sportwagen
2010	AVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2011	BVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2012	CVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2012	CVWXV02.0U4S	VW Passat
2013	DVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen, Audi A3
2013	DVWXV02.0U4S	VW Passat
2014	EVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta Sportwagen
2014	EVWXV02.0U4S	VW Passat

2015	FVGAV02.0VAL	VW Beetle, VW Beetle Convertible, VW Golf, VW Golf Sportwagen, VW Jetta, VW Passat, Audi A3
------	--------------	---

“3.0 Liter Subject Vehicles” means each and every model year 2009 to 2016 light duty diesel vehicle equipped with a 3.0 liter TDI engine that Settling Defendants sold or offered for sale in, or introduced or delivered for introduction into, commerce in the United States or its Territories, or imported into the United States or its Territories, and that is or was purported to have been covered by the EPA test groups set forth in Appendix B to the U.S. Complaint;

“Approved Emissions Modification” has the meaning set forth in Appendix B;

“Buyback” has the meaning set forth in Appendix A;

“CA AG” means the California Attorney General’s Office and any of its successor departments or agencies;

“California” means the People of the State of California, acting by and through the California Attorney General and the California Air Resources Board;

“California Complaint” means the complaint filed by California in this action;

“CARB” means the California Air Resources Board and any of its successor departments or agencies;

“Class Action Settlement” has the meaning set forth in Appendix A;

“Clean Air Act” or “Act” means 42 U.S.C. §§ 7401-7671q;

“Complaints” means the U.S. Complaint and the California Complaint;

“Consent Decree” or “Decree” or “Partial Consent Decree” means this partial consent decree and all appendices attached hereto (listed in Section XXII);

“Day” means a calendar day unless expressly stated to be a business day. In computing any period of time under this Consent Decree, where the last day would fall on a Saturday,

1 Sunday, or federal or California holiday, the period shall run until the close of business of the
2 next business day;

3 “Defendants” means the persons or entities named in the U.S. Complaint and California
4 Complaint, specifically, Volkswagen AG, Volkswagen Group of America, Inc., Volkswagen
5 Group of America Chattanooga Operations, LLC, Audi AG, Dr. Ing. h.c. F. Porsche AG, and
6 Porsche Cars North America, Inc.;

8 “Effective Date” has the meaning set forth in Section XIV;

9 “Eligible Lessee” has the meaning set forth in Appendix A;

10 “Eligible Mitigation Actions” has the meaning set forth in Appendix D;

11 “Eligible Owner” has the meaning set forth in Appendix A;

12 “Eligible Vehicle” has the meaning set forth in Appendix A;

13 “EPA” means the United States Environmental Protection Agency and any of its
14 successor departments or agencies;

15 “FTC Order” has the meaning set forth in Appendix A;

16 “Indian tribe” means any Indian or Alaska Native tribe, band, nation, pueblo, village, or
17 community that the Secretary of the Interior acknowledges to exist as an Indian tribe. The list of
18 federally recognized Indian entities is maintained and updated by the Department of the Interior
19 and published in the Federal Register pursuant to the Federally Recognized Indian Tribe List Act
20 of 1994, 25 U.S.C. 479a-1;

21 “Lease Termination” has the meaning set forth in Appendix A;

22 “Materials” means Submissions and other documents, certifications, plans, reports,
23 notifications, data, or other information that is required to be submitted pursuant to this Decree;

1 “Mitigation Trust” or “Trust” means the trust to be established pursuant to Paragraph 16
2 and governed by a trust agreement in the form set forth in Appendix D;

3 “Mitigation Trust Payment” means any payment required to be paid into the Trust
4 Account;

5 “Paragraph” means a portion of this Decree identified by an Arabic numeral;

6 “Parties” means the United States, California, and Settling Defendants;

7 “Retail Replacement Value” has the meaning set forth in Appendix A;

8 “Section” means a portion of this Decree identified by a Roman numeral;

9 “Settling Defendants” means Volkswagen AG, Audi AG, Volkswagen Group of
10 America, Inc., and Volkswagen Group of America Chattanooga Operations, LLC;

11 “Submission” means any plan, report, guidance, or other item that is required to be
12 submitted for approval pursuant to this Consent Decree;

13 “Trust Account” has the meaning set forth in the Trust Agreement;

14 “Trust Agreement” means a trust agreement in the form set forth in Appendix D to be
15 entered into by the Settling Defendants and the trustee selected pursuant to Paragraph 15;

16 “Trust Effective Date” means the date upon which a fully executed version of the Trust
17 Agreement is filed with the Court pursuant to Paragraph 17;

18 “United States” means the United States of America, acting on behalf of EPA, except
19 when used in Paragraph 75.h, when it shall mean the United States of America;

20 “U.S. Complaint” means the complaint filed by the United States in this action on
21 January 4, 2016; and

22 “ZEV Investments” has the meaning set forth in Appendix C.
23
24
25
26
27
28

1 **IV. PARTIAL INJUNCTIVE RELIEF**

2 **A. Buyback, Lease Termination, and Vehicle Modification Recall Program**
3 **(Appendix A)**

4 9. Settling Defendants shall implement the Buyback, Lease Termination, and
5 Vehicle Modification Recall Program in accordance with the requirements set forth in Appendix
6 A as one element of the remedy to address the Clean Air Act and California Health and Safety
7 Code violations.

8
9 10. Settling Defendants shall remove from commerce in the United States and/or
10 perform an Approved Emissions Modification (as described in Section IV.B) on at least 85% of
11 the 2.0 Liter Subject Vehicles as set forth in Appendix A. Settling Defendants must offer each
12 and every Eligible Owner and Eligible Lessee of an Eligible Vehicle the option of the Buyback
13 of the Eligible Vehicle at a price no less than Retail Replacement Value, or the Lease
14 Termination in accordance with the terms specified in Appendix A.

15
16 11. In the event Settling Defendants do not achieve an 85% Recall Rate, Settling
17 Defendants shall pay additional funds into the Mitigation Trust as set forth in Appendix A.

18 **B. Vehicle Recall and Emissions Modification Program (Appendices A & B)**

19
20 12. Settling Defendants shall not sell or cause to be sold, or lease or cause to be
21 leased, any 2.0 Liter Subject Vehicle, except as provided in Appendices A and B. Settling
22 Defendants shall not modify or cause to be modified any emission control system or emissions
23 aftertreatment or any other software or hardware that affects the emission control system on any
24 2.0 Liter Subject Vehicle except in compliance with Appendices A and B. If the Settling
25 Defendants elect to propose a vehicle recall and Emissions Modification for any 2.0 Liter
26 Subject Vehicle, approval and implementation of that modification shall be governed by
27 Appendices A and B. As specified in Appendices A and B, Settling Defendants may export from
28

1 the United States to another country any 2.0 Liter Subject Vehicle, provided that such vehicle
2 has received the applicable Approved Emissions Modification, and that no vehicle may be
3 exported if the applicable Approved Emissions Modification has been suspended as set forth in
4 Appendix B, Paragraph 7.3.

5
6 **C. ZEV Investment Commitment (Appendix C)**

7 13. Settling Defendants shall make \$2,000,000,000 in ZEV Investments in
8 accordance with the requirements set forth in Appendix C.

9
10 **D. Mitigation of Excess Emissions and Mitigation Trust (Appendix D)**

11 14. Payment of Mitigation Funds. In addition to any Mitigation Trust Payments
12 required by Appendices A and B, Settling Defendants shall make \$2,700,000,000 in Mitigation
13 Trust Payments to the Trust to be used to fund Eligible Mitigation Actions to achieve reductions
14 of NOx emissions in accordance with requirements to be set forth in a Trust Agreement, the form
15 of which is attached as Appendix D. Settling Defendants shall notify the Trustee and the United
16 States and CARB by mail and email in accordance with the requirements of Section XIII
17 (Notices) on the Day any such payments are made. Settling Defendants shall make the payments
18 as follows:
19

20 a. Initial Deposit by Settling Defendants. Not later than 30 Days after the
21 Effective Date, Settling Defendants shall deposit \$900,000,000 into the Trust Account
22 (“Initial Deposit”).
23

24 b. Subsequent Deposits by Settling Defendants. Settling Defendants shall make
25 two subsequent deposits into the Trust Account, each in the amount of \$900,000,000,
26 the first no later than the first anniversary of the date of the Initial Deposit, and the
27 second no later than the second anniversary of the date of the Initial Deposit (each a
28

1 “Subsequent Deposit”).

2 c. Additional Mitigation Trust Payments. All Mitigation Trust Payments
3 required by Appendices A and B shall be deposited into the Trust Account.

4 d. Court Registry. If any payments required under this Paragraph 14 become
5 due before the Trust Account is established, Settling Defendants shall deposit such
6 payments with the Court in accordance with Fed. R. Civ. P. 67. The Settling
7 Defendants shall execute such documents and support such actions as necessary to
8 facilitate the deposit of payments with the Court. For purposes of Fed. R. Civ. P. 67,
9 this Consent Decree constitutes an order permitting such deposits. For purposes of 28
10 U.S.C. § 2042, this Consent Decree constitutes an order permitting the Trustee, upon
11 filing a designation and identification of Trust Account as required by Appendix D, to
12 withdraw all such funds, including all accrued interest, for immediate and concurrent
13 deposit into the Trust Account. In the event that the United States determines that the
14 funds cannot be deposited in accordance with Fed. R. Civ. P. 67, and unless otherwise
15 agreed in writing by the Parties, the Settling Defendants shall hold the funds in an
16 interest-bearing escrow account, for deposit (together with all accrued interest) into the
17 Trust Account when established.

18 15. Selection of Trustee Procedure

19 a. Recommendation of Trustee Candidates. Not later than 30 Days after the
20 Effective Date, the following parties (the “Recommending Parties”) may submit to the
21 United States a list of between three and five recommended trustee candidates:

22 i. California;

23 ii. the entities (other than Indian tribes) listed in Appendix D-1 (which, if
24
25
26
27
28

1 they submit a list, must submit one consolidated list); and

2 iii. Indian tribes (which, if they submit a list, must submit one consolidated
3 list).

4 b. The United States may also consider additional trustee candidates in its
5 discretion.

6 c. The Recommending Parties shall confer among each other, and with the
7 United States, in a good faith effort to agree on one list of between three and five
8 recommended trustee candidates.

9 d. Trustee Nomination Criteria. Each Recommending Party shall, for each
10 trustee candidate, and in a form that can be filed with the Court, submit to the United
11 States:

12 i. A resume, biographical information, and any other relevant material
13 concerning the candidate and his or her competence and qualifications to serve as
14 trustee;

15 ii. A description of any past, present, or future business or financial
16 relationship that the candidate has with the Settling Defendants, EPA, any entity
17 listed in Appendix D-1, or any Indian tribe;

18 iii. A verification that, to the knowledge of the Recommending Party, the
19 candidate has no conflicts of interest with regard to this matter, or that any actual
20 or apparent conflict has been waived by the Recommending Parties and the
21 United States;

22 iv. A verification that, to the knowledge of the Recommending Party, the
23 candidate is willing to agree not to be employed by any Recommending Party
24
25
26
27
28

1 during the course of the Trust and for a minimum of two years after termination
2 of his or her term as trustee; and

3 v. A summary, after conferring with the other Recommending Parties and the
4 United States, of whether any other Recommending Parties or the United States
5 consents or objects to the candidate.
6

7 e. Selection of Trustee. After receiving candidate lists, and supporting
8 information (including for such additional candidates that the United States considers),
9 the United States will file a motion with the Court requesting that the Court select and
10 appoint a trustee from among the candidates. If no candidate is selected by the Court
11 in accordance with this subparagraph e, the process under this Paragraph 15 shall be
12 repeated until a trustee is selected and approved.
13

14 16. Finalization of Trust Agreement. Upon selection of the trustee under Paragraph
15 15, the United States will notify the selected trustee of his or her selection, and provide a copy of
16 this Consent Decree. The United States will provide the selected trustee with an opportunity
17 promptly to provide to the United States any requested changes to Appendix D, and the United
18 States will confer with the selected trustee, California, the entities (other than Indian tribes) listed
19 in Appendix D-1, and the Settling Defendants, to finalize the Trust Agreement. Any changes
20 made to Appendix D shall be made in accordance with Section XVI of this Decree
21 (Modification). After conferring pursuant to the preceding sentence, the United States will
22 present the final Trust Agreement to Settling Defendants for execution, and Settling Defendants
23 shall execute the final Trust Agreement and send it to the U.S. Department of Justice (“DOJ”) by
24 overnight mail within 15 Days after receipt. The United States reserves the right to disqualify
25 the selected trustee if he or she unreasonably impedes finalization of the Trust Agreement. Any
26
27
28

1 dispute regarding finalization of the terms of the Trust Agreement shall be resolved in
2 accordance with the dispute resolution provisions set forth in Paragraph 6.2 of Appendix D. In
3 resolving any such dispute, deference shall be given to the terms of Appendix D, and such terms
4 shall be altered only as necessary to enhance the ability of the Trust to fund Eligible Mitigation
5 Actions in order to achieve reductions of NOx emissions in the United States. Without the
6 express written consent of the Settling Defendants, the final Trust Agreement shall not: (i)
7 require the Settling Defendants to make any payments to the Trust other than the Mitigation
8 Trust Payments required by the Consent Decree; or (ii) impose any greater obligation on Settling
9 Defendants than those set forth in Appendix D.
10
11

12 17. Establishment of Trust. The Trust shall come into being upon the United States'
13 filing with the Court of a finalized Trust Agreement, approved by the United States, and
14 executed by the Settling Defendants and the Trustee.
15

16 18. Selection of Substitute Trustee. Unless otherwise ordered by the Court, substitute
17 trustees shall be selected in accordance with the provisions of Paragraph 15 of this Consent
18 Decree.
19

20 19. Modification of Trust Agreement and Appendices. After the Trust is established
21 pursuant to Paragraph 17, it may only be modified in accordance with the Modification provision
22 set forth in Paragraph 6.4 of Appendix D. In the event that the final Trust Agreement does not
23 contain a Modification provision, it may only be Modified in accordance with the procedures set
24 forth in Section XVI (Modification) of this Consent Decree. Without the express written consent
25 of the Settling Defendants, no modification of the Trust Agreement shall: (i) require the Settling
26 Defendants to make any payments to the Trust other than the Mitigation Trust Payments required
27 by the Consent Decree; or (ii) impose any greater obligation on Settling Defendants than those
28

1 set forth in Appendix D. To the extent the consent of the Settling Defendants is required to
2 effectuate a modification of the Trust Agreement, such consent shall not be unreasonably
3 withheld.

4
5 **V. APPROVAL OF SUBMISSIONS AND EPA/CARB DECISIONS**

6 20. For purposes of this Consent Decree, unless otherwise specified in this Consent
7 Decree:

8 a. with respect to any Submission, other obligation, or force majeure claim of
9 Settling Defendants concerning Appendix B, EPA and CARB, or the United States
10 and California as applicable, will issue a joint decision concerning the Submission,
11 other obligation, or force majeure claim;

12
13 b. with respect to any Submission, other obligation, or force majeure claim of
14 Settling Defendants under the Consent Decree that relates to National ZEV
15 Investments or California ZEV Investments, EPA in the case of National ZEV
16 Investment requirements and CARB in the case of California ZEV Investment
17 requirements will have sole authority for making decisions concerning the National
18 ZEV Investments or California ZEV Investment requirements, respectively; and

19
20 c. with respect to any other Submission, obligation, or force majeure claim of
21 Settling Defendants under the Consent Decree, the position of EPA or the United
22 States, after consultation with CARB or California, as applicable, shall control.

23
24 21. For purposes of this Section, Section VII (Stipulated Penalties and Other
25 Mitigation Trust Payments), Section VIII (Force Majeure), and Section IX (Dispute Resolution),
26 in accordance with the decision-making authorities set forth in Paragraph 20, references to
27 “EPA/CARB” mean EPA and CARB jointly, or EPA or CARB, as applicable; references to “the
28

1 United States/California” mean the United States and California jointly, or the United States or
2 California, as applicable; and references to the United States/CARB mean the United
3 States/CARB jointly, or the United States or CARB, as applicable.
4

5 22. Any specific procedures or specifications for the review of Submissions set forth
6 in the Appendices shall govern, as applicable, the review of any Submission submitted pursuant
7 to such Appendix. Except as otherwise specified in the Appendices, after review of any
8 Submission, EPA/CARB shall in writing: (a) approve the Submission; (b) approve the
9 Submission upon specified conditions; (c) approve part of the Submission and disapprove the
10 remainder; or (d) disapprove the Submission. In the event of disapproval, in full or in part, of
11 any portion of the Submission, if not already provided with the disapproval, upon the request of
12 Settling Defendants, EPA/CARB will provide in writing the reasons for such disapproval.
13

14 23. If the Submission is approved pursuant to Paragraph 22, Settling Defendants shall
15 take all actions required by the Submission in accordance with the schedules and requirements of
16 the Submission, as approved. If the Submission is conditionally approved or approved only in
17 part pursuant to Paragraph 22(b) or (c), Settling Defendants shall, upon written direction from
18 EPA/CARB, take all actions required by the Submission that EPA/CARB determine(s) are
19 technically severable from any disapproved portions.
20

21 24. If the Submission is disapproved in whole or in part pursuant to Paragraph 22(c)
22 or (d), Settling Defendants shall, within 30 Days or such other time as the Parties agree to in
23 writing, correct all deficiencies and resubmit the Submission, or disapproved portion thereof, for
24 approval, in accordance with Paragraphs 22 to 23. If the resubmission is approved in whole or in
25 part, Settling Defendants shall proceed in accordance with Paragraph 23.
26

27 25. If a resubmitted Submission, or portion thereof, is disapproved in whole or in part,
28

1 EPA/CARB may again require Settling Defendants to correct any deficiencies, in accordance
2 with Paragraphs 23 and 24, or EPA/CARB may itself/themselves correct any deficiencies.

3 26. Settling Defendants may elect to invoke the dispute resolution procedures set
4 forth in Section IX (Dispute Resolution) concerning any decision of EPA/CARB to disapprove,
5 approve on specified conditions, or modify a Submission. If Settling Defendants elect to invoke
6 dispute resolution, they shall do so within 30 Days (or such other time as the Parties agree to in
7 writing) after receipt of the applicable decision.
8

9 27. Any stipulated penalties applicable to the original Submission, as provided in
10 Section VII(Stipulated Penalties and Other Mitigation Trust Payments), shall accrue during the
11 30-Day period or other specified period pursuant to Paragraph 24. Such stipulated penalties shall
12 not be payable unless the resubmission of the Submission is untimely or is disapproved in whole
13 or in part; provided that, if the original Submission was so deficient as to constitute a material
14 breach of Settling Defendants' obligations under this Decree in making that Submission, the
15 stipulated penalties applicable to the original Submission shall be due and payable
16 notwithstanding any subsequent resubmission.
17

18
19 **VI. REPORTING AND CERTIFICATION REQUIREMENTS**

20 28. Timing of Reports. Unless otherwise specified in this Consent Decree, or the
21 Parties otherwise agree in writing:
22

23 a. To the extent quarterly reporting is required by this Decree, Settling
24 Defendants shall submit each report one month after the end of the calendar quarter,
25 and the report shall cover the prior calendar quarter. That is, reports shall be submitted
26 on April 30, July 31, October 31, and January 31 for the prior respective calendar
27 quarter (*i.e.*, the report submitted on April 30 covers January 1 through March 31), as
28

1 further specified, and covering the items specified, elsewhere in the Consent Decree.

2 b. To the extent semi-annual or annual reporting is required, Settling Defendants
3 shall submit each report one month after the end of the applicable prior 6-month or
4 annual calendar period, *i.e.*, April 30, July 31, October 31, or January 31, as
5 applicable, and as further specified, and covering the items specified, elsewhere in the
6 Consent Decree.
7

8 29. Settling Defendants may assert that information submitted under this Consent
9 Decree is protected as Confidential Business Information (“CBI”) as set out in 40 C.F.R. Part 2
10 or Cal. Code of Regs. tit. 17, §§ 91000 to 91022.
11

12 30. Reporting of Violations

13 a. Except to the extent the Appendices specify different timeframes or notice
14 recipients, if Settling Defendants reasonably believe they have violated, or that they
15 may violate, any requirement of this Consent Decree, Settling Defendants shall notify
16 EPA, CARB, and CA AG of such violation and its likely duration, in a written report
17 submitted within 10 business days after the Day Settling Defendants first reasonably
18 believe that a violation has occurred or may occur, with an explanation of the
19 violation’s likely cause and of the remedial steps taken, or to be taken, to prevent or
20 minimize such violation. If Settling Defendants believe the cause of a violation cannot
21 be fully explained at the time the report is due, Settling Defendants shall so state in the
22 report. Settling Defendants shall investigate the cause of the violation and shall then
23 submit an amendment to the report, including a full explanation of the cause of the
24 violation, within 30 Days after the Day on which Settling Defendants reasonably
25 believe they have determined the cause of the violation. Nothing in this Paragraph or
26
27
28

1 the following Paragraph relieves Settling Defendants of their obligation to provide the
2 notice required by Section VIII (Force Majeure).

3 b. Semi-Annual Report of Violations. On January 31 and July 31 of each year,
4 Settling Defendants shall submit a summary to the United States and California of any
5 violations of the Decree that occurred during the preceding six months (or potentially
6 shorter period for the first semi-annual report), and that are required to be reported
7 pursuant to subparagraph 30.a, including the date of the violation, the date the notice
8 of violation was sent, and a brief description of the violation.
9

10 31. Whenever Settling Defendants reasonably believe that any violation of this
11 Consent Decree or any other event affecting Settling Defendants' performance under this Decree
12 may pose an immediate threat to the public health or welfare or the environment, Settling
13 Defendants shall notify EPA and California by email as soon as practicable, but no later than 24
14 hours after Settling Defendants first reasonably believe the violation or event has occurred. This
15 procedure is in addition to the requirements set forth in Paragraph 30.
16
17

18 32. All plans, reports, and other information required to be posted to a public website
19 by this Consent Decree shall be accessible on the website www.VWCourtSettlement.com, and a
20 link to such website shall be displayed on www.vw.com and www.audiusa.com.
21

22 33. Each report or other item that is required by an Appendix to be certified pursuant
23 to this Paragraph shall be signed by an officer or director of Settling Defendants and shall
24 include the following sworn certification, which may instead be certified as provided in 28
25 U.S.C. § 1746:

26 I certify under penalty of perjury under the laws of the United States and California
27 that this document and all attachments were prepared under my direction or
28 supervision in accordance with a system designed to assure that qualified personnel
properly gather and evaluate the information submitted. Based on my inquiry of

1 the person or persons who manage the system, or those persons directly responsible
2 for gathering the information, the information submitted is, to the best of my
3 knowledge and belief, true, correct, and complete. I have no personal knowledge,
4 information or belief that the information submitted is other than true, correct, and
5 complete. I am aware that there are significant penalties for submitting false
6 information, including the possibility of fine and imprisonment for knowing
7 violations.

8 34. Settling Defendants agree that the certification required by Paragraph 33 is
9 subject to 18 U.S.C. §§ 1001(a) and 1621, and California Penal Code §§ 115, 118, and 132.

10 35. The certification requirement in Paragraph 33 does not apply to emergency or
11 similar notifications where compliance would be impractical.

12 36. The reporting requirements of this Consent Decree do not relieve Settling
13 Defendants of any reporting obligations required by the Act or implementing regulations, or by
14 any other federal, state, or local law, regulation, permit, or other requirement.

15 37. Any information provided pursuant to this Consent Decree may be used by the
16 United States or California in any proceeding to enforce the provisions of this Consent Decree
17 and as otherwise permitted by law.

18 **VII. STIPULATED PENALTIES AND OTHER MITIGATION TRUST PAYMENTS**

19 38. Settling Defendants shall be liable for stipulated penalties and additional
20 Mitigation Trust Payments (collectively, “stipulated payments”) to the United States and
21 California for violations of this Consent Decree as specified in this Section and the Appendices,
22 unless excused under Section VIII (Force Majeure). A violation includes failing to perform any
23 obligation required by the terms of this Decree, including any work plan or schedule approved
24 under this Decree, according to all applicable requirements of this Decree and within the
25 specified time schedules established by or approved under this Decree.

26 39. Partial Injunctive Relief Requirements: Appendices A, B, and C. The stipulated
27
28

1 payments and other remedies for violations of requirements of Appendices A, B, and C are set
2 forth in those Appendices.

3 40. Partial Injunctive Relief Requirements: Section IV.D. The following additional
4 Mitigation Trust Payments shall accrue for each violation of Section IV.D., as follows:
5

6 a. For the Initial Deposit of \$900,000,000 required by subparagraph 14.a, and for
7 each Subsequent Deposit (collectively, "Deposit") of \$900,000,000 required by
8 subparagraph 14.b:

9 i. For each Day that any such Deposit is late, Settling Defendants shall pay
10 into the Trust Account an additional Mitigation Trust Payment of interest, as
11 provided in Paragraph 43, on the Deposit for the first four days, and then as
12 follows:
13

14	\$50,000	5th through 30th Day
15	\$100,000	31st through 45th Day
16	\$200,000	46th Day and beyond

17 ii. The additional Mitigation Trust Payments required by subparagraph 40.a.i
18 are in addition to the Deposits required by subparagraphs 14.a and 14.b, and those
19 Deposits shall not be reduced on account of the payment of additional Mitigation
20 Trust Payments.
21

22 iii. For failure to execute and deliver the final Trust Agreement pursuant to
23 Paragraph 16, Settling Defendants shall pay the following payments per Day into
24 the Trust Account as additional Mitigation Trust Payments, plus interest on the
25 additional Mitigation Trust Payments as provided for in Paragraph 43.
26

27	\$100,000	1st through 14th Day
28	\$250,000	15th Day and beyond

b. In the event that no Trust Account has been established as of the date that any additional Mitigation Trust Payment required pursuant to subparagraphs 40.a.i or 40.a.iii become due, such payments shall be made into the Court Registry account in accordance with subparagraph 14.d.

41. Reporting and Certification Requirements: Section VI

a. Reporting of Violations. The following stipulated penalties shall accrue per violation per Day for each violation of the requirements of Paragraph 30 (Reporting of Violations):

\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond

b. Certification Requirements. The following stipulated penalties shall accrue per violation per Day for each violation of the certification requirements of Paragraph 33, except for false statements as described in subparagraph 41.c, below, in which case the stipulated penalty shall be the higher of the penalty provided for here in subparagraph 41.b or in subparagraph 41.c:

\$10,000	1st through 14th Day
\$25,000	15th through 30th Day
\$50,000	31st Day and beyond

c. False Statements. Settling Defendants shall pay \$1,000,000 for each report or Submission required to be submitted pursuant to this Consent Decree that contains a knowingly false, fictitious, or fraudulent statement or representation of material fact.

42. Stipulated payments under this Section shall begin to accrue on the Day after performance is due or on the Day a violation occurs, whichever is applicable, and shall continue

1 to accrue until performance is satisfactorily completed or until the violation ceases. Stipulated
2 payments shall accrue simultaneously for separate violations of this Consent Decree.

3 43. If Settling Defendants fail to pay stipulated penalties or the Mitigation Trust
4 Payments required by subparagraphs 14.a and 14.b according to the terms of this Consent
5 Decree, Settling Defendants shall be liable for interest on such payments at the rate provided for
6 in 28 U.S.C. § 1961, accruing as of the date payment became due and continuing until payment
7 has been made in full. Nothing in this Paragraph shall be construed to limit the United States or
8 California from seeking any remedy otherwise provided by law for Settling Defendants' failure
9 to pay any stipulated payments.
10

11
12 44. Stipulated Penalty Demands and Payments

13 a. Except as provided in Paragraph 46, the United States, in consultation with
14 CARB, will issue any demand for stipulated penalties.

15 b. Settling Defendants shall pay stipulated penalties to the United States/CARB
16 within 30 Days after a written demand by the United States and/or CARB, as
17 applicable, in accordance with Paragraphs 44.a or 46, unless Settling Defendants
18 invoke the dispute resolution procedures under Section IX (Dispute Resolution) within
19 the 30-Day period. Except as provided in Paragraph 46 and Appendix B, Settling
20 Defendants shall pay 75% percent of the total stipulated penalty amount due to the
21 United States and 25% percent to CARB.
22

23 45. Except as provided in Paragraph 46, either the United States or CARB may in the
24 unreviewable exercise of its discretion, reduce or waive stipulated penalties otherwise due it
25 under this Consent Decree. However, no action by either the United States or CARB may reduce
26 or waive stipulated penalties due to the other.
27
28

1 46. With respect to stipulated penalties for violations of the National ZEV Investment
2 requirements and the California ZEV Investment requirements (both as defined in Appendix C)
3 only the United States may demand, collect, reduce, or waive stipulated penalties with respect to
4 the National ZEV Investment requirements, and only CARB may demand, collect, reduce, or
5 waive stipulated penalties with respect to the California ZEV Investment requirements.
6

7 47. Stipulated payments shall continue to accrue as provided in Paragraph 42, during
8 any Dispute Resolution, but need not be paid until the following:

9 a. If the dispute is resolved by agreement of the Parties or by a decision of
10 EPA/CARB that is not appealed to the Court, Settling Defendants shall pay accrued
11 stipulated payments determined to be owing, together with interest as provided in
12 Paragraph 43, to the United States/CARB within 30 Days after the effective date of the
13 agreement or the receipt of EPA's/CARB's decision or order.
14

15 b. If the dispute is appealed to the Court and the United States/California
16 prevail(s) in whole or in part, Settling Defendants shall pay all accrued penalties
17 determined by the Court to be owing, together with interest as provided in Paragraph
18 43, to the United States/CARB within 60 Days after receiving the Court's decision or
19 order, except as provided in subparagraph c, below.
20

21 c. If any Party appeals the District Court's decision, Settling Defendants shall
22 pay to the United States/CARB all accrued penalties determined to be owing, together
23 with interest as provided in Paragraph 43, within 15 Days after receiving the final
24 appellate court decision.
25

26 48. Settling Defendants shall pay stipulated penalties owing to the United States by
27 FedWire Electronic Funds Transfer ("EFT") to the DOJ account, in accordance with instructions
28

1 provided to Settling Defendants by the Financial Litigation Unit (“FLU”) of the United States
2 Attorney’s Office for the Northern District of California after the Effective Date. The payment
3 instructions provided by the FLU will include a Consolidated Debt Collection System (“CDCS”)
4 number, which Settling Defendants shall use to identify all payments required to be made in
5 accordance with this Consent Decree. The FLU will provide the payment instructions to:

7 Head of Treasury of Volkswagen AG
8 Joerg Boche
9 Joerg.boche@volkswagen.de
011-49-5361-92-4184

10 on behalf of Settling Defendants. Settling Defendants may change the individual to receive
11 payment instructions on their behalf by providing written notice of such change to the United
12 States and CARB in accordance with Section XIII (Notices).

14 49. Settling Defendants shall pay stipulated penalties owing to CARB by check,
15 accompanied by a Payment Transmittal Form (which CARB will provide to the addressee listed
16 in Paragraph 48 after the Effective Date), with each check mailed to:

17 Air Resources Board, Accounting Branch
18 P.O. Box 1436
19 Sacramento, CA 95812-1436;

20 or by wire transfer, in which case Settling Defendants shall use the following wire transfer
21 information and send the Payment Transmittal Form to the above address prior to each wire
22 transfer:

23 State of California Air Resources Board
24 c/o Bank of America, Inter Branch to 0148
25 Routing No. 0260-0959-3 Account No. 01482-80005
26 Notice of Transfer: Yogeeta Sharma Fax: (916) 322-9612
Reference: ARB Case # MSES-15-085

27 Settling Defendants are responsible for any bank charges incurred for processing wire transfers.

28 Except as otherwise provided by this Consent Decree, stipulated penalties paid to CARB shall be

1 deposited into the Air Pollution Control Fund and used by CARB to carry out its duties and
2 functions.

3 50. At the time of payment, Settling Defendants shall send notice that a stipulated
4 payment has been made: (i) to EPA via email at cinwd_acctsreceivable@epa.gov or via regular
5 mail at EPA Cincinnati Finance Office, 26 W. Martin Luther King Drive, Cincinnati, Ohio
6 45268; (ii) to the DOJ via email or regular mail in accordance with Section XIII; and/or (iii) to
7 CARB via email or regular mail in accordance with Section XIII. Such notice shall state that the
8 payment is for stipulated penalties or Mitigation Trust Payments, as applicable, owed pursuant to
9 the Consent Decree in *In re Volkswagen "Clean Diesel" Marketing, Sales Practices, and*
10 *Products Liability Litigation*, and shall state for which violation(s) the penalties are being paid.
11 Such notice shall also reference MDL No. 2672 CRB (JSC), CDCS Number and DOJ # 90-5-2-
12 1-11386.
13

14
15 51. Settling Defendants shall not deduct any stipulated penalties paid under this
16 Decree pursuant to this Section in calculating their income taxes due to federal, state, or local
17 taxing authorities in the United States.
18

19 52. The payment of stipulated payments and interest, if any, shall not alter in any way
20 Settling Defendants' obligation to complete the performance of the requirements of this Consent
21 Decree.
22

23 53. Non-Exclusivity of Remedy. Stipulated payments and other remedies provided
24 for in the Consent Decree are not the United States' or California's exclusive remedy for
25 violations of this Consent Decree, including violations of the Consent Decree that are also
26 violations of law. Subject to the provisions in Section XI (Effect of Settlement/Reservation of
27 Rights), the United States and California reserve all legal and equitable remedies available to
28

1 enforce the provisions of this Consent Decree. In addition to the remedies specifically reserved
2 and those specifically agreed to elsewhere in this Consent Decree, the United States and
3 California expressly reserve the right to seek any other relief they deem appropriate for Settling
4 Defendants' violation of this Consent Decree, including but not limited to an action against
5 Settling Defendants for statutory penalties where applicable, additional injunctive relief,
6 mitigation or offset measures, contempt, and/or criminal sanctions. However, the amount of any
7 statutory penalty assessed for a violation of this Consent Decree (and payable to the United
8 States or to California, respectively) shall be reduced by an amount equal to the amount of any
9 stipulated penalty assessed and paid pursuant to this Consent Decree (to the United States or to
10 California, respectively) for the same violation.
11
12

13 **VIII. FORCE MAJEURE**

14 54. "Force majeure," for purposes of this Consent Decree, is defined as any event
15 arising from causes beyond the control of Settling Defendants, of any entity controlled by
16 Settling Defendants, or of Settling Defendants' contractors, that delays or prevents the
17 performance of any obligation under this Consent Decree despite Settling Defendants' best
18 efforts to fulfill the obligation. The requirement that Settling Defendants exercise "best efforts to
19 fulfill the obligation" includes using best efforts to anticipate any potential force majeure event
20 and best efforts to address the effects of any potential force majeure event (a) as it is occurring,
21 and (b) following the potential force majeure, such that the delay and any adverse effects of the
22 delay are minimized. "Force majeure" does not include Settling Defendants' financial inability
23 to perform any obligation under this Consent Decree.
24
25

26 55. If any event occurs or has occurred that may delay the performance of any
27 obligation under this Consent Decree, for which Settling Defendants intend or may intend to
28

1 assert a claim of force majeure, whether or not caused by a force majeure event, Settling
2 Defendants shall provide notice by email to EPA and CARB, within 7 Days of when Settling
3 Defendants first knew that the event might cause a delay. Within 14 Days thereafter, Settling
4 Defendants shall provide in writing to EPA and CARB an explanation and description of the
5 reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to
6 prevent or minimize the delay or the effect of the delay; a schedule for implementation of any
7 such measures; Settling Defendants' rationale for attributing such delay to a force majeure event
8 if it intends to assert such a claim; and a statement as to whether, in the opinion of Settling
9 Defendants, such event may cause or contribute to an endangerment to public health, welfare or
10 the environment. Settling Defendants shall include with any notice all available documentation
11 supporting the claim that the delay was attributable to a force majeure. Failure to comply with
12 the above requirements shall preclude Settling Defendants from asserting any claim of force
13 majeure for that event for the period of time of such failure to comply, and for any additional
14 delay caused by such failure. Settling Defendants shall be deemed to know of any circumstance
15 of which Settling Defendants, any entity controlled by Settling Defendants, or Settling
16 Defendants' contractors knew or should have known.

17
18
19
20 56. If EPA/CARB agree(s) that the delay or anticipated delay is attributable to a force
21 majeure event, the time for performance of the obligations under this Consent Decree that are
22 affected by the force majeure event will be extended by EPA/CARB for such time as is
23 necessary to complete those obligations. An extension of the time for performance of the
24 obligations affected by the force majeure event shall not, of itself, extend the time for
25 performance of any other obligation. EPA/CARB will notify Settling Defendants in writing of
26 the length of the extension, if any, for performance of the obligations affected by the force
27
28

1 majeure event.

2 57. If EPA/CARB do(es) not agree that the delay or anticipated delay has been or will
3 be caused by a force majeure event, EPA/CARB will notify Settling Defendants in writing of
4 its/their decision.

5
6 58. If Settling Defendants elect to invoke the dispute resolution procedures set forth
7 in Section IX (Dispute Resolution), it shall do so no later than 15 Days after receipt of
8 EPA's/CARB's notice. In any such proceeding, Settling Defendants shall have the burden of
9 demonstrating by a preponderance of the evidence that the delay or anticipated delay has been or
10 will be caused by a force majeure event, that the duration of the delay or the extension sought
11 was or will be warranted under the circumstances, that best efforts were exercised to avoid and
12 mitigate the effects of the delay, and that Settling Defendants complied with the requirements of
13 Paragraphs 54 and 55. If Settling Defendants carry this burden, the delay at issue shall be
14 deemed not to be a violation by Settling Defendants of the affected obligation of this Consent
15 Decree identified to EPA/CARB and the Court.

16
17
18 **IX. DISPUTE RESOLUTION**

19 59. Unless otherwise expressly provided for in this Consent Decree, the dispute
20 resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising
21 under or with respect to this Consent Decree. Failure by the Settling Defendants to seek
22 resolution of a dispute under this Section shall preclude Settling Defendants from raising any
23 such issue as a defense to an action by the United States or California to enforce any obligation
24 of Settling Defendants arising under this Decree.

25
26 60. Informal Dispute Resolution. Any dispute subject to dispute resolution under this
27 Consent Decree shall first be the subject of informal negotiations. The dispute shall be
28

1 considered to have arisen when Settling Defendants send the United States and California by
2 mail a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute,
3 including, where applicable, whether the dispute arises from a decision made by EPA and CARB
4 jointly, or EPA or CARB individually. The period of informal negotiations shall not exceed 30
5 Days after the date the dispute arises, unless that period is modified by written agreement. If the
6 Parties cannot resolve a dispute by informal negotiations, then the position advanced by the
7 United States/California shall be considered binding unless, within 30 Days after the conclusion
8 of the informal negotiation period, Settling Defendants invoke formal dispute resolution
9 procedures as set forth below.
10
11

12 61. Formal Dispute Resolution. Settling Defendants shall invoke formal dispute
13 resolution procedures, within the time period provided in the preceding Paragraph, by serving on
14 the United States/California a written Statement of Position regarding the matter in dispute,
15 except that disputes concerning the National ZEV Investment or California ZEV Investment
16 need only be served on the United States or California, as applicable. The Statement of Position
17 shall include, but need not be limited to, any factual data, analysis, or opinion supporting Settling
18 Defendants' position and any supporting documentation relied upon by Settling Defendants.
19

20 62. The United States/California will serve its/their Statement of Position within 45
21 Days after receipt of Settling Defendants' Statement of Position. The United States'/California's
22 Statement of Position will include, but need not be limited to, any factual data, analysis, or
23 opinion supporting that position and any supporting documentation relied upon by the United
24 States/California. The United States'/California's Statement of Position shall be binding on
25 Settling Defendants, unless Settling Defendants file a motion for judicial review of the dispute in
26 accordance with Paragraph 63.
27
28

1 63. Settling Defendants may seek judicial review of the dispute by filing with the
2 Court and serving on the United States/California, in accordance with Section XIII (Notices), a
3 motion requesting judicial resolution of the dispute. The motion must be filed within 20 Days
4 after receipt of the United States'/California's Statement of Position pursuant to the preceding
5 Paragraph. The motion shall contain a written statement of Settling Defendants' position on the
6 matter in dispute, including any supporting factual data, analysis, opinion, or documentation, and
7 shall set forth the relief requested and any schedule within which the dispute must be resolved
8 for orderly implementation of the Consent Decree.
9

10 64. The United States/California will respond to Settling Defendants' motion within
11 the time period allowed by the Local Rules of the Court. Settling Defendants may file a reply
12 memorandum, to the extent permitted by the Local Rules.
13

14 65. Standard of Review for Judicial Disputes

15 a. Disputes Concerning Matters Accorded Record Review. In any dispute
16 arising under (1) Appendix B, or (2) Appendix C relating to agency approval of ZEV
17 Investment Plans, and brought pursuant to Paragraph 63, Settling Defendants shall
18 have the burden of demonstrating that EPA's/CARB's action or determination or
19 position is arbitrary and capricious or otherwise not in accordance with law based on
20 the administrative record. For purposes of this subparagraph, EPA/CARB will
21 maintain an administrative record of the dispute, which will contain all statements of
22 position, including supporting documentation, submitted pursuant to this Section.
23 Prior to the filing of any motion, the Parties may submit additional materials to be part
24 of the administrative record pursuant to applicable principles of administrative law.
25

26 b. Other Disputes. Except as otherwise provided in this Consent Decree, in any
27
28

1 other dispute brought pursuant to Paragraph 63, Settling Defendants shall bear the
2 burden of demonstrating by a preponderance of the evidence that their actions were in
3 compliance with this Consent Decree.

4
5 66. In any disputes brought under this Section, it is hereby expressly acknowledged
6 and agreed that this Consent Decree was jointly drafted in good faith by the United States,
7 California, and Settling Defendants. Accordingly, the Parties hereby agree that any and all rules
8 of construction to the effect that ambiguity is construed against the drafting party shall be
9 inapplicable in any dispute concerning the terms, meaning, or interpretation of this Consent
10 Decree.

11
12 67. The invocation of dispute resolution procedures under this Section shall not, by
13 itself, extend, postpone, or affect in any way any obligation of Settling Defendants under this
14 Consent Decree, unless and until final resolution of the dispute so provides. Stipulated penalties
15 with respect to the disputed matter shall continue to accrue from the first Day of noncompliance,
16 but payment shall be stayed pending resolution of the dispute as provided in Paragraph 47. If
17 Settling Defendants do not prevail on the disputed issue, stipulated penalties shall be assessed
18 and paid as provided in Section VII (Stipulated Penalties and Other Mitigation Trust Payments).

19
20 **X. INFORMATION COLLECTION AND RETENTION**

21
22 68. The United States, California, and their representatives, including attorneys,
23 contractors, and consultants, shall have the right of entry, upon presentation of credentials, at all
24 reasonable times into any of Settling Defendants' offices, plants, or facilities:

- 25 a. to monitor the progress of activities required under this Consent Decree;
26 b. to verify any data or information submitted to the United States or California
27
28 in accordance with the terms of this Consent Decree;

- 1 c. to inspect records related to this Consent Decree;
- 2 d. to conduct testing related to this Consent Decree;
- 3 e. to obtain documentary evidence, including photographs and similar data,
- 4 related to this Consent Decree;
- 5
- 6 f. to assess Settling Defendants' compliance with this Consent Decree; and
- 7 g. for other purposes as set forth in 42 U.S.C. § 7542(b) and Cal. Gov't Code §
- 8 11180.

9 69. Upon request, and for purposes of evaluating compliance with the Consent
10 Decree, Settling Defendants shall promptly provide to EPA and California or their authorized
11 representatives at locations to be designated by EPA and California:

- 13 a. vehicles, in specified configurations, for emissions testing;
- 14 b. engine control units for vehicles of specified configurations;
- 15 c. specified software and related documentation for vehicles of specified
- 16 configurations;
- 17
- 18 d. reasonable requests for English translations of software documents; or
- 19 e. other items or information that could be requested pursuant to 42 U.S.C.
- 20 § 7542(a) or Cal. Gov't Code § 11180.

21 70. Until three years after the termination of this Consent Decree, Settling Defendants
22 shall retain, and shall instruct their contractors and agents to preserve, all non-identical copies of
23 all documents, records, reports, or other information (including documents, records, or other
24 information in electronic form) (hereinafter referred to as "Records") in their or their contractors'
25 or agents' possession or control, or that come into their or their contractors' or agents' possession
26 or control, relating to Settling Defendants' performance of their obligations under this Consent
27
28

1 Decree. This information-retention requirement shall apply regardless of any contrary corporate
2 or institutional policies or procedures. At any time during this information-retention period,
3 upon request by the United States or California, Settling Defendants shall provide copies of any
4 Records required to be maintained under this Paragraph, notwithstanding any limitation or
5 requirement imposed by foreign laws. Nothing in this Paragraph shall apply to any documents in
6 the possession, custody, or control of any outside legal counsel retained by Settling Defendants
7 in connection with this Consent Decree or of any contractors or agents retained by such outside
8 legal counsel solely to assist in the legal representation of Settling Defendants. Settling
9 Defendants may assert that certain Records are privileged or protected as provided under federal
10 or California law. If Settling Defendants assert such a privilege or protection, they shall provide
11 the following: (a) the title of the Record; (b) the date of the Record; (c) the name and title of each
12 author of the Record; (d) the name and title of each addressee and recipient; (e) a description of
13 the subject of the Record; and (f) the privilege or protection asserted by Settling Defendants.
14 However, Settling Defendants may make no claim of privilege or protection regarding: (1) any
15 data regarding the Subject Vehicles or compliance with this Consent Decree; or (2) the portion of
16 any Record that Settling Defendants are required to create or generate pursuant to this Consent
17 Decree.
18
19
20
21

22 71. At the conclusion of the information-retention period provided in the preceding
23 Paragraph, Settling Defendants shall notify the United States and California at least 90 Days
24 prior to the destruction of any Records subject to the requirements of the preceding Paragraph
25 and, upon request by the United States or California, Settling Defendants shall deliver any such
26 Records to EPA or California. Settling Defendants may assert that certain Records are
27 privileged or protected as provided under federal or California law. If Settling Defendants assert
28

1 such a privilege or protection, they shall provide the following: (a) the title of the Record; (b) the
2 date of the Record; (c) the name and title of each author of the Record; (d) the name and title of
3 each addressee and recipient; (e) a description of the subject of the Record; and (f) the privilege
4 or protection asserted by Settling Defendants. However, Settling Defendants may make no claim
5 of privilege or protection regarding: (1) any data regarding the Subject Vehicles or compliance
6 with this Consent Decree; or (2) the portion of any Record that Settling Defendants are required
7 to create or generate pursuant to this Consent Decree.
8

9 72. Settling Defendants may also assert that information required to be provided
10 under this Section is protected as CBI as defined in Paragraph VI.29. As to any information that
11 Settling Defendants seek to protect as CBI, Settling Defendants shall follow the procedures set
12 forth in 40 C.F.R. Part 2 or equivalent California law.
13

14 73. This Consent Decree in no way limits or affects any right of entry and inspection,
15 or any right to obtain information, held by the United States or California pursuant to applicable
16 federal or state laws, regulations, or permits, nor does it limit or affect any duty or obligation of
17 Settling Defendants to maintain Records imposed by applicable federal or state laws, regulations,
18 or permits.
19

20 **XI. EFFECT OF SETTLEMENT/RESERVATION OF RIGHTS**
21

22 74. Satisfaction of all the requirements of this Partial Consent Decree shall resolve
23 and settle all of the United States' and California's civil claims in the Complaints for injunctive
24 relief, based on facts that were disclosed by Settling Defendants to EPA and CARB prior to
25 April 18, 2016 relating to any defeat devices or auxiliary emission control devices ("AECDS") in
26 the 2.0 Liter Subject Vehicles, that they made or could have made against Settling Defendants:
27

28 a. requiring Settling Defendants to take action to buy back, recall, or modify the

1 2.0 Liter Subject Vehicles in order to remedy the violations alleged in the Complaints
2 concerning the 2.0 Liter Subject Vehicles;

3 b. requiring Settling Defendants to make payments to owners and lessees of the
4 2.0 Liter Subject Vehicles in order to remedy the violations alleged in the Complaints
5 concerning the 2.0 Liter Subject Vehicles; and
6

7 c. requiring Settling Defendants to mitigate the environmental harm associated
8 with the violations alleged in the Complaints concerning the 2.0 Liter Subject
9 Vehicles.
10

11 75. The United States reserves, and this Partial Consent Decree is without prejudice
12 to, all claims, rights, and remedies against Settling Defendants with respect to all matters not
13 expressly resolved in Paragraph 74. Notwithstanding any other provision of this Decree, the
14 United States reserves all claims, rights, and remedies against Settling Defendants with respect
15 to:
16

17 a. Further injunctive relief, including prohibitory and mandatory injunctive
18 provisions intended to enjoin, prevent, and deter future violations of the Act of the
19 types alleged in the U.S. Complaint related to the 2.0 Liter Subject Vehicles;

20 b. All rights to address noncompliance with Appendix B as set forth in
21 Paragraph 8.1 of Appendix B;
22

23 c. All rights reserved by Paragraph 53;

24 d. Civil penalties with respect to the 2.0 Liter Subject Vehicles;

25 e. Any and all civil claims related to any 3.0 Liter Subject Vehicle or to any
26 other vehicle other than the 2.0 Liter Subject Vehicles;
27

28 f. Any and all civil claims and administrative authorities for injunctive relief: (i)

1 based on facts that were not disclosed by Settling Defendants to EPA and CARB prior
2 to April 18, 2016, related to any defeat devices or AECs installed on or in the 2.0
3 Liter Subject Vehicles; or (ii) related to any other failures by the 2.0 Liter Subject
4 Vehicles to conform with the Act or its implementing regulations;

5
6 g. Any criminal liability; and

7 h. Any claim(s) of any agency of the United States, other than EPA, including
8 but not limited to claims by the Federal Trade Commission.

9
10 76. California reserves, and this Partial Consent Decree is without prejudice to, all
11 claims, rights, and remedies against Settling Defendants with respect to all matters not expressly
12 resolved in Paragraph 74. Notwithstanding any other provision of this Decree, California
13 reserves all claims, rights, and remedies against Settling Defendants with respect to:

14 a. An order requiring Settling Defendants to take all actions necessary to enjoin,
15 prevent, and deter future violations of the Health and Safety Code and related
16 regulations of the types alleged in the California Complaint related to the 2.0 Liter
17 Subject Vehicles;

18
19 b. Further injunctive relief, including prohibitory and mandatory injunctive
20 provisions intended to enjoin, prevent, and deter future misconduct, and/or incentivize
21 its detection, disclosure, and/or prosecution; or to enjoin false advertising, violation of
22 environmental laws, the making of false statements, or the use or employment of any
23 practice that constitutes unfair competition;

24
25 c. All rights to address noncompliance with Appendix B as set forth in Appendix
26 B, Paragraph 8.1;

27
28 d. All rights reserved by Paragraph 53;

1 e. Civil penalties with respect to the 2.0 Liter Subject Vehicles;

2 f. Any and all civil claims related to any 3.0 Liter Subject Vehicle, or to any
3 vehicle other than the 2.0 Liter Subject Vehicles;

4 g. Any and all civil claims and administrative authorities for injunctive relief (i)
5 based on facts that were not disclosed by Settling Defendants to EPA and CARB prior
6 to April 18, 2016, related to any defeat devices or AECs installed on or in the 2.0
7 Liter Subject Vehicles; or (ii) related to any other failures by the 2.0 Liter Subject
8 Vehicles to conform with the California Health and Safety Code or its implementing
9 regulations;
10

11 h. Any criminal liability;

12 i. Any part of any claims for the violation of securities or false claims laws;

13 j. Costs and attorneys' fees, including investigative costs, incurred after the
14 Effective Date; and
15

16 k. Any other claim(s) of any officer or agency of the State of California, other
17 than CARB or CA AG.
18

19 77. CA AG releases its claims against Settling Defendants and VW Credit, Inc. for
20 relief to consumers, including claims for restitution, refunds, rescission, damages, and
21 disgorgement, arising from the conduct alleged in the California Complaint related to the 2.0
22 Liter Subject Vehicles. In exchange for this release of claims for relief to consumers, Settling
23 Defendants shall provide the relief to consumers provided for in this Consent Decree, as well as
24 the relief to consumers provided for in the related FTC Order and Class Action Settlement
25 concerning the 2.0 Liter Subject Vehicles. The requirements of this paragraph are enforceable
26 by the CA AG. This paragraph does not release any claims of individual consumers.
27
28

1 78. By entering into this Consent Decree, the United States and California are not
2 enforcing the laws of other countries, including the emissions laws or regulations of any
3 jurisdiction outside the United States. Nothing in this Consent Decree is intended to apply to, or
4 affect, Settling Defendants' obligations under the laws or regulations of any jurisdiction outside
5 the United States. At the same time, the laws and regulations of other countries shall not affect
6 the Settling Defendants' obligations under this Consent Decree.
7

8 79. This Consent Decree shall not be construed to limit the rights of the United States
9 or California to obtain penalties or injunctive relief under the Act or implementing regulations,
10 or under other federal or state laws, regulations, or permit conditions, except as specifically
11 provided in Paragraph 74. The United States and California further reserve all legal and
12 equitable remedies to address any imminent and substantial endangerment to the public health or
13 welfare or the environment arising at any of Settling Defendants' facilities, or posed by Settling
14 Defendants' 2.0 Liter Subject Vehicles, whether related to the violations addressed in this
15 Consent Decree or otherwise.
16
17

18 80. In any subsequent administrative or judicial proceeding initiated by the United
19 States or California for injunctive relief, civil penalties, other appropriate relief relating to
20 Settling Defendants' violations, Settling Defendants shall not assert, and may not maintain, any
21 defense or claim based upon the principles of waiver, res judicata, collateral estoppel, issue
22 preclusion, claim preclusion, claim-splitting, or other defenses based upon any contention that
23 the claims raised by the United States or California in the subsequent proceeding were or should
24 have been brought in the instant case, except with respect to the claims that have been
25 specifically resolved pursuant to Paragraph 74.
26
27

28 81. This Consent Decree is not a permit, or a modification of any permit, under any

1 federal, State, or local laws or regulations. Settling Defendants are responsible for achieving and
2 maintaining complete compliance with all applicable federal, State, and local laws, regulations,
3 and permits; and Settling Defendants' compliance with this Consent Decree shall be no defense
4 to any action commenced pursuant to any such laws, regulations, or permits, except as set forth
5 herein. The United States and California do not, by their consent to the entry of this Consent
6 Decree, warrant or aver in any manner that Settling Defendants' compliance with any aspect of
7 this Consent Decree will result in compliance with provisions of the Act, or with any other
8 provisions of United States, State, or local laws, regulations, or permits.
9

10
11 82. This Consent Decree does not limit or affect the rights of Settling Defendants or
12 of the United States or California against any third parties, not party to this Consent Decree, nor
13 does it limit the rights of third parties, not party to this Consent Decree, against Settling
14 Defendants, except as otherwise provided by law.

15
16 83. This Consent Decree shall not be construed to create rights in, or grant any cause
17 of action to, any third party not party to this Consent Decree.

18 **XII. COSTS**

19 84. The Parties shall bear their own costs of this Consent Decree, including attorneys'
20 fees, except that the United States and California shall be entitled to collect the costs and
21 reasonable attorneys' fees incurred in any action necessary to collect any portion of the stipulated
22 penalties due under this Consent Decree but not paid by Settling Defendants.
23

24 **XIII. NOTICES**

25 85. Except as specified elsewhere in this Decree, whenever any Materials are required
26 to be submitted pursuant to this Consent Decree, or whenever any communication is required in
27 any action or proceeding related to or bearing upon this Consent Decree or the rights or
28

1 obligations thereunder, they shall be submitted with a cover letter or otherwise be made in
2 writing (except that if any attachment is voluminous, it shall be provided on a disk, hard drive, or
3 other equivalent successor technology), and shall be addressed as follows:
4

5 As to the United States: DOJ and EPA at the email or mail addresses
6 below, as applicable

7 As to DOJ by mail: EES Case Management Unit
8 Environment and Natural Resources
9 Division
10 U.S. Department of Justice
11 P.O. Box 7611
12 Washington, D.C. 20044-7611
13 Re: DJ # 90-5-2-1-11386

14 As to DOJ by overnight mail: Chief
15 Environmental Enforcement Section
16 Environment and Natural Resources
17 Division
18 U.S. Department of Justice
19 601 D St. NW
20 Washington, D.C. 20004

21 As to DOJ by email: eescdcopy.enrd@usdoj.gov
22 Re: DJ # 90-5-2-1-11386

23 As to EPA by mail: Director
24 Air Enforcement Division
25 Office of Civil Enforcement
26 U.S. Environmental Protection Agency
27 1200 Pennsylvania Avenue NW
28 3142 William Jefferson Clinton South
Mail Code 2242A
Washington, D.C. 20460

As to EPA by email
(including for Paragraphs 31, 55): Kaul.Meetu@epa.gov
Kakade.Seema@epa.gov
Iddings.Brianna@epa.gov

1 As to California: CARB and CA AG at the email or mail
2 addresses below, as applicable

3 As to CARB by email (including for
4 Paragraphs 31, 55): Alexandra.Kamel@arb.ca.gov

5 As to CARB by mail: Chief Counsel
6 California Air Resources Board
7 Legal Office
8 1001 I Street
9 Sacramento, California 95814

10 As to CA AG by email: nicklas.akers@doj.ca.gov
11 judith.fiorentini@doj.ca.gov
12 david.zonana@doj.ca.gov

13 As to CA AG by mail: Senior Assistant Attorney General
14 Consumer Law Section
15 California Department of Justice
16 455 Golden Gate Ave., Suite 11000
17 San Francisco, CA 94102-7004

18 Senior Assistant Attorney General
19 Environment Section
20 Office of the Attorney General
21 P.O. Box 944255
22 Sacramento, CA 94244-2550

23 As to Volkswagen AG by mail: Volkswagen AG
24 Berliner Ring 2
25 38440 Wolfsburg, Germany
26 Attention: Company Secretary

27 With copies to each of the following:

28 Volkswagen AG
Berliner Ring 2
38440 Wolfsburg, Germany
Attention: Group General Counsel

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: U.S. General Counsel

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

As to Audi AG by mail:

Audi AG
Auto-Union-Straße 1
85045 Ingolstadt, Germany
Attention: Company Secretary

With copies to each of the following:

Volkswagen AG
Berliner Ring 2
38440 Wolfsburg, Germany
Attention: Group General Counsel

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: U.S. General Counsel

As to Volkswagen Group of
America, Inc. by mail:

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: Company Secretary

With copies to each of the following:

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: President

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: U.S. General Counsel

As to Volkswagen Group of America
Chattanooga Operations, LLC by mail:

Volkswagen Group of America
Chattanooga Operations, LLC
8001 Volkswagen Dr.
Chattanooga, TN 37416
Attention: Company Secretary

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

With copies to each of the following:

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: President

Volkswagen Group of
America, Inc.
2200 Ferdinand Porsche Dr.
Herndon, VA 20171
Attention: U.S. General Counsel

As to one or more of the Settling
Defendants by email:

Robert J. Giuffra, Jr.
Sharon L. Nelles
giuffrar@sullcrom.com
nelless@sullcrom.com

As to one or more of the Settling
Defendants by mail:

Robert J. Giuffra, Jr.
Sharon L. Nelles
Sullivan & Cromwell LLP
125 Broad Street
New York, New York 10004

86. Any Party may, by written notice to the other Parties, change its designated notice recipient or notice address provided above.

87. Communications submitted pursuant to this Section shall be deemed submitted upon mailing (or emailing if that is an option), except as provided elsewhere in this Consent Decree or by mutual agreement of the Parties in writing.

88. The Parties anticipate that a non-public secure web-based electronic portal may be developed in the future for submission of Materials. The Parties may agree in the future to use such a portal, or any other means, for submission of Materials. Any such agreement shall be approved as a non-material modification to the Decree in accordance with Paragraphs 91-92.

XVII. TERMINATION

1
2 94. After Settling Defendants have completed the requirements of Section IV (Partial
3 Injunctive Relief), except for Appendix A, Paragraph 5.2 (No End Date for Emissions
4 Modification Recall) and associated requirements, have complied with all other requirements of
5 this Consent Decree, and have paid any accrued stipulated penalties as required by this Consent
6 Decree, Settling Defendants may serve upon the United States and California a Request for
7 Termination, stating that Settling Defendants have satisfied those requirements, together with all
8 necessary supporting documentation.
9

10
11 95. Following receipt by the United States and California of Settling Defendants’
12 Request for Termination, the Parties shall confer informally concerning the Request and any
13 disagreement that the Parties may have as to whether Settling Defendants have satisfactorily
14 complied with the requirements for termination of this Consent Decree. If the United States,
15 after consultation with California, agrees that the Decree may be terminated, the United States
16 will file a motion to terminate the Decree, provided, however, that the provisions associated with
17 effectuating and enforcing Appendix A, Paragraph 5.2 (No End Date for Emissions Modification
18 Recall) shall continue in full force and effect indefinitely.
19

20 96. If the United States, after consultation with California, does not agree that the
21 Decree may be terminated, Settling Defendants may invoke Dispute Resolution under Section
22 IX. However, Settling Defendants shall not seek Dispute Resolution of any dispute regarding
23 termination until 45 Days after service of their Request for Termination.
24

XVIII. PUBLIC PARTICIPATION

25
26 97. This Consent Decree shall be lodged with the Court for a period of not less than
27 30 Days for public notice and comment in accordance with 28 C.F.R. § 50.7. The United States
28

1 reserves the right to withdraw or withhold its consent if the comments regarding the Consent
2 Decree disclose facts or considerations indicating that the Consent Decree is inappropriate,
3 improper, or inadequate. California reserves the right to withdraw or withhold its consent if the
4 United States does so. Settling Defendants consent to entry of this Consent Decree without
5 further notice and agree not to withdraw from or oppose entry of this Consent Decree by the
6 Court or to challenge any provision of the Decree, unless the United States has notified Settling
7 Defendants in writing that it no longer supports entry of the Decree.
8

9
10 **XIX. SIGNATORIES/SERVICE**

11 98. Each undersigned representative of Settling Defendants and California, and the
12 Assistant Attorney General for the Environment and Natural Resources Division of the DOJ
13 certifies that he or she is fully authorized to enter into the terms and conditions of this Consent
14 Decree and to execute and legally bind the Party he or she represents to this document.

15 99. This Consent Decree may be signed in counterparts, and its validity shall not be
16 challenged on that basis. For purposes of this Consent Decree, a signature page that is
17 transmitted electronically (*e.g.*, by facsimile or e-mailed “PDF”) shall have the same effect as an
18 original.
19

20 **XX. INTEGRATION**

21 100. This Consent Decree constitutes the final, complete, and exclusive agreement and
22 understanding among the Parties with respect to the settlement embodied in the Decree and
23 supersedes all prior agreements and understandings, whether oral or written, concerning the
24 settlement embodied herein. Other than deliverables that are subsequently submitted and
25 approved pursuant to this Decree, the Parties acknowledge that there are no documents,
26 representations, inducements, agreements, understandings, or promises that constitute any part of
27
28

1 this Decree or the settlement it represents other than those expressly contained in this Consent
2 Decree.

3 **XXI. FINAL JUDGMENT**

4 101. Upon approval and entry of this Consent Decree by the Court, this Consent
5 Decree shall constitute a final judgment of the Court as to the United States, California, and
6 Settling Defendants. The Court finds that there is no just reason for delay and therefore enters
7 this judgment as a final judgment under Fed. R. Civ. P. 54 and 58.
8

9 **XXII. APPENDICES**

10 102. The following Appendices (and any attachments thereto) are attached to and
11 part of this Consent Decree:

12 “Appendix A” is the Buyback, Lease Termination, and Vehicle Modification Recall Program.

13 “Appendix B” is the Vehicle Recall and Emissions Modification Program.

14 “Appendix C” is the ZEV Investment Commitment.

15 “Appendix D” is the Form of Environmental Mitigation Trust Agreement.
16
17
18
19
20

21 Dated and entered this ___ day of _____, 2016,
22

23 _____
24 CHARLES R. BREYER
25 UNITED STATES DISTRICT JUDGE
26
27
28

1 FOR THE UNITED STATES OF AMERICA:

2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

29 June 2016
Date



JOHN C. CRUDEN
Assistant Attorney General
Environment and Natural Resources Division
U.S. Department of Justice



JOSHUA H. VAN EATON
BETHANY ENGEL
GABRIEL ALLEN
LESLIE ALLEN
PATRICK BRYAN
NIGEL COONEY
KAREN DWORKIN
DANICA GLASER
ANNA GRACE
SHEILA McANANEY
MARCELLO MOLLO
ROBERT MULLANEY
ERIKA ZIMMERMAN
IVA ZIZA
Environmental Enforcement Section
Environment and Natural Resources Division
United States Department of Justice
P.O. Box 7611
Washington, D.C. 20044-7611
Telephone: (202) 514-5474
Facsimile: (202) 514-0097
josh.van.eaton@usdoj.gov
bethany.engel@usdoj.gov

Counsel for the United States

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

FOR THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

6/24/16
Date

[Redacted]

CYNTHIA GILES
Assistant Administrator
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

[Redacted]

SUSAN SHINKMAN
Director, Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

[Redacted]

PHILLIP A. BROOKS
Director, Air Enforcement Division, Office of Civil
Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

[Redacted]

EVAN BELSER
MEETU KAUL
SEEMA KAKADE
BRIANNA IDDINGS
Air Enforcement Division
Office of Civil Enforcement
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

1 FOR THE PEOPLE OF THE STATE OF CALIFORNIA BY AND THROUGH THE
2 CALIFORNIA AIR RESOURCES BOARD AND KAMALA D. HARRIS, ATTORNEY
GENERAL OF THE STATE OF CALIFORNIA:

3
4 6/27/16

5 Date



NICKLAS A. AKERS (CA-211222)
Senior Assistant Attorney General
California Department of Justice
455 Golden Gate Ave, Suite 11000
San Francisco, CA 94102-7004
Telephone: (415) 703-5500
E-mail: nicklas.akers@doj.ca.gov

10 KAMALA D. HARRIS
11 Attorney General of California
12 NICKLAS A. AKERS
13 ROBERT W. BYRNE
14 SALLY MAGNANI
15 Senior Assistant Attorneys General
16 JUDITH A. FIORENTINI
17 GAVIN G. McCABE
18 DAVID A. ZONANA
19 Supervising Deputy Attorneys General
20 AMOS E. HARTSTON
21 WILLIAM R. PLETCHER
22 ELIZABETH B. RUMSEY
23 JOHN S. SASAKI
24 JON F. WORM
25 Deputy Attorneys General

Attorneys for the People of the State of California

1 FOR THE CALIFORNIA AIR RESOURCES BOARD:

2 6/26/16

3 _____
4 Date

[REDACTED]
MARY D. NICHOLS
Chair
California Air Resources Board
1001 I Street
Sacramento CA 95814

[REDACTED]
RICHARD W. COREY
Executive Officer
California Air Resources Board
1001 I Street
Sacramento CA 95814

[REDACTED]
ELLEN M. PETER
Chief Counsel
D. ARON LIVINGSTON
Assistant Chief Counsel
DIANE KIYOTA
ALEXANDRA KAMEL
Attorneys, Legal Office
California Air Resources Board
1001 I Street
Sacramento CA 95814

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

FOR VOLKSWAGEN AG:

Date: June 24, 2016


/s/ Francisco Javier Garcia Sanz
FRANCISCO JAVIER GARCIA SANZ
VOLKSWAGEN AG
P.O. Box 1849
D-38436 Wolfsburg, Germany

Date: June 24, 2016


MANFRED DOESS
VOLKSWAGEN AG
P.O. Box 1849
D-38436 Wolfsburg, Germany

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

FOR AUDI AG:



Date: June 24, 2016

/s/ Francisco Javier Garcia Sanz
FRANCISCO JAVIER GARCIA SANZ
VOLKSWAGEN AG
P.O. Box 1849
D-38436 Wolfsburg, Germany



Date: June 24, 2016

MANFRED DOESS
VOLKSWAGEN AG
P.O. Box 1849
D-38436 Wolfsburg, Germany

1 FOR VOLKSWAGEN GROUP OF AMERICA, INC.:

2

3

4

5

Date: June 24, 2016

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28



DAVID DETWEILER
VOLKSWAGEN GROUP OF AMERICA, INC.
2200 Ferdinand Porsche Drive
Herndon, Virginia 20171

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

FOR VOLKSWAGEN GROUP OF AMERICA CHATTANOOGA OPERATIONS, LLC:

Date: June ~~24~~, 2016



DAVID DETWEILER
VOLKSWAGEN GROUP OF AMERICA, INC.
2200 Ferdinand Porsche Drive
Herndon, Virginia 20171

1 COUNSEL FOR VOLKSWAGEN AG, AUDI AG, VOLKSWAGEN GROUP OF AMERICA,
2 INC., AND VOLKSWAGEN GROUP OF AMERICA CHATTANOOGA OPERATIONS, LLC

3
4
5
6 Date: June ~~24~~, 2016



7 ROBERT J. GIUFFRA, JR.
8 SHARON L. NELLES
9 STEVEN L. HOLLEY
10 SULLIVAN & CROMWELL LLP
11 125 Broad Street
12 New York, New York 10004
13 Telephone: (212) 558-4000
14 Facsimile: (212) 558-3358
15 giuffrar@sullcrom.com
16 nelless@sullcrom.com
17
18
19
20
21
22
23
24
25
26
27
28

**APPENDIX A
BUYBACK LEASE TERMINATION
AND VEHICLE MODIFICATION RECALL PROGRAM**

APPENDIX A

**BUYBACK, LEASE TERMINATION,
AND VEHICLE MODIFICATION RECALL PROGRAM**

I. PURPOSE

The purpose of this Buyback, Lease Termination, and Vehicle Modification Recall Program (“Recall Program”) is to remove 2.0 Liter Subject Vehicles that emit nitrogen oxides (“NO_x”) in excess of applicable standards from the roads and highways of the United States pursuant to EPA’s and CARB’s respective authorities under the Clean Air Act (“CAA”) and the California Health and Safety Code (“CHSC”). In order to achieve this CAA and CHSC remedy, EPA/CARB require Settling Defendants to offer the Buyback or the Lease Termination, as defined below, for 100% of the non-compliant vehicles under terms described herein. In addition, if approved by EPA/CARB, Settling Defendants may, consistent with the provisions in Appendix B of this Consent Decree, modify such vehicles to substantially reduce their NO_x emissions in accordance with standards established by the agencies.

This Recall Program establishes the enforceable rules by which Settling Defendants shall make offers to Eligible Owners and Eligible Lessees of Eligible Vehicles to repurchase, cancel leases for, or modify such vehicles. Under this Recall Program and subject to the requirements contained in Section VI of this Appendix A, Settling Defendants shall remove from commerce and/or perform an Approved Emissions Modification on at least 85% of all 2.0 Liter Subject Vehicles no later than June 30, 2019 (“Recall Rate”). If Settling Defendants fail to achieve the required 85% Recall Rate, Settling Defendants shall pay additional funds to the Environmental Mitigation Trust established pursuant to Appendix D to this Consent Decree, as described more fully below.

II. DEFINITIONS

2.1 Terms used in this Appendix A shall have the meanings set forth below. Terms that are not defined below but are defined in Section III (Definitions) of the Consent Decree including any of its Appendices shall have the meanings set forth therein.

2.2 “2.0 Liter Subject Vehicle” shall have the same meaning as is used in the Consent Decree. The term “Eligible Vehicles” used in this Appendix A refers only to a subset of 2.0 Liter Subject Vehicles.

2.3 “Approved Emissions Modification” shall have the same meaning as is used in Appendix B of this Consent Decree.

2.4 “Buyback” shall mean the return of an Eligible Vehicle by an Eligible Owner to Settling Defendants, under terms and in accordance with a process to be established by Settling Defendants consistent with this Appendix A, in exchange for a payment that equals or exceeds the Retail Replacement Value.

2.5 “Class Action Settlement” shall mean the Consumer Class Action Settlement Agreement and Release filed in this action, *In re Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation*, MDL No. 2672 (N.D. Cal.), by the attorneys representing owners and lessees of Eligible Vehicles on June 28, 2016. If the Court approves the proposed Consumer Class Action Settlement Agreement and Release, “Class Action Settlement” shall refer to that agreement as and in the form it is ultimately approved and entered by the Court.

2.6 “Eligible Lessee” shall mean the current lessee or lessees of an Eligible Vehicle with a lease issued by VW Credit, Inc. No person shall be considered an Eligible Lessee by virtue of holding a lease issued by a lessor other than VW Credit, Inc.

2.7 “Eligible Owner” means the registered owner or owners of an Eligible Vehicle on the day the Eligible Vehicle is sold to Settling Defendants for the Buyback or receives an Approved Emissions Modification, except that the owner of an Eligible Vehicle who had an active lease issued by VW Credit, Inc. as of September 18, 2015, and purchased the previously leased Eligible Vehicle after June 28, 2016, shall not be an Eligible Owner. For avoidance of doubt, an Eligible Owner ceases to be an Eligible Owner if he or she transfers ownership of the Eligible Vehicle to a third party on or after June 28, 2016; and a third party who acquires ownership of an Eligible Vehicle on or after June 28, 2016, thereby becomes an Eligible Owner if that third party otherwise meets the definition of an Eligible Owner. Subject to the definition of Eligible Owner in the FTC Order, an owner of an Eligible Vehicle will not qualify as an Eligible Owner while the Eligible Vehicle is under lease to any third party, although any such owner, including any leasing company other than VW Credit, Inc., who otherwise meets the definition of an Eligible Owner would become an Eligible Owner if such lease has been canceled or terminated and the owner has taken possession of the vehicle.

2.8 “Eligible Vehicle” means any 2.0 Liter Subject Vehicle that is: (1) listed in the table immediately below this Paragraph; (2) registered with a state Department of Motor Vehicles or equivalent agency or held by a dealer not affiliated with Settling Defendants and located in the United States as of June 28, 2016; and (3) Operable as of the date the vehicle is brought in for the Buyback, the Lease Termination, or Approved Emissions Modification.

Model Year	EPA Test Group	Make and Model(s)
2009	9VWXV02.035N	VW Jetta, VW Jetta SportWagen
2009	9VWXV02.0U5N	VW Jetta, VW Jetta SportWagen
2010	AVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta SportWagen, Audi A3
2011	BVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta SportWagen, Audi A3
2012	CVWXV02.0U5N	VW Golf, VW Jetta, VW Jetta SportWagen, Audi A3
2012	CVWXV02.0U4S	VW Passat
2013	DVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta SportWagen, Audi A3
2013	DVWXV02.0U4S	VW Passat

2014	EVWXV02.0U5N	VW Beetle, VW Beetle Convertible, VW Golf, VW Jetta, VW Jetta SportWagen
2014	EVWXV02.0U4S	VW Passat
2015	FVGAV02.0VAL	VW Beetle, VW Beetle Convertible, VW Golf, VW Golf SportWagen, VW Jetta, VW Passat, Audi A3

2.9 “FTC Order” shall mean the Proposed Partial Stipulated Order for Permanent Injunction and Monetary Judgment filed in this action, *In re Volkswagen “Clean Diesel” Marketing, Sales Practices, and Products Liability Litigation*, MDL No. 2672 (N.D. Cal.), by the Federal Trade Commission on June 28, 2016. If the Court approves the Proposed Partial Stipulated Order for Permanent Injunction and Monetary Judgment, “FTC Order” shall refer to that Order as and in the form it is ultimately approved and entered by the Court.

2.10 “Operable” means that a vehicle so described can be driven under its own 2.0-liter TDI engine power. A vehicle is not Operable if it had a branded title of “Assembled,” “Dismantled,” “Flood,” “Junk,” “Rebuilt,” “Reconstructed,” or “Salvaged” as of September 18, 2015, and was acquired by any person or entity from a junkyard or salvaged after September 18, 2015.

2.11 “Lease Termination” shall mean the return of an Eligible Vehicle by an Eligible Lessee to Settling Defendants, under terms and in accordance with a process to be established by Settling Defendants consistent with this Appendix A.

2.12 “Modified Vehicle” shall mean a 2.0 Liter Subject Vehicle that has received an Approved Emissions Modification.

2.13 “Retail Replacement Value” shall mean, for a given Eligible Vehicle, the cost of retail purchase of a comparable replacement vehicle of similar value, condition, and mileage as of September 17, 2015.

2.14 “Recall Program” shall mean the Buyback, Lease Termination, and Vehicle Modification Recall Program established pursuant to this Appendix A.

III. NOTICES

3.1 Notice Regarding the Recall Program: No later than ten (10) Days after the Effective Date, Settling Defendants shall send or cause to be sent by First-Class, postage paid U.S. mail to all Eligible Owners and Eligible Lessees known to Settling Defendants notice of the Recall Program and a complete description of Eligible Owners and Eligible Lessees’ rights thereunder. Such notice must satisfy the requirements of either subparagraph 3.1.1 or 3.1.2 below.

3.1.1 Class Action Settlement Notice. Settling Defendants may satisfy their obligation under Paragraph 3.1 by sending to Eligible Owners and Eligible Lessees a Court-approved Class Action Settlement Notice as part of the Class Action Settlement if such notice is approved by the Court before the Effective Date of this Consent Decree and if EPA/CARB do not require Settling Defendants to distribute an alternative notice pursuant to subparagraph 3.1.2 below.

3.1.2 Review and Approval of Alternative Notice. If Settling Defendants do not send to Eligible Owners and Eligible Lessees a Court-approved Class Action Settlement Notice in accordance with subparagraph 3.1.1 above, or if Settling Defendants are advised by EPA/CARB at any time before July 15, 2016, that Settling Defendants must submit to the agencies a proposed Recall Program notice different from the Class Action Settlement Notice, Settling Defendants shall, no later than August 15, 2016, submit to the United States and California a proposed notice together with a proposed plan for disseminating such notice to owners and lessees for review and approval in accordance with Section V of the Consent Decree.

3.1.3 Publication Notice. In addition to any notice that is mailed to Eligible Owners and Eligible Lessees under the requirements of this Section III of this Appendix A, Settling Defendants shall, no later than ten (10) Days after the Effective Date, also provide notice of the Recall Program to Eligible Owners and Eligible Lessees via a publication notice that is published in national newspapers and periodicals. Settling Defendants may satisfy this obligation by publishing a Class Action Settlement publication notice if such notice is approved by the Court before the Effective Date of this Consent Decree and if EPA/CARB do not require Settling Defendants to publish an alternative publication notice pursuant to subparagraph 3.1.4 below.

3.1.4 Review and Approval of Alternative Publication Notice. If Settling Defendants do not publish a Court-approved Class Action Settlement publication notice in accordance with subparagraph 3.1.3 above, or if Settling Defendants are advised by EPA/CARB at any time before July 15, 2016, that Settling Defendants must submit to EPA/CARB a proposed publication notice different from the Class Action Settlement publication notice, Settling Defendants shall, no later than August 15, 2016, submit to the United States and California a proposed publication notice together with a proposed plan for publishing such notice in national newspapers and periodicals for review and approval in accordance with Section V of the Consent Decree.

3.2 Future Emissions Modification Notice: If, with respect to any Test Group or combination of Test Groups, EPA/CARB issue a notice of Approved Emissions Modification in accordance with Appendix B of this Consent Decree, Settling Defendants shall provide by First-Class, postage paid U.S. mail to all affected Eligible Owners and Eligible Lessees known to Settling Defendants, notice of the availability of the Approved Emissions Modification within ten (10) Days of receiving the EPA/CARB notice. The notice sent to affected Eligible Owners and Eligible Lessees (“Approved Emissions Modification Disclosure”) shall be in a form and include the disclosures approved by EPA/CARB at the time EPA/CARB approve the Proposed Emissions Modification pursuant to the terms of Appendix B to this Consent Decree. Settling Defendants shall also include in the mailing the applicable Extended Emissions Warranty for the Eligible Vehicle, as approved by EPA/CARB.

3.2.1 Contents of the Emissions Modification Notice and Extended Emissions Warranty. The Approved Emissions Modification Disclosure and approved Extended Emissions Warranty shall contain all disclosures required in Section 4.3.8 of Appendix B to this Consent Decree and any other disclosures required by law. EPA/CARB may reject any proposed notice and require changes to any proposed notice that does not contain a clear and accurate written disclosure regarding all impacts of the Approved Emissions Modification on the vehicle. Any notice issued in connection with an Approved Emissions Modification shall also make clear that

the affected Eligible Owner or Eligible Lessee alternatively has a right to participate in the Buyback or Lease Termination options described in Section IV of this Appendix A.

3.2.2 Online Access to the Emissions Modification Notice. The Approved Emissions Modification Disclosure shall also be made available online on a public website by Settling Defendants within two (2) business days of EPA/CARB approval of the Proposed Emissions Modification. The website shall display the Approved Emissions Modification Disclosure and approved Extended Emissions Warranty applicable to a specific vehicle when a user inputs the vehicle VIN. This online access to the Approved Emissions Modification Disclosure and approved Extended Emissions Warranty shall continue for a minimum of ten (10) years after the Consent Decree is entered.

3.2.3 Notice of Non-Availability of an Emissions Modification. If Settling Defendants (a) receive from EPA/CARB a Final Notice of Disapproval of Proposed Emissions Modification; (b) withdraw any application for an Approved Emissions Modification; or (c) decline to submit any such application, Settling Defendants shall, within ten (10) Days of receiving the notice of disapproval or withdrawing or declining to submit the relevant application, notify affected Eligible Owners and Eligible Lessees by First-Class, postage paid U.S. mail that the Proposed Emissions Modification for the affected Eligible Vehicles is not available. Settling Defendants shall also, within two (2) business days of receiving the notice of disapproval or withdrawing or declining to submit the relevant application, post a notice of the non-availability online at the public website Settling Defendants use to administer the Recall Program. Any such notice issued to affected Eligible Owners and Eligible Lessees as well as any such notice published online shall also make clear that the affected Eligible Owners and Eligible Lessees have a right to accept the Buyback or the Lease Termination offers described in Section IV of this Appendix.

3.3 Subsequent Notices: Nothing in this Consent Decree or its Appendices shall prevent Settling Defendants from issuing subsequent notices or taking additional measures to inform Eligible Owners or Eligible Lessees of the Recall Program, provided, however, that Settling Defendants may not provide any notice or additional information regarding the Recall Program that is inconsistent with or contradictory to the notices required by Paragraph 3.1, and any notice or additional information must conform to the disclosures that are approved by EPA/CARB in connection with an Approved Emissions Modification. Settling Defendants shall provide a copy of any subsequent consumer notices regarding the Recall Program that they provide to Eligible Owners or Eligible Lessees to the Court-appointed Claims Supervisor described in Paragraph 7.3 of this Appendix, and to EPA, CARB, and CA AG in accordance with Section XIII of the Consent Decree (Notices) as part of Settling Defendants' reports required by Paragraph 7.4 of this Appendix and shall provide any such subsequent consumer notices regarding the Recall Program to CA AG at the time such notices are distributed to affected Eligible Owners or Eligible Lessees.

3.4 Dealer Notice: No later than ten (10) Days after the Effective Date, Settling Defendants shall provide to authorized Volkswagen and Audi dealerships in the United States a notice describing dealers' obligations under the Recall Program. Settling Defendants shall also provide notice of the Recall Program to independent Volkswagen or Audi dealerships in the United States with which Settling Defendants have a business relationship. Settling Defendants may satisfy their obligation under this Paragraph by sending or causing to be sent to authorized Volkswagen and Audi dealerships in the United States the FTC Dealer Notice pursuant to the FTC Order. If Settling Defendants do not satisfy

their obligation under this Paragraph by sending or causing to be sent the FTC Dealer Notice, Settling Defendants shall, no later than ten (10) Days after the Effective Date, submit to EPA/CARB a proposed Dealer Notice for review and approval in accordance with Section V of this Consent Decree.

3.5 Notice Regarding Termination of the Recall Program: Settling Defendants may not withdraw any Buyback or Lease Termination offer associated with the Recall Program or terminate the Recall Program with regard to any vehicle model or engine Test Group unless notice of the Recall Program termination date with regard to the particular vehicle(s) has been submitted to the United States in accordance with Section XIII of the Consent Decree (Notices) at least six (6) months in advance. Settling Defendants shall also give notice of Recall Program termination to all affected Eligible Owners and Eligible Lessees who have not participated in the Buyback, Lease Termination, or Approved Emissions Modification at least 180 Days before Program termination. Settling Defendants may satisfy their obligation to notify Eligible Owners and Eligible Lessees under this Paragraph 3.5 by complying with Paragraph VI.H. of the FTC Order (“Reminder Notice”).

IV. BUYBACK AND LEASE TERMINATION

4.1 Buyback Recall: Beginning no later than fifteen (15) Days after the Effective Date of the Consent Decree, Settling Defendants shall offer, and if accepted provide, each Eligible Owner of an Eligible Vehicle the Buyback, as defined in Paragraph 2.4, of the Eligible Vehicle at no less than the Retail Replacement Value. For purposes of the Buyback, the consumer payments required by the FTC Order and the Class Action Settlement are equal to or in excess of the Retail Replacement Value, and Settling Defendants’ offer of buybacks and fulfilment of their buyback obligations under the FTC Order and Class Action Settlement satisfies the requirements of this Paragraph 4.1. Settling Defendants agree and acknowledge that their obligations under this EPA/CARB Consent Decree are independent of the FTC Order and Class Action Settlement. Thus, if for any reason the Settling Defendants do not perform their buyback obligations under the FTC Order and Class Action Settlement, or if the Court does not enter those agreements, Settling Defendants must still offer and provide the Buyback as required by this Paragraph.

4.2 Early Termination of Leases Recall: Beginning no later than fifteen (15) Days after Effective Date of the Consent Decree, Settling Defendants shall offer the Lease Termination to each Eligible Lessee of an Eligible Vehicle, upon return of the Eligible Vehicle. Any Lease Termination offer shall include full cancellation of the remaining terms of the lease with no financial or other penalty or cost. Settling Defendants shall pay any amounts necessary to accomplish the return of the vehicle without penalty to the Eligible Lessee, including, without limitation, early termination fees owed to third parties, except for fees for excess wear and use and excess mileage at the point of vehicle surrender, and other amounts due such as late payment fees, tickets, tolls, etc.

4.3 Duration of Buyback and Lease Termination Recall Offers: The Buyback and the Lease Termination recall offers required by Paragraphs 4.1 and 4.2 of this Appendix shall be available to Eligible Owners and Eligible Lessees beginning no later than fifteen (15) Days after the Effective Date of the Consent Decree, and the Buyback and the Lease Termination portions of the Recall Program shall remain open until at least two years after the Effective Date.

V. EMISSIONS MODIFICATION

5.1 Emissions Modification Recall: No later than fifteen (15) Days after Settling Defendants receive from EPA/CARB notice of the Approved Emissions Modification for one or more Test Groups pursuant to the terms of Appendix B of this Consent Decree, Settling Defendants shall offer to Eligible Owners and Eligible Lessees of the applicable Eligible Vehicles an Approved Emissions Modification in accordance with the terms approved by EPA/CARB.

5.1.1. No Incurred Costs. Settling Defendants, their agents, contractors, dealers, successors, or assigns shall provide the Approved Emissions Modification free of charge to all Eligible Owners and Eligible Lessees. Although Settling Defendants need not provide any consumer payment to any person eligible to participate in the Class Action Settlement who elects not to do so, Settling Defendants must provide an Approved Emissions Modification to any Eligible Owner or Eligible Lessee regardless of such participation.

5.1.2. No Release of Private Party Claim Solely for Approved Emissions Modification. Settling Defendants may not require any release of liability for any legal claims or arbitration of any claim that an Eligible Owner or Eligible Lessee may have against Settling Defendants or any other person solely in exchange for receiving an Approved Emissions Modification.

5.2 No End Date for Emissions Modification Recall: Once an emissions modification is approved by EPA/CARB pursuant to Appendix B and is offered to Eligible Owners or Eligible Lessees in accordance with Paragraph 5.1, such modification offer shall remain available to all Eligible Owners or Eligible Lessees of an Eligible Vehicle within the applicable Test Group or Test Groups indefinitely and shall remain subject to the conditions in subparagraphs 5.1.1, 5.1.2, 5.3.1, and the label requirements in subparagraph 5.3.5 of this Appendix A. In accordance with Paragraph 95 of the Consent Decree, the requirements contained in this Paragraph 5.2 shall continue in full force and effect after Termination of the Decree. Settling Defendants may move for Termination of the Decree pursuant to the requirements of Consent Decree Section XVII even though the obligations of this Paragraph 5.2 shall remain in place.

5.3 Additional Requirements for Emissions Modification.

5.3.1 Warranty. 2.0 Liter Subject Vehicles receiving the Approved Emissions Modification shall qualify for a warranty as described in Appendix B (the “Warranty”).

5.3.2 Warranty Remedies. In addition to any protections provided by law (including those referenced in subparagraph 5.3.3 below), Settling Defendants must reoffer and provide a Buyback or Lease Termination to any Eligible Owner or Eligible Lessee of a Modified Vehicle in the event that, during the 18 months or 18,000 miles following the completion of the Approved Emissions Modification (the “Reoffer Period”), Settling Defendants fail to repair or remedy a confirmed mechanical failure or malfunction covered by the Warranty and associated with the Approved Emissions Modification (a “Warrantable Failure”) after the Eligible Owner or Eligible Lessee physically presents the Modified Vehicle to a dealer for repair of the Warrantable Failure; and (1) the Warrantable Failure is unable to be remedied after making four separate service visits for the same Warrantable Failure during the Reoffer Period; or (2) the Modified Vehicle with the Warrantable Failure is out of service due to the Warrantable Failure for a cumulative total of 30 Days during the Reoffer Period. (For avoidance of doubt, a Modified

Vehicle shall not be deemed “out of service” when, after diagnosing the Warrantable Failure, the dealer returns or tenders the Modified Vehicle to the customer while the dealer awaits necessary parts for the Warrantable Failure, and the Modified Vehicle remains Operable.) In such a case, the Eligible Owner or Eligible Lessee shall receive the payments that he or she would have received under the Buyback or the Lease Termination at the time the Eligible Owner or Eligible Lessee first requested the Approved Emissions Modification less any payment amounts already received. No Eligible Owner or Eligible Lessee shall receive double-recovery of any portion of any payment. Settling Defendants shall, as part of their reporting obligations in Paragraph 7.4 below, notify EPA/CARB and CA AG when any Eligible Owner or Eligible Lessee participates in the Buyback or the Lease Termination under this subparagraph 5.3.2.

5.3.3 Preservation of Remedies. The Warranty shall be subject to any remedies provided by state or federal laws, such as the Magnuson-Moss Warranty Act, that provide consumers with protections, including without limitation “Lemon Law” protections, with respect to warranties.

5.3.4 No Defense. Except in an action alleging noncompliance with the terms of the Consent Decree, nothing in this Consent Decree or its Appendices may be cited as a defense to liability arising out of the Approved Emissions Modification.

5.3.5 Disclosure to Subsequent Purchasers. For each Modified Vehicle that receives the Approved Emissions Modification, Settling Defendants shall affix to the vehicle the applicable label approved by EPA/CARB in accordance with Appendix B. Settling Defendants shall also provide subsequent purchasers of Modified Vehicles the applicable Monroney fuel economy label for the vehicle as specified in Appendix B of this Consent Decree. In addition, Settling Defendants shall make available online a searchable Emissions Modification Database by which users, including potential purchasers, may conduct a free-of-charge search by vehicle VIN to determine whether the Approved Emissions Modification has been applied to a specific vehicle. This online access to the searchable Emissions Modification Database shall continue for a minimum of ten (10) years after the Effective Date of the Consent Decree.

VI. RECALL RATE

6.1 Recall Rate Target: By no later than June 30, 2019, Settling Defendants shall remove from commerce in the United States and/or perform an Approved Emissions Modification on at least 85% of those 2.0 Liter Subject Vehicles that existed as of September 17, 2015, as defined below (“National Recall Target” for the “National Recall Rate”). Additionally, by June 30, 2019, Settling Defendants shall remove from commerce in California and/or perform an Approved Emissions Modification on at least 85% of those 2.0 Liter Subject Vehicles registered in California that existed as of September 17, 2015, as defined below (“California Recall Target” for the “California Recall Rate”). Settling Defendants shall receive credit toward the National Recall Target (and for California vehicles, the California Recall Target) for every Buyback, Lease Termination, or Approved Emissions Modification of a 2.0 Liter Subject Vehicle that Settling Defendants execute prior to June 30, 2019, as well as any 2.0 Liter Subject Vehicle that is scrapped or otherwise permanently removed from commerce between September 17, 2015 and June 30, 2019, provided that no 2.0 Liter Subject Vehicle may be counted more than once. For purposes of this Paragraph, the total number of 2.0 Liter Subject Vehicles is 487,532 (499,406 vehicles less scrapped vehicles as of October 1, 2015 of 11,874). For

purposes of this Paragraph, the total number of all 2.0 Liter Subject Vehicles registered in California is 70,814.

6.2 Approved Emissions Modification for Generation 3: With respect to Generation 3 vehicles as that term is defined in Appendix B, Settling Defendants shall only receive credit toward the National Recall Target and the California Recall Target for vehicles that receive, prior to June 30, 2019, a required Subsequent Service Action, as that term is defined in Appendix B.

6.3 Consequences of Failing to Meet Recall Target: If, by June 30, 2019, Settling Defendants fail to achieve the 85% Recall Rate Targets required by Paragraph 6.1, Settling Defendants shall make additional contributions (“Mitigation Trust Payments”) to the Environmental Mitigation Trust established pursuant to Appendix D of this Consent Decree. Such additional Mitigation Trust Payments shall be as follows:

6.3.1. National Mitigation Trust Payment. For failure to reach the National Recall Target, Settling Defendant shall contribute to the Environmental Mitigation Trust \$85,000,000 for each 1% that the National Recall Rate falls short of the National Recall Target. In calculating any payment required under this subparagraph, the National Recall Rate shall be rounded to the nearest half percentage point. Any payments to the Environmental Mitigation Trust made pursuant to this subparagraph shall be used pursuant to the terms of Appendix D exclusively to fund environmental mitigation projects outside California.

6.3.2. California Mitigation Trust Payment. For failure to reach the California Recall Target, Settling Defendant shall contribute to the Environmental Mitigation Trust \$13,500,000 for each 1% that the California Recall Rate falls short of the California Recall Rate Target. In calculating any payment required under this subparagraph, the California Recall Rate shall be rounded to the nearest half percentage point. Any payments to the Environmental Mitigation Trust made pursuant to this subparagraph shall be used pursuant to the terms of Appendix D exclusively to fund environmental mitigation projects in California.

6.4 Payment Schedule for Additional Mitigation Payments: All Mitigation Trust Payments made pursuant to this section shall be made to the Trust Account in the manner set forth in Appendix D and shall be made no later than July 31, 2019, together with interest as provided for in 28 U.S.C. § 1961.

VII. OTHER PROVISIONS

7.1 No Prohibition on Other Incentives: Nothing in this Appendix A is intended to prohibit Settling Defendants from offering an Eligible Owner or Eligible Lessee any further incentives or trade-in options in addition to those provided herein; however, Settling Defendants may not offer Eligible Owners or Eligible Lessees other incentives or trade-in options *in lieu* of the options contained herein, in whole or in part, or any incentive not to participate in those options.

7.2 Disposition of Vehicles.

7.2.1. Vehicles Rendered Inoperable. All Eligible Vehicles returned to Settling Defendants through the Recall Program shall be rendered inoperable by removing the vehicle’s

Engine Control Unit (“ECU”) and may be, to the extent possible, recycled to the extent permitted by law. No Eligible Vehicle that is rendered inoperable may subsequently be rendered operable except as allowed by and in compliance with subparagraph 7.2.3 below and Appendix B of this Consent Decree.

7.2.2. Limitation on Scrapping of Vehicles. Returned Eligible Vehicles and 2.0 Liter Subject Vehicles may be salvaged for parts, and such parts may be sold in the United States or exported, provided, however, that in no event may the ECU, diesel oxidation catalyst, or diesel particulate filter be salvaged, resold, or exported.

7.2.3. Sale and Export of Returned Vehicles. Notwithstanding the requirements of subparagraphs 7.2.1 and 7.2.2 above, Settling Defendants may elect to resell or sell any returned Eligible Vehicle or any 2.0 Liter Subject Vehicle in the United States, provided, however, that Settling Defendants first modify the particular vehicle in accordance with the applicable Approved Emissions Modification, label such vehicle, and provide the Approved Emissions Modification Disclosure, Warranty, and Warranty Remedies as provided in Paragraph 5.3 above to prospective purchasers, and meet the other requirements for resale of returned vehicles set forth in Appendix B. Settling Defendants may not export or arrange for the export of 2.0 Liter Subject Vehicles, unless such vehicle has been modified in accordance with the applicable Approved Emissions Modification pursuant to the terms of Appendix B of this Consent Decree.

7.2.4. Disposition of Vehicles without an Approved Emissions Modification. In the event that there is no Approved Emissions Modification for a particular class of 2.0 Liter Subject Vehicles (either because a Proposed Emissions Modification was disapproved by EPA/CARB, or because Settling Defendants withdrew or failed to submit an application for an Approved Emissions Modification), such vehicles may only be disposed of consistent with the requirements of subparagraphs 7.2.1 and 7.2.2 above.

7.3 Claims Supervisor: The Recall Program is subject to oversight by a Court-appointed Claims Supervisor as required by the FTC Order. As noted and required in the FTC Order, the Claims Supervisor shall submit regular reports to EPA/CARB.

7.4 Reporting: Settling Defendants shall provide EPA, CARB, and the CA AG with status reports on the Buyback, Lease Termination, and Vehicle Modification Recall Program. Such status reports shall be certified in accordance with the requirements of Paragraph 33 of the Consent Decree and shall include, at a minimum, the following elements:

7.4.1. A review of Settling Defendants’ progress toward reaching the Recall Rate targets required by Section VI of this Appendix A;

7.4.2. Each Eligible Vehicle, listed by VIN, model and year, reacquired by Settling Defendants and the date of such reacquisition;

7.4.3. Each Eligible Vehicle, listed by VIN, model and year, that has been resold, exported, rendered inoperable, or destroyed and the date of such resale, export, rendering, or destruction;

7.4.4. Each Eligible Vehicle, listed by VIN, model and year, that has received an Approved Emissions Modification and the date of such modification;

7.4.5. A compilation of all notices widely distributed to Eligible Owners or Eligible Lessees since the last report submitted by Settling Defendants under this Paragraph including email notices and any updates to the claims administration website;

7.4.6. Each 2.0 Liter Subject Vehicle, listed by VIN, model and year, that is not an Eligible Vehicle and that has been removed from commerce and/or has received an Approved Emissions Modification;

7.4.7. A summary or copy of all bulletins, notices, or other similar communications sent to authorized Volkswagen and Audi dealerships regarding the Recall Program, including information regarding Warranties and Warranty Remedies provided to dealerships.

7.4.8. The first report shall be due by the end of the month following the end of the quarter in which the Consent Decree is entered by the Court (i.e., January 31st, April 30th, July 31st, and October 31st, as applicable). Thereafter each subsequent report shall be due at the end of the month following the end of each quarter, with the final report due July 31, 2019. After one year following the beginning of the Recall Program, Settling Defendants may submit such reports on a semi-annual basis together with any other reports required by this Consent Decree. Additionally, Settling Defendants shall provide the EPA, CARB, and the CA AG with any documents, accounting, or other information related to Volkswagen's compliance within 30 Days of the request by the agencies, or longer with the requesting party's agreement.

7.4.9. Settling Defendants' obligation to submit reports under this Paragraph 7.4 and its subparagraphs shall not continue beyond July 31, 2019, provided however, that nothing in this subparagraph 7.4.9 alters or affects Settling Defendants' obligation to submit reports pursuant to subparagraph 7.2.8 of Appendix B for five (5) years following the Effective Date of the Consent Decree.

7.5 No Attorneys' Fees or Costs: To the extent Settling Defendants elect to pay private attorneys' fees or costs, Settling Defendants will not receive credit for such payments against obligations to Eligible Owners or Eligible Lessees required under this Consent Decree or its Appendices.

7.6 Total Available Recall Program Funds: Settling Defendants' total funding pool available to satisfy the requirements of the Buyback, Lease Termination, and Vehicle Modification Recall Program, as well as any consumer payments made in connection with the FTC Order or the Class Action Settlement, shall be \$10,033,000,000, based on an assumed 100% consumer participation rate, and an assumed 100% Buyback of purchased Eligible Vehicles, and an assumed 100% Lease Termination of leased Eligible Vehicles. Any unspent funds will revert to Settling Defendants upon the completion of the Class Action Settlement program.

VIII. DISPUTE RESOLUTION AND STIPULATED PENALTIES

8.1 Dispute Resolution: All disputes between a) Settling Defendants; and b) the United States and/or CARB and/or the California Attorney General's Office shall be addressed in the manner

set forth in Section IX (Dispute Resolution) of the Consent Decree. With respect to any dispute under this Appendix A, in any judicial proceeding conducted pursuant to the dispute resolution procedures set forth in the Consent Decree, Settling Defendants shall bear the burden of demonstrating by a preponderance of the evidence that their actions were in compliance with this Appendix A.

8.2 Stipulated Penalties: The following Stipulated Penalties shall be applicable in connection with this Appendix A. All Stipulated Penalties required by this Paragraph 8.2 shall be paid in accordance with the requirements of Section VII (Stipulated Penalties and Other Mitigation Trust Payments) of the Consent Decree.

8.2.1. Failure to Make Required Payments. If Settling Defendants fail to transmit the full amount of any Buyback payment within fifteen (15) Days following the later of: (1) the Day an Eligible Vehicle is surrendered by an Eligible Owner or Eligible Lessee; or (2) the Day that the Claims Review Committee described in the Class Action Settlement determines that payment is owing and due, Settling Defendants shall pay the following Stipulated Penalty: \$8,000 per affected Eligible Vehicle.

8.2.2. Failure to Timely Initiate Recall Program Offer. If Settling Defendants fail to timely initiate any offer of the Buyback, Lease Termination, or Approved Emissions Modification to all applicable Eligible Owners and applicable Eligible Lessees as required by Paragraphs 4.1, 4.2, or 5.1 (that is, if Settling Defendants fail to initiate offers of the Buyback or the Lease Termination within 15 Days of the Effective Date, or fail to initiate offers of Approved Emissions Modification within 15 Days of modification approval), unless such time is extended in writing by EPA/CARB, Settling Defendants shall pay the following Stipulated Penalty for each Day the offer is delayed:

\$10,000	1st through 14th Day
\$25,000	15th through 30th Day
\$50,000	31st Day and beyond

8.2.3. Failure to Submit Reports or Notices. If Settling Defendants fail to timely submit any report required by Paragraph 7.4 or any notice required by Paragraphs 3.1, 3.2, 3.4 or 3.5 of this Appendix A, the following Stipulated Penalties shall apply for each Day that such Report or Notice is not submitted:

\$2,000	1st through 14th Day
\$5,000	15th through 30th Day
\$10,000	31st Day and beyond

In no event shall Settling Defendants be required to pay stipulated penalties for the same conduct under this subparagraph 8.2.3 and Paragraph 41 of the Consent Decree.

8.2.4. Early Termination of Recall Program. If Settling Defendants prematurely terminate the Recall Program with respect to any class of Eligible Vehicle or Vehicles, Settling Defendants shall pay the following Stipulated Penalty per Day.

\$50,000	1st through 14th Day
\$100,000	15th through 30th Day
\$200,000	31st Day and beyond

8.2.5. Unauthorized Waiver or Release. If Settling Defendants require any release of liability for any legal claims that an Eligible Owner or Eligible Lessee may have against Settling Defendants or any other person solely in exchange for receiving an Approved Emissions Modification, Settling Defendants shall pay the following Stipulated Penalty: \$10,000 per affected Eligible Vehicle.

8.2.6. Failure to Make Mitigation Payments. If Settling Defendants fail to timely make any Mitigation Trust Payments required by Paragraph 6.3 to be paid no later than July 31, 2019, the following Stipulated Penalties shall apply for each Day the required payment is not submitted:

\$50,000	1st through 14th Day
\$100,000	15th through 30th Day
\$200,000	31st Day and beyond

8.2.7. Misleading Notices or Advertisements. If Settling Defendants provide any materially misleading or inaccurate notice to any Eligible Owner or Eligible Lessee regarding the individual owner or lessee’s rights, right to payment, or available remedies under the Recall Program, Settling Defendants shall have 30 Days to correct such notice after EPA, CARB, or the CA AG advise Settling Defendants that the notice is materially misleading or inaccurate. If Settling Defendants fail to correct the notice within 30 Days, the following stipulated penalty shall apply per Day the notice is not corrected:

\$10,000	1st through 14th Day
\$25,000	15th through 30th Day
\$50,000	31st Day and beyond

8.2.8. Failure to Properly Dispose of Returned Vehicle. If Settling Defendants improperly dispose of or export any returned vehicle in violation of the requirements of Paragraph 7.2 or sell, re-sell or cause to be sold or re-sold any 2.0 Liter Subject Vehicle that has not received an Approved Emissions Modification, Settling Defendants shall pay the following Stipulated Penalty: \$10,000 per affected 2.0 Liter Subject Vehicle. In no event shall Settling Defendants be required to pay stipulated penalties under subparagraph 8.2.3 of Appendix B of this Consent Decree if a stipulated penalty under this subparagraph 8.2.8 is demanded for the same conduct.

**APPENDIX B
VEHICLE RECALL AND
EMISSIONS MODIFICATION PROGRAM**

APPENDIX B

VEHICLE RECALL AND EMISSIONS MODIFICATION PROGRAM

I. PURPOSE

This Appendix B establishes how Settling Defendants shall submit Proposed Emissions Modifications, and how the United States Environmental Protection Agency (“EPA”) and the California Air Resources Board (“CARB”) (collectively, “EPA and CARB” or “EPA/CARB”) will approve or disapprove any such proposal, should Settling Defendants choose, at their election, to submit a Proposed Emissions Modification. Settling Defendants must comply with the requirements of this Appendix B. No Emissions Modification may be performed by, or on behalf of, Settling Defendants unless and until EPA/CARB approve the applicable Proposed Emissions Modification. Following approval, any Emissions Modification performed by, or on behalf of, Settling Defendants must conform to the applicable Approved Emissions Modification and the requirements set forth herein.

If Settling Defendants submit a Proposed Emissions Modification according to the terms of this Appendix B, and EPA/CARB determine the proposal satisfies the requirements set forth herein, then EPA/CARB will approve that Proposed Emissions Modification. EPA/CARB will issue decisions, including decisions concerning the approval or disapproval of Proposed Emissions Modifications, in accordance with the definitions and decision-making authorities set forth in Section V of the Consent Decree (Approval of Submissions and EPA/CARB Decisions). EPA/CARB will review any proposal according to this Appendix B, rather than according to the regulatory processes for reviewing applications for Certificates of Conformity, Executive Orders, or administrative recalls; provided, however, except as otherwise expressly stated herein, the applicable regulatory calculation methods, test procedures, protocols, processes, or procedures shall apply unless an alternative approach is approved by the agencies.

II. DEFINITIONS

2.1 Terms used in this Appendix B shall have the meanings set forth below. Terms that are not defined below but are defined in Section IV (Definitions) of the Consent Decree shall have the meaning set forth therein.

2.2 “20° F FTP” means the FTP conducted at 20° Fahrenheit, as specified in 40 C.F.R. Part 1066 Subpart H.

2.3 “2014 Reflash” means the modification of Generation 1 and Generation 2 2.0 Liter Subject Vehicles in 2014 and 2015.

2.4 “Approved Emissions Modification” means an Emissions Modification submitted by Settling Defendants and approved by EPA/CARB.

2.5 “Auxiliary Emission Control Device” or “AECD” has the meaning set forth in 40 C.F.R. § 86.1803-01.

2.6 “AT” means automatic transmission.

2.7 “Calibration” means a specific parameterization of the ECU software that determines how various processes in engine and exhaust aftertreatment are controlled under many different operating conditions. A common example of a process is fuel injection (timing and quantity) under different engine loads and ambient conditions. The term “Calibration” can also be used synonymously for the act of setting the parameters of the ECU software.

2.8 “Critical OBD Demonstration” means the minimum set of OBD emission demonstration tests, pursuant to Cal. Code. Regs. tit. 13, § 1968.2(h) (2013), that must be completed and included in Part B of the Proposed Emissions Modification. For Generation 1, the minimum set of tests includes: PM filter efficiency, NO_x trap, EGR low flow, and injection quantity minimum for automatic transmission vehicles only. For Generation 2, the minimum set of tests includes: PM filter efficiency, SCR catalyst efficiency, EGR low flow, and injection quantity minimum for automatic transmission vehicles only. For Generation 3, the minimum set of tests includes: PM filter efficiency, SCR efficiency, EGR low flow, injection quantity minimum, injection quantity maximum, and DOC for automatic transmission vehicles only.

2.9 “Combined Uphill/Downhill and Highway Route” means the driving route shown and described in Appendix B-3 to this Consent Decree.

2.10 “DEF System” means the combination of vehicle components used to store, filter, measure the level and quality of, thaw, and inject the DEF into the exhaust.

2.11 “Defeat Device” has the meaning provided under 42 U.S.C. § 7522(a)(3)(B) and 40 C.F.R. § 86.1803-01.

2.12 “DeNO_x Strategies” means an AECD that acts to convert NO_x that accumulates on the NO_x trap to N₂.

2.13 “DeSO_x Strategy” means an AECD that acts to remove sulfur that accumulates on the NO_x trap.

2.14 “DeSO_x Escalation Strategies” means an AECD that acts in stages to improve the removal of sulfur that accumulates on the NO_x trap.

2.15 “Deterioration Factor” or “DF” means the number, determined pursuant to 40 C.F.R. § 86.1823-08, that represents the change in emissions performance during a vehicle’s Full Useful Life. The DF is applied to emission results from the required test cycles, as provided in 40 C.F.R. § 86.1841-01. DFs are used to estimate increases in emissions caused by deterioration of the emission control system as a vehicle ages over its Full Useful Life.

2.16 “Diesel Exhaust Fluid” or “DEF” means a liquid reducing agent (other than engine fuel) used in conjunction with selective catalytic reduction to reduce NO_x emissions. DEF is generally understood to be an aqueous solution of urea conforming to the specification of ISO 22241. DEF is used in Generation 2 and Generation 3 vehicles and is sometimes referred to by the trademarked name, “AdBlue.”

2.17 “Drivability” means the smooth delivery of power, as demanded by the driver or operator. Typical elements of Drivability degradation are rough idling, misfiring, surging, hesitation, or insufficient power. Conversion from conventional fuels to alternative fuels may entail losses of volumetric efficiency, resulting in some power loss. Such power loss is not considered to be Drivability degradation.

2.18 “Durability Demonstration Vehicle” or “DDV” means a vehicle with the final emission calibration that is run on the Standard Road Cycle (“SRC”) to Full Useful Life. Periodically (at approximately 4,000 miles, 30,000 miles, and every 30,000 miles thereafter) emission testing in the FTP75 is performed and the Deterioration Factor is calculated. After completion of emission testing at Full Useful Life, the vehicle is reflashed with the final engine Calibration, which includes the final emission Calibration (used during mileage accumulation to Full Useful Life) and final OBD Calibration, and the reflashed vehicle is used for Full Useful Life emission compliance and OBD testing required to be reported post-submission according to subparagraph 4.3.4 in this Appendix B. Subject to EPA/CARB approval, a representative Generation 3 vehicle may be used as the DDV for purposes of complying with subparagraph 4.3.4.

2.19 “ECU” or “Engine Control Unit” means the computer, including associated software, which controls various engine functions, including emission control system functions.

2.20 “EGR” or “Exhaust Gas Recirculation” means a device that directs a portion of the exhaust gas into the intake air stream for the purpose of controlling emissions.

2.21 “Eligible Vehicle” has the meaning provided in Appendix A of the Consent Decree.

2.22 “Eligible Lessee” has the meaning provided in Appendix A of the Consent Decree.

2.23 “Eligible Owner” has the meaning provided in Appendix A of the Consent Decree.

2.24 “Emission Control System” means a unique group of emission control devices, auxiliary emission control devices, engine modifications and strategies, and other elements of design designated by EPA/CARB and used to control exhaust emissions of a vehicle.

2.25 “Emission Control System Data Parameters” means the data parameters that Settling Defendants must record while conducting the Required Emissions Test Procedures, including the preconditioning cycles, as set forth in Appendix B-2 to this Consent Decree.

2.26 “Emissions Increasing Auxiliary Emissions Control Device” or “EI-AECD” means any AECD, as defined in Cal. Code. Regs. tit. 13, § 1968.2(c), that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, provided that the need for such AECD is justified by the protection it provides against vehicle damage or accident. EI-AECDs do not include AECDs that do not sense, measure, or calculate any parameter or command or trigger any action, algorithm, or alternate strategy; or AECDs that are activated solely due to any of the following conditions: (1) operation of the vehicle above 8,000 feet in elevation; (2) ambient temperature; (3) when the engine is warming up and is not reactivated once the engine has warmed up in the same driving cycle; (4) failure detection (storage of a fault code) by the OBD system; (5) execution of an OBD monitor; or (6) execution of an infrequent regeneration event.

2.27 “Emissions Levels” means the emissions levels that represent the best achievable emissions performance, as specified in Appendix B-1 to this Consent Decree (Prior Test Results).

2.28 “Emissions Modification” means the alterations to 2.0 Liter Subject Vehicles including software recalibration and replacement of parts related to the Emissions Control System, that are designed to reduce emissions, remove all Defeat Devices and bring the vehicles into compliance with the Maximum Emissions Modification Limits and the other requirements specified in this Appendix B.

2.29 “Emissions Modification Database” means a searchable database that Settling Defendants make available online, by which users, including Eligible Owners, Eligible Lessees, and potential purchasers, may conduct a free-of-charge search by vehicle VIN to determine whether the Emissions Modification is available for, or has been applied to, a specific vehicle.

2.30 “Emissions Modification Proposal” means the required materials Settling Defendants provide in a Submission or multiple Submissions for EPA/CARB review and approval or disapproval of any Proposed Emissions Modification, if Settling Defendants elect to submit such a proposal.

2.31 “Engine Bench-aged” means aging that is conducted on an internal combustion engine test bench using a procedure that is subject to EPA/CARB approval and using a fuel type (diesel or gasoline) as provided herein.

2.32 “Engineering Durability Data” means data which is used to estimate the Official Durability Data. It may be based on a preliminary design of the Emission Modification. It may also be determined from an extrapolation of incomplete Official Durability Data or by simulating the mileage accumulation required under 40 C.F.R. § 86.1823-08.

2.33 “Engineering Durability Testing” means testing to obtain Engineering Durability Data.

2.34 “EPA/CARB” means EPA and CARB when the agencies evaluate Settling Defendants’ Submissions and issue decisions, including decisions concerning the approval or

disapproval of Proposed Emissions Modifications, in accordance with the definitions and decision-making authorities set forth in Section V of this Consent Decree (Approval of Submissions and EPA/CARB Decisions).

2.35 “Federal Test Procedure” or “FTP” means the driving schedule in 40 C.F.R. Part 86, Appendix I, Section (a) (EPA Urban Dynamometer Driving Schedule for Light-Duty Vehicles and Light-Duty Trucks).

2.36 “Final OBD Demonstration” means:

2.36.1 For automatic transmission vehicles: all OBD emission demonstration testing required under Cal. Code. Regs. tit.13, § 1968.2(h) (2013), except, if Settling Defendants assert that only a functional check is required because no failure or deterioration of the specific tested system could result in an engine’s emissions exceeding the emission malfunction criteria, Settling Defendants must still complete the OBD demonstration and submit with the proposal all emission and fault detection data from vehicles equipped with the Proposed Emissions Modification used to determine that only a functional test of the system(s) is required.

2.36.2 For manual transmission vehicles: all OBD emission demonstration testing required under Cal. Code. Regs. tit. 13, § 1968.2(h) (2013), including the requirements concerning functional check data noted above, except limited to the following monitors:

- i. For Gen 1: PM filter efficiency, NOx Trap efficiency, EGR low flow, injection quantity minimum, charge air undercooling, EGR slow response, oxygen sensor upstream LNT slow response, oxygen sensor upstream of NOx Trap positive amplification, oxygen sensor upstream of NOx Trap negative amplification, misfire detection, underboost, and DOC efficiency.
- ii. For Gen 2: PM filter efficiency, SCR efficiency, EGR low flow, injection quantity minimum, SCR delivery performance, misfire detection, EGR slow response, underboost, overboost, boost system slow response, charge air undercooling, DEF delivery performance, and DOC efficiency.
- iii. For Gen 3: PM filter efficiency, SCR efficiency, EGR low flow, injection quantity minimum, injection quantity maximum, DEF delivery performance, and DOC efficiency.

2.37 “FTP@1620m” means FTP testing at high-altitude conditions, i.e., a test altitude of 1,620 meters (5,315 feet), plus or minus 100 meters (328 feet), or equivalent observed barometric test conditions of 83.3 ± 1 kilopascals.

2.38 “Full Useful Life” or “FUL” means the regulatory period in years or miles for which vehicles must meet emission standards. Full Useful Life is 10 years or 120,000 miles, whichever occurs first, for Model Year 2009-2014 2.0 Liter Subject Vehicles and 15 years or 150,000 miles, whichever occurs first, for Model Year 2015 2.0 Liter Subject Vehicles.

2.39 “Generation” means the different versions of emission control technology installed in various configurations of 2.0 Liter Subject Vehicles.

2.40 “Generation 1” or “GEN 1” means the following 2.0 Liter Subject Vehicles: Volkswagen Jetta (Model Years 2009-2014), Jetta SportWagen (2009-2014), Golf (2010-2014), Beetle (2013-2014), Beetle Convertible (2013-2014), and Audi A3 (2010-2013), containing a lean NOx trap system, within the test groups specified in the Consent Decree.

2.41 “Generation 2” or “GEN 2” means the following 2.0 Liter Subject Vehicles: Volkswagen Passat (Model Year 2012-2014) containing a selective catalytic reduction system with SCR catalyst in under floor position, within the test groups specified in the Consent Decree.

2.42 “Generation 3” or “GEN 3” means the following 2.0 Liter Subject Vehicles: Volkswagen Jetta, Golf, Golf SportWagen, Beetle, Beetle Convertible, Passat and Audi A3 (Model Year 2015), containing an SCR system with the upstream SCR catalyst close-coupled to the engine and an SCR catalyst in the underfloor position, within the test groups specified in the Consent Decree.

2.43 “Highway Fuel Economy Test,” “HWFET,” or “HWY FE” mean the test cycle that represents highway driving as described in 40 C.F.R. Part 600 Appendix I.

2.44 “Include” and “Including,” as used in this Appendix B, are not limiting terms.

2.45 “Infrequent Regeneration Adjustment Factor” or “IRAF” mean the adjustment factor for each pollutant used to account for increased emissions caused by periodic regeneration of certain control devices, such as DPFs, performed by burning particulates that have accumulated in the control device. The increased emissions caused by such regeneration are accounted for over the emission test cycles by adjustment factors, or IRAFs, applicable to the pollutants NMOG, NOx, CO, and PM.

2.46 “Maximum Emissions Modification Limits” means the emissions levels, specified in Tables 1-3, that the Modified Vehicles may not exceed.

2.47 “Modified Vehicle” means a 2.0 Liter Subject Vehicle that Settling Defendants, or an entity acting on behalf of Settling Defendants, have modified in accordance with an Approved Emissions Modification.

2.48 “MT” means manual transmission.

2.49 “Noise Vibration and Harshness” or “NVH,” means a measure of the noise level heard during driving, the vibrations felt during driving, and the harshness of the ride of the vehicle.

2.50 “Non-Methane Organic Gases” or “NMOG” means the sum of oxygenated and non-oxygenated hydrocarbons contained in a gas sample as measured using the procedures described in 40 C.F.R. § 1066.635.

2.51 “NO_x + NMOG Limit” means an emissions limit concerning the sum of NO_x plus Non-Methane Organic Gases (NMOG) and required by this Appendix B.

2.52 “NO_x” means oxides of nitrogen, i.e., the sum of the nitric oxide and nitrogen dioxide contained in a gas sample as if the nitric oxide were in the form of nitrogen dioxide.

2.53 “NO_x Reduction System” means, for the Generation 1 vehicles, all components in the exhaust system which enable NO_x reduction in conjunction with the NO_x trap.

2.54 “NO_x Sensor” means a sensor located in a vehicle’s exhaust system which measures NO_x. The reading from the sensor provides feedback to the emission control system.

2.55 “NO_x Trap” means an exhaust emission control device which traps (adsorbs or stores) NO_x under lean combustion conditions. Periodically, by design, the trapped NO_x is reduced to N₂ by reaction with hydrocarbons under rich combustion conditions. This type of emission control device is sometimes referred to as a lean NO_x trap, NO_x adsorber, or NO_x storage catalyst and is used on Generation 1 vehicles.

2.56 “Official Durability Data” means emissions data obtained by periodic testing during the accumulation of 100% of Full Useful Life mileage on test vehicles, as described in 40 C.F.R. § 1823-08 and as required under this Appendix B. Official Durability Data is used to determine DFs.

2.57 “Oven-aged Parts” means parts that are exposed to high temperatures to simulate the aging achieved through mileage accumulation on a vehicle.

2.58 “Particulate Matter” or “PM” mean particulates formed during the diesel combustion process and measured by the procedures specified in 40 C.F.R. Part 86 Subpart B.

2.59 “Portable Emissions Measurement System” or “PEMS” mean an emissions measurement system which measures emissions of NO_x, CO, CO₂, and THC (Total Hydrocarbons) while a vehicle is driven on the road.

2.60 “Proposed Emissions Modification” means the alterations to 2.0 Liter Subject Vehicles, including software recalibration and replacement of parts related to the Emissions Control System, that Settling Defendants may propose for EPA/CARB approval, and that are designed to reduce emissions, remove all Defeat Devices, and bring the vehicles into compliance with the requirements specified in this Appendix B.

2.61 “Required Emissions Test Procedures” shall have the meaning specified in subparagraph 4.3.2.

2.62 “Road Mode Calibration” means the Calibration installed on Subject 2.0 Liter Vehicles when certified, and not reflecting any modification conducted as part of the 2014 Reflash or an Approved Emissions Modification, that controls Emission Control Systems in the vehicle when driven on the road, as opposed to during tests for emissions compliance.

2.63 “SC03” means the test cycle, described in 40 C.F.R. § 86.160–00 and listed in 40 C.F.R. Part 86, Appendix I, paragraph (h), which is designed to represent driving under urban conditions at elevated temperatures and high solar loading with the air conditioner on.

2.64 “SCR Guidelines” means the EPA guidance document, *Certification Procedure for Light-Duty and Heavy-Duty Diesel Vehicles and Heavy-Duty Diesel Engines Using Selective Catalyst Reduction (SCR) Technologies*, CISD 07-07, March 27, 2007, and the SCR presentation by EPA and CARB, *Selective Catalytic Reduction Workshop* (July 20, 2010), http://www.arb.ca.gov/msprog/onroadhd/documents/epa-arb_scr_workshop_7-20-10.pdf.

2.65 “SCR Inducements” or “Inducements” means the limitations imposed on vehicle operation that occur when a vehicle runs out of DEF, has poor quality DEF, or when tampering occurs to the SCR system. Inducements might include limitations on vehicle speed or rendering inoperable the restart function of the vehicle.

2.66 “SCR System” means the combination of components necessary for NO_x to be reduced by selective catalytic reduction. These components include the DEF tank, DEF injection system, SCR catalyst(s), and associated sensors.

2.67 “Sea Level” means common altitudes at which Settling Defendants conduct certain tests (0-500 meters height).

2.68 “Second NO_x Sensor” means an additional NO_x sensor which will be added to Generation 3 vehicles during a Subsequent Service Action.

2.69 “SFTP Composite” means emissions result weighted over three test cycles according to the following formula: $SFTP\ Composite = 0.35 \times (FTP) + 0.28 \times (US06) + 0.37 \times (SC03)$.

2.70 “Subsequent Service Action” means a removal, addition, installation, replacement, repair, or other modification of an emission related component on a Modified Vehicle that is required to bring the vehicle into compliance with this Appendix B.

2.71 “Supplemental FTP” or “SFTP” mean the additional test procedures designed to measure emissions during aggressive and microtransient driving, as described in 40 C.F.R. § 86.159–00 over the US06 cycle, and also the test procedure designed to measure urban driving emissions while the vehicle's air conditioning system is operating, as described in 40 C.F.R. § 86.160–00 over the SC03 cycle.

2.72 “Switch Calibration” means the computerized program utilized by a Subject 2.0 Liter Vehicle’s ECU, prior to receiving an Approved Emissions Modification, to determine if the vehicle is being tested for emissions or driven on the road. The Switch Calibration program changes the operation of the vehicle’s Emission Control Systems depending on the driving mode detected by the program.

2.73 “Unified Drive Cycle” means the “Unified Cycle Driving Schedule” defined in Part II of the “California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light Duty Trucks, and Medium Duty Vehicles,” incorporated by reference in Cal. Code Regs. tit 13, § 1961.2.

2.74 “Test Group” means the basic classification unit within a durability group used for the purpose of demonstrating compliance with exhaust emission standards in accordance with 40 C.F.R. § 86.1841-01.

2.75 “US06” means the driving schedule described in 40 C.F.R. § 86.159–08 and listed in 40 C.F.R. 86, Appendix I, section (g), as amended July 13, 2005, entitled, “EPA US06 Driving Schedule for Light-Duty Vehicles and Light-Duty Trucks” (e.g., hard acceleration, more power requirement, high speed, high load).

III. EMISSIONS MODIFICATION CRITERIA

3.1 Each Proposed Emissions Modification for any 2.0 Liter Subject Vehicle must:

3.1.1 Specify the emissions levels (the “Emissions Levels”) concerning the corresponding vehicles, as demonstrated by the Required Emissions Test Procedure results, and require that the emissions of Modified Vehicles must not exceed the Maximum Emissions Modification Limits set forth in subparagraph 3.1.2, Tables 1 – 3.

- i. The demonstrated Emissions Levels must represent the best achievable performance, as demonstrated through Settling Defendants’ emissions testing results that Settling Defendants previously submitted to EPA and CARB, set forth in Appendix B-1 to this Consent Decree (Prior Test Results). For each Proposed Emissions Modification, Settling Defendants must conduct the Required Emissions Test Procedures, and, for each such test procedure, including for the preconditioning cycles, record the Emission Control System Data Parameters set forth in Appendix B-2. Settling Defendants may conduct the Required Emissions Test Procedures in regular default mode only, provided that the worst-case configuration is selected (e.g., 4WD-capable vehicles must be tested with the vehicle in 4WD mode), and provided that any compliance tests conducted by EPA/CARB may be conducted in any user-selected mode, as allowed under EPA or CARB regulations. Settling Defendants must submit all results of the Required Emissions Test Procedures, together with all Emission Control System Data Parameters, to EPA and CARB with each Proposed Emissions Modification. For purposes of this Paragraph, “best achievable performance” means that the Emissions Levels for each corresponding Proposed Emissions Modification are consistent with or better than the Prior Test Results. Settling Defendants may make this demonstration on the basis of averaged results for up to 10 test vehicles,

provided, however, Settling Defendants must submit all test results for all test vehicles to EPA and CARB, and all test results must be used in averaging. EPA and CARB intend to compare the emissions calibrations for the vehicles used in this demonstration to the emissions calibrations for the vehicles that have been modified pursuant to each applicable Approved Emissions Modification to confirm the calibrations are unchanged. Modified Vehicles must have the same Calibration as the test vehicles used to make this demonstration. Settling Defendants must make all vehicles used for this testing available to EPA and CARB for inspection and confirmatory testing at a reasonable time and place designated by the agencies within twelve months after submission of the test data. Settling Defendants must submit to EPA and CARB, with the corresponding Emissions Modification Proposal, the compiled software files (i.e., the .HEX Files), ROM checksum values, and CVN numbers for the software calibrations that were installed in the vehicles when Settling Defendants conducted the testing required under this Paragraph;

- ii. Settling Defendants must also demonstrate, based on the results of the Required Emissions Test Procedures, in A-to-B comparisons that compare (A) vehicles without the 2014 Reflash and with the Road Mode Calibration active via a purposefully modified ECU and operative during the batch of test cycles with (B) vehicles to which Settling Defendants have applied the Proposed Emissions Modification, that the Proposed Emissions Modification results in a quantifiable reduction in NOx emissions, or that the average of testing results for each Proposed Emissions Modification are within Tier 2 Bin 5, 120,000 miles, NOx standards over the Required Emissions Test Procedures; and
- iii. The Emissions Levels must not exceed the values over the applicable test cycles set forth in Tables 1 – 3 (the Maximum Emissions Modification Limits). The Maximum Emissions Modification Limits apply until the vehicle accumulates 120,000 miles for Model Years 2009-2014 vehicles, and 150,000 miles for Model Year 2015 vehicles. For manual transmission models, the Maximum Emissions Modification Limits for NOx + NMOG are calculated by adding 0.030 g/mile to the FTP 75 and High Altitude FTP (“FTP@1620m”) values, and by adding 0.010 g/mile to the SFTP Composite values shown in Tables 1 – 3; all other limits remain the same. No Proposed Emissions Modification will be approved if the Emissions Levels exceed the Maximum Emissions Modification Limits.

3.1.2 Maximum Emissions Modification Limits

TABLE 1 – GENERATION 1

MAXIMUM EMISSIONS MODIFICATION LIMITS FOR AUTOMATIC TRANSMISSION VEHICLES GENERATION 1 (G/MILE)				
Test Procedure	NO _x + NMOG	CO	Formaldehyde	PM
FTP 75	0.160 ¹	4.2	0.018	0.01
Hwy FE Test	0.160	4.2	0.018	0.01
SFTP Composite	0.250 ²	4.2	0.018	0.01
FTP@1620m	0.360	4.2	0.018	0.01

¹ In-Use Level = Table value + 0.030 g/mile² In-Use Level = Table value + 0.050 g/mile

TABLE 2 – GENERATION 2

MAXIMUM EMISSIONS MODIFICATION LIMITS FOR AUTOMATIC TRANSMISSION VEHICLES GENERATION 2 (G/MILE)				
Test Procedure	NO _x + NMOG	CO	Formaldehyde	PM
FTP 75	0.160	4.2	0.018	0.01
Hwy FE Test	0.100	4.2	0.018	0.01
SFTP Composite	0.200 ¹	4.2	0.018	0.01
FTP@1620m	0.190 ¹	4.2	0.018	0.01

¹ In-Use Level = Table value + .050 g/mile

TABLE 3 – GENERATION 3

MAXIMUM EMISSIONS MODIFICATION LIMITS FOR AUTOMATIC TRANSMISSION VEHICLES GENERATION 3 (G/MILE)				
Test Procedure	NO _x + NMOG	CO	Formaldehyde	PM
FTP 75	0.160	4.2	0.018	0.01
Hwy FE Test	0.100	4.2	0.018	0.01
SFTP Composite	0.180	4.2	0.018	0.01

FTP@1620m	0.160 ¹	4.2	0.018	0.01
-----------	--------------------	-----	-------	------

¹ In-Use Level = Table value + .050 g/mile

3.1.3 Require Settling Defendants to remove all Defeat Devices, including the Switch and Road Mode Calibrations, from each and every Modified Vehicle. Settling Defendants must also provide evidence, as described in subparagraphs 4.3.5, 4.3.12, and 4.3.14, to EPA and CARB that demonstrates that the Modified Vehicles do not have Defeat Devices.

3.1.4 Require that the Modified Vehicles conform to the OBD regulatory protocol and process requirements set forth in Cal. Code Regs. tit. 13, § 1968.2 (2013), except that (1) the emissions threshold malfunction criteria set forth in this Appendix B shall apply instead of the emission threshold malfunction criteria specified in Cal. Code Regs. tit. 13, § 1968.2(f) (2013); (2) allowances for OBD noncompliances set forth in this Appendix B shall apply instead of the deficiency provisions for OBD noncompliances in Cal. Code Regs. tit. 13, § 1968.2(k) (2013); (3) test vehicle aging for monitoring system demonstration testing shall be conducted based on the provisions set forth in this Appendix B instead of Cal. Code Regs. tit. 13, § 1968.2(h)(2.3) (2013); and (4) the required demonstration tests shall be conducted based on this Appendix B instead of Cal. Code Regs. tit. 13, § 1968.2(h)(4) (2013). With respect to the requirements under Cal. Code Regs. tit. 13, § 1968.2 (2013), for all Generation 1 and 2 vehicles, the provisions for Model Year 2014 vehicles apply, and for all Generation 3 vehicles, the provisions for Model Year 2015 apply. In order to meet such demonstration testing requirements for approval of a Proposed Emissions Modification, Critical OBD Demonstration testing for Generations 1, 2, and 3 vehicles may be conducted using Oven-Aged or Bench-Aged Parts, using diesel and/or gasoline fuel to represent Full Useful Life aging, and for the Critical OBD Demonstration for Generation 3, subject to EPA/CARB approval, representative vehicles may be used; provided, however, that after approval of a Proposed Emissions Modification, and for each Generation, Settling Defendants must also complete Final OBD Demonstration testing using the Durability Demonstration Vehicle aged to Full Useful Life. Except as otherwise provided in this Appendix B, (1) Engineering Durability Data vehicles may not be used for Final OBD Demonstration testing and (2) to obtain EPA/CARB approval to sell or lease vehicles, Settling Defendants must conduct Critical OBD Demonstration testing as specified in subparagraph 7.2.2. With respect to the test vehicle for Final OBD Demonstration testing, Settling Defendants must:

- i. Conduct Final OBD Demonstration testing on vehicles aged to Full Useful Life. For Generation 3 OBD Demonstration test vehicles, Settling Defendants must conduct Full Useful Life aging on Model Year 2015 vehicle(s). For Generation 1 and Generation 2 OBD Demonstration test vehicles, Settling Defendants must conduct Full Useful Life aging on representative vehicles;

- ii. Exercise best efforts to procure vehicles for aging with the lowest initial mileage possible, and in no event may the initial mileage exceed 10,000 miles for the Generation 3 vehicle(s) or 30,000 miles for the Generation 1 and Generation 2 vehicles. Alternatively, upon EPA/CARB approval, vehicles with higher mileage may be used if the vehicle is retrofitted with a new engine, gearbox, and exhaust gas system and the vehicle is aged for an additional 150,000 miles for Generation 3 or an additional 120,000 miles for Generation 1 and Generation 2; and
- iii. Test vehicles that meet the additional requirements described in subparagraph 3.6.

Settling Defendants may not use Oven-aged Parts to represent Full Useful Life aging during Final OBD Demonstration testing. Settling Defendants must complete Final OBD Demonstration testing no later than November 30, 2017, for Approved Emissions Modifications concerning Generation 1 vehicles; February 28, 2018, for Approved Emissions Modifications concerning Generation 2 vehicles; and March 31, 2018, for Approved Emissions Modifications concerning Generation 3 vehicles. Settling Defendants must supply all results of the Final OBD Demonstration tests for each Generation to EPA and CARB upon completion of such tests. Settling Defendants must certify the Final OBD Demonstration test results in accordance with the certification requirements of Paragraphs 33 and 34 of this Consent Decree. If, when submitting any Emissions Modification Proposal, Settling Defendants cannot demonstrate that the corresponding vehicles will meet the OBD regulatory requirements, Settling Defendants must specify in such proposal each and every requested OBD noncompliance, in accordance with subparagraphs 3.2.5, 3.3.2, 3.4.4, and Paragraphs 3.5 and 3.6, and within the limitations set forth therein. Mandatory recall requirements, pursuant to Cal. Code Regs. tit. 13, § 1968.5, concerning Settling Defendants' noncompliance with the requirements described in this Appendix B shall apply.

3.1.5 Specify the fuel economy and emissions impacts of the Proposed Emissions Modification. Settling Defendants must measure, and provide to EPA and CARB, the fuel economy and emissions impacts of the Proposed Emissions Modification by using the FTP, US06, SC03, HWFET, and 20°F FTP test cycles, based on A-to-B testing that compares (A) vehicles without the 2014 Reflash and with the Road Mode Calibration active and operative during the batch of test cycles with (B) vehicles to which Settling Defendants have applied the Proposed Emissions Modification. The comparison testing must be conducted on the same vehicle, and using the same testing parameters that could affect emissions, including but not limited to fuel. Settling Defendants must conduct such test cycles on Generation 1 Model Years 2011 and 2014 Jetta automatic transmission vehicles; Generation 2 Model Years 2012 and 2014 Passat automatic transmission vehicles; and Generation 3 Jetta automatic transmission and Golf manual transmission vehicles, at a minimum. For automatic transmission vehicles, the comparisons may be conducted in "D" mode. Settling Defendants must provide all emissions and fuel consumption data for all cycles for the tests described in this

subparagraph. Fuel economy must be calculated according to the vehicle specific five-cycle methodology described in 40 C.F.R. Part 600. The same percentage difference calculated for the fuel economy of the sample vehicles will be applied to all vehicles in that Generation, unless Settling Defendants choose to provide specific measurements for specific vehicle types.

3.1.6 Require Settling Defendants to permanently affix the labels described in this subparagraph 3.1.6, and in the form approved by EPA/CARB, to each and every Modified Vehicle. Such labels must (1) not cover any previously affixed labels, except in the case of recall labels concerning Subsequent Service Actions where the recall label may be affixed on top of the Emissions Modification recall label(s), provided the subsequent recall label contains all information in the prior recall label; (2) inform potential vehicle purchasers and potential Lessees that the vehicle has received the applicable Approved Emissions Modification, in accordance with this Appendix B; (3) clearly specify, in the form and manner required for the applicable labels, the applicable Maximum Emissions Modification Limits, and the fuel economy rating of the Modified Vehicle; and (4) identify all emission control components installed in accordance with the applicable Approved Emissions Modification. The form of, information contained in, and application of the labels must conform with the Vehicle Emissions Compliance Information (“VECI”) label required under 40 C.F.R. § 86.1807-01, the recall label required under 40 C.F.R. Part 85, Subpart S, and the current EPA fuel economy label. Settling Defendants may provide the required fuel economy information to Eligible Owners and Eligible Lessees that elect the Emissions Modification in a notice printed on paper, provided that the Settling Defendants provide such notice upon returning the Modified Vehicle to such Owners and Lessees. For each Modified Vehicle offered for sale or lease, Settling Defendants must affix a temporary Monroney fuel economy label on the window of such Modified Vehicle.

3.1.7 Settling Defendants must, within 10 Days of submitting a Proposed Emissions Modification, provide EPA and CARB with four test vehicles from each Generation (twelve vehicles, total) that have been modified pursuant to the Proposed Emissions Modification for the purpose of (1) evaluating the Proposed Emissions Modification to determine whether such vehicles meet the requirements of this Appendix B, and (2) conducting in-use compliance testing. If Settling Defendants deliver such test vehicles after 10 Days following submission of any proposal, the EPA/CARB expected response dates shall be extended by the length of delay in delivery, beginning from the date the proposal was submitted. Settling Defendants must certify, in accordance with the certification requirements of Paragraphs 33 and 34 of this Consent Decree, that each test vehicle provided to EPA and CARB has the same Calibration as vehicles that receive the applicable Proposed Emissions Modification.

3.1.8 Require the following specifications for test vehicles: For durability demonstrations and emissions testing required for Emissions Modification Proposals concerning Generation 3 vehicles, subject to EPA/CARB approval, Settling Defendants may use Generation 3 vehicles other than the Model Year 2015 vehicles, provided such

vehicles are appropriately representative of the Proposed Emissions Modification for Generation 3. With respect to the vehicle used for Official Durability Demonstration, in the event parts break down, subject to EPA/CARB approval, Settling Defendants may replace such failed parts with parts from an Engineering Durability Vehicle, in accordance with the requirements of 40 C.F.R. § 86.1834-01. Vehicles selected for all compliance testing, including all testing required for submission with a Proposed Emissions Modification, all in-use compliance testing, and any testing conducted by EPA and CARB, must be reasonably operated and maintained, and may not be rejected on the basis of such criteria as mileage accumulation beyond 75% Full Useful Life, lack of maintenance records, or repairs due to the Emissions Modification.

3.1.9 Require Settling Defendants to make available online a searchable database (the Emissions Modification Database) that includes all Subject 2.0 Liter Vehicles, by which users, including Eligible Owners, Eligible Lessees, and prospective purchasers, may conduct a free-of-charge search by vehicle VIN to determine if an Emissions Modification is available for such vehicle. The website must display the Approved Emissions Modification disclosure and Approved Extended Emissions Warranty applicable to a specific vehicle when a user inputs the vehicle VIN, as described in subparagraph 3.2.2 of Appendix A to this Consent Decree.

3.1.10 Require Settling Defendants to disseminate the approved Emissions Modification Disclosure (1) within 10 Days of approval of each Proposed Emissions Modification, by mailing the Disclosure to each Eligible Owner and each Eligible Lessee and (2) within 2 business days of approval of each Proposed Emissions Modification, by posting and maintaining the applicable Disclosure on the webpage for each 2.0 Liter Subject Vehicle within the Emissions Modification Database.

3.2 Additional Requirements for Generation 1 2.0 Liter Subject Vehicles: In addition to the requirements of Paragraph 3.1, each Proposed Emissions Modification for any Generation 1 2.0 Liter Subject Vehicle must also:

3.2.1 Require the installation of a new exhaust flap, EGR filter, and NOx Trap that meets the specifications of BASF TEX2064, as proposed by Settling Defendants to EPA and CARB on January 28, 2016, or, subject to EPA/CARB approval, such other functionally and effectively equivalent hardware or software, provided that Settling Defendants propose such other hardware or software in the applicable Proposed Emissions Modification.

3.2.2 Require that PM filter efficiency monitoring shall be accomplished using the pressure differential across the low pressure EGR filter and the pressure differential across the DPF as a secondary backstop monitor. The backstop monitor shall detect malfunctions before FTP PM emissions exceed 0.040 grams per mile and is not subject to the 0.035 gram/mile limitations specified in subparagraph 3.2.5. The backstop monitor demonstration must be completed no later than the respective time period allowed for the Final OBD Demonstration.

3.2.3 Require the installation of a NO_x Trap with a functional monitor for the entire NO_x reduction system for the Full Useful Life of the Modified Vehicle.

3.2.4 Describe any and all DeNO_x strategies and DeSO_x strategies to periodically remove NO_x and sulfur from the NO_x Trap for the purpose of ensuring proper functioning, including a description of the impacts of such strategies on emissions, infrequent emissions, and durability, and require the installation of such strategies.

3.2.5 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2 (2013), except that the emission threshold malfunction criteria set forth in this Appendix B, as described in this subparagraph and in Tables 4 and 5, for automatic and manual transmission vehicles, respectively, shall apply to all monitoring requirements in Cal. Code Regs. tit. 13, § 1968.2(f) (2013) that have emission threshold malfunction criteria.

- i. Automatic transmission vehicles. Threshold monitors must detect a malfunction before NMOG + NO_x emissions exceed 0.240 g/mile and before PM emissions exceed 0.0175 g/mile. Threshold monitors that fail to detect a malfunction before these limits are exceeded shall be considered OBD Emissions Threshold Noncompliances. Upon a Final OBD Demonstration, the Approved Emissions Modification may not show more than 12 OBD Emissions Threshold Noncompliances. Of these 12 OBD Emissions Threshold Noncompliances, no more than 2 monitors that fail to demonstrate malfunction detection before emissions exceed 0.480 g/mile NMOG + NO_x will be approved; provided, however, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.720 g/mile NMOG + NO_x will be approved. In all cases, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.035 g/mile PM will be approved. The OBD Emissions Threshold Noncompliances are summarized in Table 4 for Generation 1 automatic transmission vehicles.

TABLE 4. OBD EMISSION THRESHOLD NONCOMPLIANCES FOR GENERATION 1 AUTOMATIC TRANSMISSION VEHICLES.

EMISSIONS LEVELS	NUMBER OF APPROVABLE NONCOMPLIANCES
≤ 0.240 g/mile NMOG + NO _x and ≤ 0.0175 g/mile PM	N/A; compliant
0.240 g/mile $< x^{**} \leq 0.480$ g/mile NMOG + NO _x or 0.0175 g/mile $< x^{**} \leq 0.035$ g/mile PM	12
0.480 g/mile $< x^{**} \leq 0.720$ g/mile NMOG + NO _x	2 *
> 0.720 g/mile NMOG + NO _x	0
> 0.035 g/mile PM	0
Total Number of OBD Emissions Threshold Noncompliances	12

* This is a subset of the 12 total OBD threshold noncompliances, so if for example 12 noncompliances are used for the range $0.240 < x \leq 0.480$ NMOG + NO_x, then 0 noncompliances will be approved for the range $0.480 < x \leq 0.720$ g/mile NMOG + NO_x.

** “x” is the emission level when the malfunction is first detected.

- ii. Manual Transmission Vehicles. Threshold monitors must detect a malfunction before NMOG + NO_x emissions exceed 0.285 g/mile and before PM emissions exceed 0.0175 g/mile. Threshold monitors that fail to detect a malfunction before these limits are exceeded shall be considered OBD Emissions Threshold Noncompliances. Upon a Final OBD Demonstration, the Approved Emissions Modification may not show more than 12 OBD Emissions Threshold Noncompliances. Of these 12 OBD Emissions Threshold Noncompliances, no more than 2 monitors that fail to demonstrate malfunction detection before emissions exceed 0.570 g/mile NMOG + NO_x will be approved; provided, however, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.855 g/mile NMOG + NO_x will be approved. In all cases, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.035 g/mile PM will be approved. The OBD Emissions Threshold Noncompliances are summarized in Table 5 for Generation 1 manual transmission vehicles.

TABLE 5. OBD EMISSION THRESHOLD NONCOMPLIANCES FOR GENERATION 1 MANUAL TRANSMISSION VEHICLES.

EMISSIONS LEVELS	NUMBER OF APPROVABLE NONCOMPLIANCES
≤ 0.285 g/mile NMOG + NO _x and ≤ 0.0175 g/mile PM	N/A; compliant
0.285 g/mile $< x^{**} \leq 0.570$ g/mile NMOG + NO _x g/mile or $0.0175 < x^{**} \leq 0.035$ g/mile PM	12
0.570 g/mile $< x^{**} \leq 0.855$ g/mile NMOG + NO _x	2 *
> 0.855 g/mile NMOG + NO _x	0
> 0.035 g/mile PM	0
Total Number of OBD Emissions Threshold Noncompliances	12

* This is a subset of the 12 total OBD threshold noncompliances, so if for example 12 noncompliances are used for the range $0.285 < x \leq 0.570$ NMOG + NO_x, then 0 noncompliances will be approved for the range $0.570 < x \leq 0.855$ g/mile NMOG + NO_x.

**“x” is the emission level when the malfunction is first detected.

- iii. In the event of a discrepancy between the text herein and the tables, the tables shall govern. No more than 6 noncompliances, plus unused OBD Emissions Threshold Noncompliances, for issues other than OBD Emissions Threshold Noncompliances (e.g., failure to meet In-Use

Monitor Performance Ratio requirements, failure to track and report EI-AECDs, failure to report all required data to a scan tool) that would typically be issued during annual new vehicle OBD certification review will be approved.

3.2.6 Include all results from Critical OBD Demonstration testing for PM filter efficiency, NOx Trap, EGR low flow, and injection quantity minimum for automatic transmission vehicles. Critical OBD Demonstration test results must demonstrate compliance with the OBD requirements under subparagraph 3.2.5.

3.3 Additional Requirements for Generation 2 2.0 Liter Subject Vehicles: In addition to the requirements of Paragraph 3.1, each Proposed Emissions Modification for a Generation 2 2.0 Liter Subject Vehicle must also:

3.3.1 Require that the SCR system is capable of detecting the presence of mostly to entirely water (less than 1% DEF) in the DEF tank and initiating Inducements based on such detection. Settling Defendants must describe all Inducement strategies and such Inducement strategies must be consistent with the SCR Guidelines and the original certification applications submitted by Settling Defendants.

3.3.2 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2 (2013) except that the Emission Threshold Malfunction Criteria set forth in this Appendix B, as described in this subparagraph and in Table 6, shall apply to all monitoring requirements in Cal. Code Regs. tit. 13, § 1968.2(f) (2013) that have emission threshold malfunction criteria. Specifically, for automatic and manual transmission vehicles, threshold monitors must detect a malfunction before NMOG + NOx emissions exceed 0.240 g/mile and before PM emissions exceed 0.0175 g/mile. Threshold monitors that fail to detect a malfunction before these limits are exceeded shall be considered OBD Emissions Threshold Noncompliances. Upon a Final OBD Demonstration, the Approved Emissions Modification may not show more than 9 OBD Emissions Threshold Noncompliances. Of these 9 OBD Emissions Threshold Noncompliances, no more than 2 monitors that fail to demonstrate malfunction detection before emissions exceed 0.480 g/mile NMOG + NOx will be approved; provided, however, no monitors that fail to demonstrate malfunction detection before NMOG + NOx emissions exceed 0.720 g/mile and before PM emissions exceed 0.035 g/mile will be approved. The OBD Emissions Threshold Noncompliances are summarized in Table 6 for Generation 2 automatic and manual transmission vehicles.

TABLE 6. OBD EMISSIONS THRESHOLD NONCOMPLIANCES FOR GENERATION 2 AUTOMATIC AND MANUAL TRANSMISSION VEHICLES.

EMISSIONS LEVELS	NUMBER OF APPROVABLE NONCOMPLIANCES
≤ 0.240 g/mile NMOG + NOx and ≤ 0.0175 g/mile PM	N/A; compliant

0.240 g/mile < x** ≤ 0.480 g/mile NMOG + NOx or 0.0175 g/mile < x** ≤ 0.035 g/mile PM	9
0.480 g/mile < x** ≤ 0.720 g/mile NMOG + NOx	2 *
>0.720 g/mile NMOG + NOx	0
> 0.035 g/mile PM	0
Total Number of OBD Emissions Threshold Noncompliances	9

* This is a subset of the 9 total OBD emissions threshold noncompliances, so if for example 9 noncompliances are used for the range $240 < x \leq 480$ NMOG + NOx, then 0 noncompliances will be approved for the range $480 < x \leq 720$ g/mile NMOG + NOx.

“x” is the emission level when the malfunction is first detected.

- i. In the event of a discrepancy between the text herein and the table, the table shall govern. In addition, no more than 7 noncompliances, plus unused emission threshold noncompliances, for issues other than OBD Emission Threshold Noncompliances (e.g., failure to meet In-Use Monitor Performance Ratio requirements, failure to track and report EI-AECDs, failure to report all required data to a scan tool) that would typically be issued during annual new vehicle OBD certification review will be approved.

3.3.3 Include the results from Critical OBD Demonstration testing for PM filter efficiency, SCR catalyst efficiency, EGR low flow, and injection quantity minimum for automatic transmission vehicles. Critical OBD Demonstration test results must demonstrate compliance with the OBD requirements in subparagraph 3.3.2.

3.4 Additional Requirements for Generation 3 2.0 Liter Subject Vehicles: In addition to the requirements of Paragraph 3.1, each Proposed Emissions Modification for a Generation 3 2.0 Liter Subject Vehicle must also:

3.4.1 Require the future installation of OBD hardware and software to achieve compliant SCR monitoring, including the addition of a Second NOx Sensor in a Subsequent Service Action according to the mileage intervals and schedule described in subparagraph 3.4.3 (i.e., full volume SCR system monitoring with a downstream NOx sensor).

3.4.2 Describe the NOx sensor or DEF system capable of detecting poor reductant quality, including emission and dilution detection levels, and how the vehicles

will detect poor quality DEF and initiate Inducements, and require the installation of such strategies.

3.4.3 Require the installation of the Second NO_x Sensor and a new DOC or DOCs (if necessary to ensure compliant emissions performance for 150,000 miles) according to the following mileage intervals and schedule:

- i. If, in the Proposed Emissions Modification, Settling Defendants demonstrate durability of the current DOC for 90,000 miles, then Settling Defendants must install the Second NO_x Sensor and the new DOC at 90,000 miles or by January 1, 2020, whichever comes first, in a single Subsequent Service Action.
- ii. If, in the Proposed Emissions Modification, Settling Defendants demonstrate durability of the current DOC for 120,000 miles, then Settling Defendants must install the Second NO_x Sensor and the new DOC at 120,000 miles or by January 1, 2020 whichever comes first, in a single Subsequent Service Action.
- iii. If, in the Proposed Emissions Modification, Settling Defendants demonstrate durability of the current DOC for 150,000 miles, then Settling Defendants are not required to replace the DOC and must install the Second NO_x Sensor in a single Subsequent Service Action beginning in the 4th quarter of 2017, to be completed by January 1, 2020.

3.4.4 Comply with the OBD requirements under Cal. Code Regs. tit. 13, § 1968.2 (2013), except that the emission threshold malfunction criteria set forth in this Appendix B, as described in this subparagraph and in Tables 7 and 8, for Generation 3 automatic and manual transmission vehicles, respectively, shall apply to all monitoring requirements in Cal. Code Regs. tit. 13, § 1968.2(f) (2013) that have emission threshold malfunction criteria.

- i. Automatic Transmission Vehicles. Threshold monitors must detect a malfunction before NMOG + NO_x emissions exceed 0.240 g/mile and before PM emissions exceed 0.0175 g/mile. Threshold monitors that fail to detect a malfunction before these limits are exceeded shall be considered OBD Emissions Threshold Noncompliances. Upon Final OBD Demonstration, the Approved Emissions Modification for Generation 3 automatic vehicles may not show more than 3 OBD Emissions Threshold Noncompliances. Of these 3 OBD Emissions Threshold Noncompliances, no more than 1 monitor that fails to demonstrate malfunction detection before emissions exceed 0.480 g/mile NMOG + NO_x will be approved; provided, however, that no monitors that fail to demonstrate malfunction detection before emissions exceed 0.720 NMOG + NO_x will be approved.

In all cases, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.035 g/mile PM will be approved. The OBD Emissions Threshold Noncompliances are summarized in Table 7 for Generation 3 automatic transmission vehicles. Notwithstanding the foregoing, SCR Catalyst efficiency monitoring devices installed during a Subsequent Service Action must detect a malfunction before NMOG + NOx emissions exceed 0.280 g/mile and before PM emissions exceed 0.0175 g/mile.

TABLE 7. OBD NONCOMPLIANCES FOR GENERATION 3 AUTOMATIC TRANSMISSION VEHICLES.

EMISSIONS LEVELS	NUMBER OF APPROVABLE NONCOMPLIANCES
≤ 0.240 g/mile NMOG + NOx and ≤ 0.0175 g/mile PM	N/A; compliant
0.240 g/mile $< x^{**} \leq 0.480$ g/mile NMOG + NOx or 0.0175 g/mile $< x^{**} \leq 0.035$ g/mile PM	3
0.480 g/mile $< x \leq 0.720$ g/mile NMOG + NOx	1 *
>0.720 g/mile NMOG + NOx	0
> 0.035 g/mile PM	0
Total Number of OBD Emissions Threshold Noncompliances	3

* This is a subset of the 3 total OBD emissions threshold noncompliances, so if for example 3 noncompliances are used for the range $0.240 < x \leq 0.480$ NMOG + NOx or $0.0175 < x \leq 0.035$ g/mile PM, then 0 noncompliances will be approved for the range $0.480 < x \leq 0.720$ g/mile NMOG + NOx.

** “x” is the emission level when the malfunction is first detected.

- ii. Manual Transmission Vehicles. For Generation 3 manual transmission vehicles, threshold monitors must detect a malfunction before NMOG + NOx emissions exceed 0.285 g/mile, and before PM emissions exceed 0.0175 g/mile. Threshold monitors that fail to detect a malfunction before these limits are exceeded shall be considered OBD Emissions Threshold Noncompliances. Upon a Final OBD Demonstration, the Proposed Emissions Modification for manual transmission vehicles may not show more than 7 OBD Emissions Threshold Noncompliances. Of these 7 OBD Emissions Threshold Noncompliances, for manual transmission vehicles, no more than 1 monitor that fails to demonstrate malfunction detection before emissions exceed 0.570 g/mile NMOG + NOx, will be approved; provided, however, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.855 g/mile NMOG + NOx will be approved. In all cases, no monitors that fail to demonstrate malfunction detection before emissions exceed 0.035 g/mile PM will be approved. The

OBD Emissions Threshold Noncompliances are summarized in Table 8 for manual transmission vehicles.

TABLE 8. OBD EMISSION THRESHOLD NONCOMPLIANCES FOR GENERATION 3 MANUAL TRANSMISSION VEHICLES.

EMISSIONS LEVELS	APPROVABLE NUMBER OF NONCOMPLIANCES
≤ 0.285 g/mile NMOG + NO _x and ≤ 0.0175 g/mile PM	N/A; compliant
0.285 g/mile $< x^{**} \leq 0.570$ g/mile NMOG + NO _x or 0.0175 g/mile $< x^{**} \leq 0.035$ g/mile PM	7
0.570 g/mile $< x^{**} \leq 0.855$ g/mile NMOG + NO _x	1 *
> 0.855 g/mile NMOG + NO _x	0
> 0.035 g/mile PM	0
Total # OBD Emissions Threshold Noncompliances	7

* This is a subset of the 7 total OBD threshold noncompliances, so if for example 7 noncompliances are used for the range $0.285 < x \leq 0.570$ NMOG + NO_x, then 0 noncompliances will be approved for the range $0.570 < x \leq 0.855$ g/mile NMOG + NO_x.

** “x” is the emission level when the malfunction is first detected.

- iii. In the event of a discrepancy between the text herein and the tables, the tables shall govern. No more than 8 noncompliances, plus unused OBD Emissions Threshold Noncompliances, for issues other than OBD Emissions Threshold Noncompliances (e.g., failure to meet In-Use Monitor Performance Ratio requirements, failure to track and report EI-AECDs, failure to report all required data to a scan tool) that would typically be issued during annual new vehicle OBD certification review will be approved.

3.4.5 Include the results from Critical OBD Demonstration testing for PM filter efficiency, SCR catalyst efficiency, EGR low flow, injection quantity minimum, injection quantity maximum, and DOC for automatic transmission vehicles. Critical OBD Demonstration tests must demonstrate compliance with the OBD requirements in subparagraph 3.4.4.

3.5 Alternate OBD Criteria: If Settling Defendants are unable to comply with any of the limitations concerning OBD noncompliances described in subparagraphs 3.2.5, 3.3.2, or 3.4.4, and no later than 5 Days after completing the Final OBD Demonstration testing, Settling Defendants must provide EPA/CARB with formal notice of such noncompliance. Subsequently, and no later than 30 Days after such formal notice, Settling Defendants may submit to EPA/CARB a proposal requesting approval of additional OBD noncompliances, as described below. Settling Defendants must certify any such proposal in accordance with the certification requirements of Paragraphs 33 and 34 of the Consent Decree.

3.5.1 If Settling Defendants elect to submit a proposal requesting additional OBD Emission Threshold Noncompliances, and if in such proposal Settling Defendants demonstrate the following, EPA/CARB will approve the requested additional OBD Emissions Threshold Noncompliances:

- i. Settling Defendants have used good engineering judgment in determining the malfunction criteria;
- ii. The malfunction criteria will result in a monitor that meets the in-use monitor performance ratio requirements specified in Cal. Code Regs. tit. 13, § 1968.2 (2013);
- iii. The malfunction criteria are set as stringently as technologically feasible with respect to detecting a malfunction at the lowest possible tailpipe emission levels using the existing monitoring strategies and existing series production hardware on the vehicle, except for hardware changes that are the result of the Emissions Modification being demonstrated (i.e., for Generation 1, NO_x Trap, exhaust flap and EGR filter; for Generation 3, DOC and Second NO_x Sensor, in a Subsequent Service Action);
- iv. The malfunction criteria will minimize false detection of a malfunction when the monitored component is within the performance specifications required under this Appendix B (i.e., vehicle emissions are less than the Maximum Emissions Modification Limits) for components aged to the end of the Full Useful Life;
- v. Settling Defendants have provided all emission data concerning the emission levels at which the malfunctions are detected; and
- vi. All malfunctions are detected before NMOG + NO_x emissions exceed 0.720 g/mile and before PM emissions exceed 0.035 g/mile PM (for manual transmission vehicles, 0.855 g/mile NMOG + NO_x, and 0.035 g/mile PM).

3.5.2 Additional OBD Noncompliance Allowances: If Settling Defendants submit a proposal requesting additional OBD Emission Threshold Noncompliances, and EPA/CARB determine that Settling Defendants have failed to make the demonstration described above, no additional OBD Emission Threshold Noncompliances will be allowed. However, Settling Defendants may use any unused noncompliances in the following manner: 2 unused OBD Emission Threshold Noncompliances for monitors that fail to demonstrate malfunction detection before emissions exceed 0.240 g/mile of NMOG + NO_x but demonstrate malfunction detection before emissions exceed 0.480 g/mile of NMOG + NO_x (for manual transmission vehicles, between 0.285 and 0.570 g/mile, respectively) may be transferred within the same Generation to satisfy 1 OBD Emissions Threshold Noncompliance for monitors that fail to demonstrate malfunction detection before emissions exceed 0.480 g/mile of NMOG + NO_x but demonstrate

malfunction detection before emissions exceed 0.720 of NMOG + NO_x (for manual transmissions, between 0.570 and 0.855 g/mile, respectively). Alternatively, 1 unused OBD Emissions Threshold Noncompliance for monitors that fail to demonstrate malfunction detection before emissions exceed 0.480 of NMOG + NO_x but demonstrate malfunction detection before emissions exceed 0.720 g/mile of NMOG + NO_x may be transferred within the same Generation to satisfy 2 OBD noncompliances for monitors that fail to demonstrate malfunction detection before emissions exceed 0.240 of NMOG + NO_x but demonstrate malfunction detection before emissions exceed 0.480 g/mile of NMOG + NO_x (for manual transmissions, between 0.285 and 0.570 g/mile, respectively). No unused OBD Emissions Threshold Noncompliances may be transferred to other Generations or between automatic or manual transmission groups. No more than 2 OBD Emissions Threshold Noncompliances for monitors that fail to demonstrate malfunction detection before emissions exceed 0.480 but demonstrate malfunction detection before emissions exceed 0.720 g/mile of NMOG + NO_x (for manual transmissions, between 0.570 and 0.855 g/mile, respectively) and no more than 4 OBD Emissions Threshold Noncompliances for monitors that fail to demonstrate malfunction detection before emissions exceed 0.240 g/mile of NMOG + NO_x but demonstrate malfunction detection before emissions exceed 0.480 g/mile of NMOG + NO_x (for manual transmissions, between 0.285 and 0.570 g/mile, respectively) may be transferred.

3.5.3 Notwithstanding the prohibition against additional OBD Emission Threshold Noncompliances described in subparagraph 3.5.2, if Settling Defendants are unable to comply with the limitations therein, Settling Defendants may obtain a further increase in the number of available OBD Emissions Threshold Noncompliances, provided that (1) no monitors that fail to demonstrate malfunction detection before NMOG + NO_x emissions exceed 0.720 g/mile (0.855 g/mile for manual transmission vehicles) shall be permitted, and (2) Settling Defendants must provide the following additional increments to the Extended Emissions Warranty periods specified in subparagraphs 3.9.4 (i) – (ii) (Additional Warranty Extensions):

- i. For each additional OBD Emissions Threshold Noncompliance concerning a monitor that fails to demonstrate malfunction detection before NMOG + NO_x emissions exceed 0.240 g/mile but that demonstrate malfunction detection before NMOG + NO_x emissions exceed 0.480 g/mile (for manual transmission vehicles, 0.285 g/mile and 0.570 g/mile, respectively), the Extended Emissions Warranty period must be extended by 3 months and 3,000 miles; and
- ii. For each additional OBD Emissions Threshold Noncompliance concerning a monitor that fails to demonstrate malfunction detection before NMOG + NO_x emissions exceed 0.480 g/mile (for manual transmission vehicles, 0.570 g/mile), the Extended Emissions Warranty period must be extended by 6 months and 6,000 miles.

3.5.4 If Settling Defendants seek to increase the OBD noncompliances pursuant to subparagraph 3.5.3, Settling Defendants must submit to EPA/CARB a proposal describing the additional OBD noncompliances and any corresponding Additional Warranty Extensions for EPA/CARB approval. If the proposal meets the requirements of subparagraphs 3.5.3 and 3.5.4, EPA/CARB will approve the proposal. Together with any such proposal, Settling Defendants must submit for EPA/CARB approval a draft Additional Warranty Extension Statement describing the additional OBD noncompliances and any Additional Warranty Extensions required by subparagraph 3.5.3. The Additional Warranty Extension Statement must state the warranty period as the sum of the warranty period for the Extended Emissions Warranty described in Paragraph 3.9 and any Additional Warranty Extensions under subparagraph 3.5.3.

3.5.5 Upon EPA and CARB approval, Settling Defendants must disseminate the Additional Warranty Extension Statement by (1) mailing the approved Additional Warranty Extension Statement to the relevant Eligible Owners and Eligible Lessees and (2) by posting and maintaining the approved notice on a VIN-searchable website, in the form and manner described in subparagraph 3.9.6.

3.6 OBD Demonstration Requirements applicable to automatic and manual transmission vehicles:

3.6.1 Settling Defendants shall not use Oven-aged Parts to represent parts aged to Full Useful Life over the official durability run on the SRC cycle.

3.6.2 For NOx Trap, DOC, and SCR, Settling Defendants shall use catalysts deteriorated to the malfunction criteria using methods established to represent real world catalyst deterioration under normal and malfunctioning engine operating conditions. Oven aging and Engine Bench aging using diesel and/or gasoline fuel may be used to age the threshold catalysts provided such aging is representative of real world deterioration.

3.6.3 Automatic Transmission Vehicles. For each generation, Settling Defendants shall use a complete FUL AT vehicle aged over the official durability run on the SRC cycle for the AT Final OBD Demonstration test vehicle. For each generation, Settling Defendants shall adhere to the following for the required Final OBD Demonstration:

- i. Unless specified otherwise below, Settling Defendants shall use a complete FUL AT vehicle aged over the official durability run on the SRC cycle, except for the OBD threshold part being demonstrated. For DOC, DPF, and SCR demonstrations, Settling Defendants may deteriorate according to the requirements of subparagraph 3.6.3(ii), below. If Settling Defendants elect not to conduct aging according to the requirements of subparagraph 3.6.3 (ii), Settling Defendants must conduct FUL aging over the official durability run on the SRC cycle on the unmonitored components for each demonstration test.

- ii. Settling Defendants shall deteriorate the OBD Threshold parts for DOC, DPF and SCR demonstrations and provide information as follows:
 - a. Generation 1
 - 1. DOC: Engine Bench-aged DPF (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
 - 2. DPF: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF deteriorated to malfunction threshold (e.g., drilled out, removed end caps).
 - 3. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.
 - b. Generation 2
 - 1. DOC: Engine Bench-aged DPF (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
 - 2. DPF: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF deteriorated to malfunction threshold (e.g., drilled out, removed end caps).
 - 3. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.
 - c. Generation 3
 - 1. DOC: Engine Bench-aged DPF/SCR (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to

malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions. The underfloor SCR catalyst shall be the part from the FUL AT vehicle aged over the official durability run on the SRC cycle.

2. DPF: Engine Bench-aged DOC and DPF/SCR (using diesel fuel for both) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF/SCR deteriorated (e.g., drilled out, removed end caps) to DPF malfunction threshold. The underfloor SCR catalyst shall be the part from the FUL AT vehicle aged over the official durability run on the SRC cycle.
3. SCR: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF/SCR and underfloor SCR simultaneously deteriorated to SCR malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
4. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.

- iii. For each generation, Settling Defendants shall complete Final OBD Demonstration testing.

3.6.4 Manual Transmission Vehicles. For each Generation for the MT Final OBD Demonstration test vehicle, Settling Defendants may use complete FUL aged engine from the AT vehicle, which was aged over the official durability run on the SRC cycle. If Settling Defendants elect not to use the FUL aged engine from the AT vehicle, Settling Defendants must age the MT vehicle to FUL over the official durability run on the SRC cycle. The FUL aged engine from the AT vehicle includes:

- i. The complete FUL aged exhaust system from AT vehicle aged over the official durability run on the SRC cycle; and
- ii. The complete FUL aged aftertreatment system from AT vehicle aged over the official durability run on the SRC cycle.
- iii. For each Generation, Settling Defendants shall adhere to the following for the required Final OBD Demonstration:

- iv. Unless specified otherwise below, Settling Defendants shall use complete FUL vehicle described in subparagraph 3.6.4 above, except for the OBD threshold part being demonstrated. For DOC, DPF, and SCR demonstrations, Settling Defendants may deteriorate according to subparagraph 3.6.4 (v), below. If Settling Defendants elect not to deteriorate according to the requirements of subparagraph 3.6.4 (v), Settling Defendants must conduct FUL vehicle aging over the official durability run on the SRC cycle on the unmonitored components for each demonstration test.
- v. Settling Defendants shall deteriorate the OBD Threshold parts for DOC, DPF and SCR demonstrations and provide information as follows:
 - a. Generation 1:
 - 1. DOC: Engine Bench-aged DPF (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
 - 2. DPF: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF deteriorated to malfunction threshold (e.g., drilled out, removed end caps).
 - 3. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.
 - b. Generation 2:
 - 1. DOC: Engine Bench-aged DPF (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
 - 2. DPF: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF deteriorated to malfunction threshold (e.g., drilled out, removed end caps).

3. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.

c. Generation 3:

1. DOC: Engine Bench-aged DPF/SCR (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DOC deteriorated to malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions. The underfloor SCR catalyst shall be the part from the FUL AT vehicle aged over the official durability run on the SRC cycle.
2. DPF: Engine Bench-aged DOC and DPF/SCR (both using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF/SCR deteriorated (e.g., drilled out, removed end caps) to DPF malfunction threshold. The underfloor SCR catalyst shall be the part from the FUL AT vehicle aged over the official durability run on the SRC cycle.
3. SCR: Engine Bench-aged DOC (using diesel fuel) equivalent to Full Useful Life over the official durability run on the SRC cycle with DPF/SCR and underfloor SCR simultaneously deteriorated to SCR malfunction threshold using procedures representative of real world catalyst system component deterioration under normal and malfunctioning engine operating conditions.
4. Supply engineering data to demonstrate equivalence between engine bench aging (using diesel fuel) and aging over the official durability run on the SRC cycle.

- vi. For each Generation, Settling Defendants shall complete Final OBD demonstration testing.

3.7 Continued Compliance: Except as otherwise stated in this Appendix B, and as if the vehicles were originally certified to the Maximum Emissions Modification Limits required under any Approved Emissions Modification, during the regulatory useful life of the vehicles, Modified Vehicle test groups remain subject to, and Settling Defendants must comply with: (1) all EPA and CARB requirements for in-use testing under 40 C.F.R. Part 86, Subpart S, and Cal. Code Regs. tit. 13, § 2110-2140; (2) OBD enforcement pursuant to Cal. Code Regs. tit. 13, § 1968.5, provided that noncompliance determinations shall be based on the emissions threshold

malfunction criteria set forth in this Appendix B; (3) federal defect reporting requirements under 40 C.F.R. Part 85, Subpart T; and (4) California Emissions Warranty and Information Reporting requirements under Cal. Code Regs. tit. 13, §§ 2141-2146. As stated in Section VIII of this Appendix B (Stipulated Penalties and Other Stipulated Remedies for Noncompliance), EPA and CARB reserve all rights and authorities to impose consequences if Settling Defendants fail to comply with these testing and reporting requirements, including if such testing demonstrates that the Modified Vehicles exceed the Maximum Emissions Modification Limits or the OBD emission threshold malfunction criteria set forth in this Appendix B. For OBD in-use compliance measurements, no add-ons are granted; for OBD in-use testing, Settling Defendants may precondition the test vehicle through two HWFET cycles to allow DeSO_x events to occur. For purposes of emissions compliance determinations subsequent to EPA/CARB's Notice of Approved Emissions Modification, the Maximum Emissions Modification Limits set forth in Tables 1 – 3 shall be adjusted as described in subparagraphs 3.7.1 – 3.7.3 below. Settling Defendants may not apply the following in-use add-ons to any of the demonstrations that must be included in an Emissions Modification Proposal, and such add-ons apply only to in-use vehicles that have been modified in accordance with the applicable Approved Emissions Modification.

3.7.1 The applicable in-use NO_x + NMOG Maximum Emissions Modification Limits for Generation 1 shall be determined by adding 0.030 g/mile to the FTP levels and 0.050 g/mile to the SFTP levels specified in Table 1;

3.7.2 The applicable in-use high altitude NO_x + NMOG Maximum Emissions Modification Limits for Generations 2 and 3 shall be determined by adding 0.050 g/mile to the FTP@1620m levels shown in Tables 2 and 3 respectively; and

3.7.3 The applicable in-use SFTP NO_x + NMOG Maximum Emissions Modification Limits for Generation 2 shall be determined by adding to 0.050 g/mile to the levels shown in Table 2.

3.8 Costs: Settling Defendants must incur and satisfy costs associated with each Approved Emissions Modification, including any Subsequent Service Actions, as required under Appendix A.

3.9 Warranty: Settling Defendants must provide an Emission Control System and an Engine Long Block warranty (collectively, the “Extended Emissions Warranty”). The Extended Emissions Warranty shall cover all parts and labor, as well as the cost or provision of a loaner vehicle for warranty service lasting longer than 3 hours. Settling Defendants must not impose on consumers any fees or charges, and must pay any fees or charges imposed by its dealers related to the warranty service.

3.9.1 The Emissions Control System warranty must cover all components which are replaced as part of the Approved Emissions Modification and any component which can reasonably be impacted by effects of the Approved Emissions Modification, such as increased thermal load or cycling, increased soot load, increased use of EGR, increased DPF regeneration, and increased fuel injection pressure. The Emission Control System

Warranty shall cover the following parts, as further specified in the applicable Extended Emissions Warranty Parts Coverage List submitted by Settling Defendants with each Emissions Modification Proposal, as further described in subparagraph 4.3.10:

- i. The entire exhaust after treatment system including the DOC, the SCR catalyst (if applicable), the dosing injector and other DEF system components (if applicable), the NO_x Trap (if applicable), all sensors and actuators, and the exhaust flap;
- ii. The entire fuel system, including the fuel pumps, high pressure common rail, fuel injectors, and all sensors and actuators;
- iii. EGR system including the EGR valve, EGR cooler, EGR filter, all related hoses and pipes, and all sensors and actuators;
- iv. The turbocharger;
- v. The OBD System and any malfunctions detected by the OBD systems other than those related to the transmission; and
- vi. The DPF.

3.9.2 The Extended Emissions Warranty shall cover each and every DPF that has failed as a result of implementing any Approved Emissions Modification. If Settling Defendants can demonstrate to the satisfaction of EPA/CARB in a Proposed Emissions Modification that Settling Defendants' dealers can adequately distinguish between a DPF that has reached the maximum ash load and needs to be replaced as part of normal maintenance and a DPF that has failed as a result of implementing such Approved Emissions Modification, then the Extended Emissions Warranty applicable to such Approved Emissions Modification does not need to cover DPFs that need replacement as part of normal maintenance. If Settling Defendants fail to make this demonstration then the Extended Emissions Warranty must cover each and every DPF.

3.9.3 The Engine Long Block warranty must cover the engine sub-assembly that consists of the assembled block, crankshaft, cylinder head, camshaft, and valve train.

3.9.4 The warranty period for the Extended Emissions Warranty shall be both:

- i. For Generation 1 and 2, 10 years or 120,000 actual miles whichever comes first; for Generation 3, 10 years or 150,000 actual miles whichever comes first; and
- ii. 4 years or 48,000 miles, whichever comes first, from date and mileage of implementing the Emissions Modification, except for vehicles offered for resale, in which case, from the date and mileage of the first resale

transaction after the modification to the first person who in good faith purchases the vehicle for purposes other than resale.

3.9.5 If Settling Defendants are required to provide Additional Warranty Extensions pursuant to subparagraph 3.5.3, the Additional Warranty Extensions shall extend the warranty periods specified in subparagraphs 3.9.4 (i) – (ii).

3.9.6 Settling Defendants must make available online a searchable database that includes all 2.0 Liter Subject Vehicles, by which users, including Eligible Owners, Eligible Lessees, and prospective purchasers, may conduct a free-of-charge search by vehicle VIN to determine whether the Extended Emissions Warranty and any Additional Warranty Extensions apply to a specific vehicle. To satisfy this requirement, Settling Defendants may include a webpage that meets these specifications on the Emissions Modification Database, pursuant to subparagraph 3.1.9. Upon the modification of each and every Modified Vehicle, Settling Defendants must identify within the database that such vehicle is covered by the Extended Emissions Warranty and Additional Warranty Extensions, as applicable, by displaying the applicable warranty disclosure statements when a user enters the VIN. Settling Defendants must provide the VINs for all such vehicles to EPA/CARB within 15 Days of EPA/CARB's request.

3.9.7 Settling Defendants must also maintain a database that includes all 2.0 Liter Subject Vehicles, by which Volkswagen and Audi authorized dealers and Volkswagen and Audi authorized service facilities (collectively, "Dealers") shall search by vehicle VIN to determine whether the Extended Emissions Warranty and any Additional Warranty Extensions apply to a specific 2.0 Liter Subject Vehicle. Settling Defendants shall establish procedures such that the vehicle VIN shall dictate component or system coverage described in the approved Extended Emissions Warranty Component List. Such procedures shall include a feature on the database by which Dealers shall enter the identification number for any part pertaining to a Modified Vehicle and the database shall inform all Dealers whether such part is covered by the Extended Emissions Warranty, in accordance with the approved Extended Emissions Warranty Component List. Settling Defendants must maintain the Extended Emissions Warranty Component List and the Dealer database to ensure current part identification numbers are listed. In no event shall warranty coverage be subject to service writers' discretion.

3.9.8 The Extended Emissions Warranty is associated with the car, and remains available to any and all subsequent owners and operators.

3.9.9 The Extended Emissions Warranty shall not supersede or void any outstanding warranty. To the extent there is a conflict in any provision(s) of this warranty and any outstanding warranty, that conflict shall be resolved to the benefit of the consumer.

3.9.10 The Extended Emissions Warranty shall not modify, limit, or affect any state, local or federal legal rights available to the owners.

3.9.11 Any waiver of any provision of the Extended Emissions Warranty by an owner is null and void.

IV. EMISSIONS MODIFICATION PROPOSAL REQUIREMENTS

4.1 Settling Defendants may submit to EPA and CARB, for any test group or combination of test groups of the 2.0 Liter Subject Vehicles, an Emissions Modification Proposal according to the schedule and requirements specified in this Section IV. EPA/CARB will not approve an Emissions Modification Proposal unless and until Settling Defendants have provided in a Submission or Submissions all materials required under Section IV of this Appendix B to EPA/CARB.

4.2 Each Emissions Modification Proposal must be submitted by Settling Defendants to EPA and CARB on or before the dates and as specified in the chart below. EPA/CARB will use the agencies' best efforts to either approve or disapprove each complete proposal (as detailed herein) within 45 Days of the actual Submission. To facilitate an expeditious review and approval process, Settling Defendants may submit data and Emissions Modifications Proposals at any time before the deadlines below. Regardless of the time of Submission, no Approval can be made until after entry of the Consent Decree. If any of the Final Submittal Deadlines below expire prior to the Date of Entry, such deadlines will be extended to 14 Days beyond the Date of Entry.

Generation	Emissions Modification Proposal	Settling Defendants' Expected Submittal Date	Settling Defendants' Final Submittal Deadline
1	Parts A, B, & C	November 11, 2016	January 27, 2017
2	Parts A, B, & C	December 16, 2016	March 3, 2017
3	Parts A, B, & C	July 29, 2016	October 14, 2016
3	Part D	August 15, 2017	October 30, 2017

4.3 Emissions Modification Proposal, Part A: For any Emissions Modification Proposal, Settling Defendants must submit the following information in a submission clearly marked as "Proposed Emissions Modification, Part A: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles]." Except as specified herein, the Emissions

Modification Proposal must contain all the elements of an Ordered Recall Plan/Remedial Plan, pursuant to 40 C.F.R. Part 85, Subpart S and Cal. Code Regs., tit. 13, § 2125.

4.3.1 Statement of the Emissions Levels demonstrated by the Required Emissions Test Procedure results concerning the corresponding vehicles, in accordance with Paragraph 3.1, above.

4.3.2 All emissions data from a vehicle that has been modified pursuant to the Proposed Emissions Modification that demonstrates each of the following:

- i. Compliance to the Maximum Emissions Modification Limits, demonstrated with all data from emissions tests conducted according to the FTP, US06, SC03, and Hwy FE, 20° F FTP (no specific compliance limits), and 50° F FTP (no specific compliance limits) test procedures specified in 40 C.F.R. Parts 86 and 600, and the applicable California regulations (the “Required Emissions Test Procedures”), including the Emission Control System Data Parameters, set forth in Appendix B-2, for all tests, and including the preconditioning tests. The FTP test must be performed at Sea Level and at a high altitude of 1,620 meters. For automatic transmissions all tests are conducted in driving mode “D.” Such demonstration must account for emissions deterioration described in subparagraph 4.3.4 and infrequent regeneration adjustment factors. The most recent available DFs from the Engineering or the Official Durability vehicles at the time of testing, and IRAFs from FTP75 measurement of a test vehicle at Sea Level, are to be used. For Generation 1, to ensure the determination of a valid IRAF for the infrequent desulfurization of the NOx Trap, the HWFET cycle may be used for measurement of DeSOx regeneration emissions and the Unified Drive Cycle (UDC or “LA-92”) for sulfur and soot accumulation. For Generation 2 and 3, the Unified Drive Cycle (UDC or “LA-92”) may be used for soot accumulation. Settling Defendants may conduct emissions demonstrations using only the official durability vehicle;
- ii. Fuel economy measured by using the FTP, US06, SC03, HWFET, and 20°F FTP test procedures, based on A-to-B testing using the same basic testing conditions, including but not limited to fuel, on the same vehicle that compares (A) vehicles without the 2014 Reflash and with the Road Mode Calibration active and operative during the batch of test cycles and (B) vehicles to which Settling Defendants have applied the Proposed Emissions Modification; and
- iii. All emissions results at 50 degrees Fahrenheit and 20 degrees Fahrenheit over the FTP test cycle.

4.3.3 For formaldehyde emissions, in lieu of test results, Settling Defendants may provide a statement in the Proposed Emissions Modification that the Modified

Vehicles comply with the Maximum Emissions Modification Limits for formaldehyde specified in Tables 1 – 3, in accordance with 40 C.F.R. § 86.1829-01(b)(iii)(E).

4.3.4 EPA/CARB may provide approval for Generations 1 and 2 based on Official Durability Data at 60,000 miles and Engineering Durability Data to 90,000 miles. EPA/CARB may provide approval for Generation 3 based on Official Durability Data obtained by testing a representative Generation 3 vehicle with mileage of at least 60,000 miles. Settling Defendants must continue testing through Full Useful Life and provide Official Durability Data within 3 weeks of reaching 90,000 miles, within 3 weeks of reaching each 30,000 mile interval, and within 3 weeks of completing Full Useful Life, to EPA and CARB (new IRAF calculations to be reported only at 4,000 miles and Full Useful Life; intermediate points will be based on original 4,000 mile projection). Settling Defendants must complete Official Durability Data testing for all Generations no later than July 31, 2017. Such data must include without limitation:

- i. For Generation 1 and 2, Settling Defendants must provide all engineering durability testing that Settling Defendants conducted using preliminary software and Calibration data. Settling Defendants must also provide to EPA and CARB all software and Calibration data changes made during the course of durability testing.
- ii. For Generation 3, Settling Defendants must provide the DOC replacement interval, if replacement is necessary, as soon as intermediate emission testing within durability shows exceedance of the Maximum Emissions Modification Limits.
- iii. Settling Defendants must provide EPA and CARB with all Full Useful Life emissions durability testing results at a minimum of 75% of Full Useful Life mileage for each Generation, within 3 weeks of completing such testing, and include any adjustments to DFs observed concerning vehicles that have been modified pursuant to the Approved Emissions Modification. Subsequently, Settling Defendants must complete 100% Full Useful Life emissions durability testing and provide EPA and CARB with all testing results within 3 weeks of completing such testing, including such data demonstrating that the Modified Vehicles remain compliant as follows: 150,000 miles for Model Year 2015 vehicles, and 120,000 miles for Model Year 2014 and earlier vehicles.

4.3.5 A complete and extensively detailed list of each and every AECD and EI-AECD, including descriptions of SCR Inducements, that the Modified Vehicles will have after receiving the applicable Proposed Emissions Modification. For any AECD that results in a reduction in effectiveness of the Emission Control System, the list must include the rationale for why the AECD is not a Defeat Device. EPA/CARB will approve only those AECDs that are not Defeat Devices (and that are consistent with EPA and CARB policies and guidelines for approval of AECDs). Non-existent EI-AECD counters, as that term is defined in Cal. Code Regs. tit. 13, § 1968.2, will constitute only one

noncompliance. No further EI-AECD counters will be requested by EPA/CARB. Settling Defendants must provide a list of all EI-AECD counters existing at the time the Proposed Emissions Modification is submitted.

4.3.6 A description of any and all reasonably predictable changes, adverse or otherwise, on vehicle attributes which may reasonably be important to vehicle owners, including: fuel economy, reliability, durability, Noise Vibration and Harshness, vehicle performance (for example, 0-60 mph time, top speed, etc.), and drivability.

4.3.7 A description of any and all reasonably predictable changes, adverse or otherwise, on aspects of vehicle maintenance which may reasonably be important to vehicle owners, including but not limited to oil changes, EGR cleaning, DEF refill, and DPF replacement.

4.3.8 A draft Emissions Modification Disclosure for EPA/CARB Approval regarding the Proposed Emissions Modification, designed for dissemination to Eligible Owners, Eligible Lessees and, as applicable, prospective purchasers, as required under subparagraph 3.1.10, that describes in plain language:

- i. The Proposed Emissions Modification generally, including but not limited to the increased emissions resulting from the Proposed Emissions Modification relative to the levels contained in the previously issued certificates of conformity for the vehicles;
- ii. All software changes;
- iii. All hardware changes, including but not limited to any and all future recalls associated with the Proposed Emissions Modification, such as any modifications of the OBD system;
- iv. For Generation 3, a clear explanation of each Subsequent Service Action required under the applicable Proposed Emissions Modification, to include at least (1) a software Reflash and (2) installation of the Second NOx Sensor and a replacement DOC (if needed), and the expected schedule and/or maintenance intervals for such replacements;
- v. Any and all reasonably predictable changes, resulting from the Proposed Emissions Modification, including the following:
 - a. Reliability, durability, fuel economy, Noise Vibration and Harshness, vehicle performance (for example, 0-60 mph time, top speed, etc.), drivability, and any other vehicle attributes that may reasonably be important to vehicle owners; and

- b. Oil changes, EGR cleaning, DEF refill, DPF replacement, and any other aspects of vehicle maintenance that may reasonably be important to vehicle owners;
- vi. A basic summary of how Eligible Owners and Eligible Lessees can obtain the Proposed Emissions Modification and the logistics involved in doing so;
- vii. OBD system limitations that make identification and repair of any components difficult or even impossible, compromise warranty coverage, or may reduce the effectiveness of inspection and maintenance program vehicle inspections; and
- viii. Any other disclosures required under Appendix A, including the Buyback option.

4.3.9 A draft Extended Emissions Warranty statement in plain language intended for dissemination to Eligible Owners, Eligible Lessees, and, as applicable, prospective purchasers. If Settling Defendants attempt to make the demonstration concerning DPF warranty-coverage described under subparagraph 3.9.2, Settling Defendants must also include a draft statement in plain language concerning conditions under which the DPF is, or is not, covered by the warranty.

4.3.10 A proposal for the list of parts, including part identification numbers, covered by the Extended Emissions Warranty (the “Extended Emissions Warranty Parts Coverage List”). Settling Defendants must include in this proposal:

- i. A complete list of any and all parts included in and related to the Emissions Control System, including any parts or components which can reasonably be impacted by effects of the Approved Emissions Modification;
- ii. A complete list of any parts Settling Defendants propose to exclude from coverage by the Extended Emissions Warranty; and
- iii. Settling Defendants’ justification for excluding such parts from the Extended Emissions Warranty.

4.3.11 Draft labels for EPA/CARB approval, with correct label values for each model type corresponding to the Emissions Modification Proposal, designed to be permanently affixed to each and every Modified Vehicle, as required under subparagraph 3.1.6 of this Appendix B.

4.3.12 The complete software functional description document in the German language, and the table of contents of the functional description document in the English language, the compiled software files (i.e., .HEX Files), and the complete memory map

(i.e., .A2L File), including all such data applicable to the vehicles eligible for modification under the Proposed Emissions Modification before and after application of the Proposed Emissions Modification, as well as a description of any changes to the ECU code functionality, including a description of all Defeat Devices in the original software and how such Defeat Devices were removed and any calibration changes resulting from the Proposed Emissions Modification. Settling Defendants must provide English language translations of excerpts of the functional description document in response to reasonable requests by EPA/CARB.

4.3.13 Repair instructions concerning the Modified Vehicles that Settling Defendants must, upon receiving EPA/CARB's Notice of Approved Emissions Modification, distribute to Dealers, in accordance with Cal. Code Regs. tit. 13, § 1969. Settling Defendants must also provide contemporaneously to EPA and CARB a copy of each communication concerning the Approved Emissions Modification directed at Dealers.

4.3.14 An affidavit from a United States Volkswagen Group of America corporate official and from a German Volkswagen AG corporate official certifying, in accordance with Paragraphs 33 and 34 of this Consent Decree, that once the Emissions Modification is applied, the resulting Modified Vehicle contains no Defeat Devices.

4.3.15 Certification, in accordance with Paragraphs 33 and 34 of this Consent Decree, with respect to all information contained in the Emissions Modification Proposal.

4.4 Emissions Modification Proposal, Part B: For any Emissions Modification Proposal, Settling Defendants must submit the following information in a submission clearly marked as "Proposed Emissions Modification, Part B: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles]."

4.4.1 Statement of OBD Compliance: A statement, based on the OBD demonstrations to date, that Settling Defendants believe the OBD system fully complies with the OBD requirements set forth in Paragraphs 3.1 – 3.6. The requirements of Cal. Code Regs. tit. 13, § 1968.2 apply in full, provided, however, that for monitoring requirements that specify threshold-based emissions malfunction criteria, Settling Defendants must use the malfunction criteria set out in Paragraphs 3.1 – 3.4 of this Appendix B.

4.4.2 Statement of OBD Noncompliances Pursuant to Paragraphs 3.1 – 3.6: If the OBD system does not fully comply with Paragraphs 3.1 – 3.6, Settling Defendants must specify, and provide a description of, all known and expected OBD Emission Threshold Noncompliances and all other OBD noncompliances, and all requested OBD noncompliance allowances, pursuant to the Alternate OBD Criteria under Paragraph 3.5.

4.4.3 For Critical OBD Demonstrations defined in this Appendix B, all data necessary for EPA and CARB to evaluate Settling Defendants' demonstrations of the

OBD levels as provided in Paragraphs 3.1 – 3.6 of this Appendix, using the protocols and processes required under Cal. Code Regs. tit. 13, § 1968.2(h).

4.4.4 A summary table for the Proposed Emissions Modification Calibration, monitoring checklist, descriptions of monitoring strategies that were changed between the original Calibration and the Proposed Emissions Modification Calibration, and testing and reporting as required by Cal. Code Regs. tit. 13, § 1968.2(j)(1) (i.e., verification of standardized requirements on production vehicles). The summary table for automatic and manual transmission vehicles for each Generation may utilize automatic transmission data and must note where manual transmission data are different.

4.5 Emissions Modification Proposal, Part C: For any Emissions Modification Proposal, Settling Defendants must submit the following information in a submission clearly marked as “Proposed Emissions Modification, Part C: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles].”

4.5.1 All emission data from PEMS testing on two vehicles that have received the Proposed Emissions Modification. Settling Defendants must generate these data by testing over the ICCT Urban/Downtown Los Angeles Route and the Combined Uphill/Downhill and Highway Route, each attached hereto as Appendix B-3. Both vehicles must be tested at the same time and “chase” each other to experience the same driving ambient conditions. Settling Defendants must submit all raw data generated by the PEMS testing, including speed, load, and second-by-second emissions data, etc., in a CSV format that can be imported into a spreadsheet or database. From these data, Settling Defendants must calculate average emissions results for NO_x, THC, CO, and CO₂.

4.5.2 All emissions data from in-use vehicles that have received the applicable Proposed Emissions Modification, including data demonstrating compliance to the Maximum Emissions Modification Limits, over the Required Emissions Test Procedures (FTP, US06, SC03, and HWFET), accounting for infrequent regeneration adjustment factors as measured in the durability runs. For each Generation, two in-use vehicles with automatic transmission and one in-use vehicle with manual transmission are required (i.e., a total of nine vehicles). For all Proposed Emissions Modifications for Model Year 2012 and prior years, each in-use vehicle must have between 80,000 – 100,000 miles, accumulated before the vehicle received the applicable Approved Emissions Modification. At a minimum, one of the three in-use vehicles must have accumulated at least 90,000 miles. For all Proposed Emissions Modifications for Model Year 2013 and newer, each Model Year must have accumulated at least 15,000 miles on average per year in use.

4.6 Emissions Modification Proposal, Part D: For any Generation 3 Proposed Emissions Modification that requires a Subsequent Service Action, Settling Defendants must submit a proposal clearly marked as “Proposed Emissions Modification, Part D: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles].” Settling Defendants

must not implement any such Proposed Emissions Modification, Part D unless and until EPA/CARB Approve such proposal. Any such Proposed Emissions Modification, Part D must:

4.6.1 Provided that Settling Defendants are not proposing any change to the emissions and OBD Calibrations in the Modified Vehicles, make an OBD demonstration for the SCR system monitor and DOC monitor. If Settling Defendants are proposing any changes to the emissions or OBD Calibrations other than the SCR system monitor and the DOC monitor, Settling Defendants must conduct new OBD demonstrations for any OBD monitors corresponding to, or affected by, any such changes.

4.6.2 Require the installation of a Second NO_x Sensor and associated monitors, a compliant SCR system monitor, and a new DOC, if necessary.

4.6.3 Describe any updates to Parts A, B, and C that the installation of a new DOC, Second NO_x Sensor and associated monitors, and compliant SCR system monitors may require, including but not limited to, emissions, durability, and OBD demonstrations for the affected monitors.

4.6.4 Require the installation of any updates identified in the description required under subparagraph 4.6.3.

V. APPROVAL OR DISAPPROVAL OF PROPOSED EMISSIONS MODIFICATIONS

5.1 EPA/CARB will approve or disapprove each Proposed Emissions Modification according to the schedule and criteria in this Appendix B.

5.1.1 Approve: If EPA/CARB determine that a Proposed Emissions Modification satisfies all requirements herein, then EPA/CARB will timely notify Settling Defendants by letter clearly titled: “Approved Emissions Modification: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles],” after which Settling Defendants must implement the Approved Emissions Modification in accordance with the schedules and procedures set forth in Appendices A and B to this Consent Decree.

5.1.2 Disapprove:

- i. If EPA/CARB determine that a Proposed Emissions Modification fails to satisfy any requirement herein, then EPA/CARB will timely notify Settling Defendants by letter clearly titled: “Notice of Disapproval of Proposed Emissions Modification: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles]” that identifies the bases for the disapproval. Within 30 Days of EPA/CARB’s letter(s), Settling Defendants may provide a proposed remedy, and within 90 Days of EPA/CARB’s letter(s), Settling Defendants may submit one revised Proposed Emissions Modification that must resolve all of EPA/CARB’s

bases for disapproval. EPA/CARB will then issue either a “Final Notice(s) of Disapproval of Proposed Emissions Modification: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles]” or an “Approved Emissions Modification: [corresponding test group or combination of test groups of 2.0 Liter Subject Vehicles]”

- ii. Settling Defendants may dispute EPA/CARB’s Final Notice(s) of Disapproval of a Proposed Emissions Modification in accordance with the dispute resolution procedures set forth in the Consent Decree.

5.1.3 If, in their review, EPA/CARB identify any off-cycle increase or increases in emissions that could potentially be the result of a Defeat Device, then, within 30 Days of notice of the increase or increases by EPA/CARB, Settling Defendants must supplement its Proposed Emissions Modification with a detailed technical explanation of the cause of the increase or increases. EPA/CARB will provide available information to Settling Defendants concerning the increase or increases in emissions. EPA/CARB’s response time to approve or disapprove the Proposed Emissions Modification shall be extended to no less than 20 Days from its receipt of Settling Defendants’ supplement.

5.1.4 As stated in Section VIII (Stipulated Penalties and Other Stipulated Remedies for Noncompliance), EPA/CARB reserve all rights and authorities to impose consequences in the event the agencies discover a Defeat Device in any Modified Vehicle after either agency approved the corresponding Emissions Modification for that Modified Vehicle.

VI. IN-USE COMPLIANCE ASSURANCE FOR MODIFIED VEHICLES

6.1 In each of the five calendar years following lodging of the Consent Decree, for two vehicles from each Generation of the 2.0 Liter Subject Vehicles for which Settling Defendants have performed an Approved Emissions Modification, Settling Defendants must, no later than October 1 of each year (except as otherwise provided herein):

6.1.1. Notify EPA and CARB 30 Days prior to conducting all in-use testing so that the agencies can arrange to observe the testing.

6.1.2. Use the regulatory in-use compliance vehicle selection process to select vehicles to be tested, as required under 40 C.F.R. § 86.1845-04 and Cal. Code Regs. tit. 13, §2137, except that vehicles tested may include those that are up to the Full Useful Life in terms of mileage and age, shall be reasonably maintained and may not be excluded solely for lack of maintenance records, multiple owners and/or repairs due to the Emissions Modification. EPA/CARB reserve the right to specify to Settling Defendants the test group, model, and mileage targets for the two vehicles to be tested, provided that EPA/CARB provide such specifications to Settling Defendants by December 1 of the year preceding the year in which testing will be conducted. Settling Defendants must then randomly select the vehicles within such specifications. Vehicles

used for the Final OBD demonstration may not be used to satisfy the requirements of this Section VI (In-Use Compliance Assurance for Modified Vehicles).

6.1.3. Provide EPA and CARB all downloads of all standardized OBD data, in accordance with Cal. Code Regs. tit. 13, § 1968.2, of the tested vehicles. This data shall be collected both pre- and post-testing, on the as-received vehicles.

6.1.4. Generate all emissions data from two in-use Modified Vehicles in each Generation within the regulatory useful life mileage (i.e., Generation 1 and Generation 2 = 120,000 miles; Generation 3 = 150,000 miles) over all required test cycles (FTP, US06, SC03, and HWFET) accounting for Infrequent Regeneration Adjustment Factors, and provide all these data to EPA and CARB. Settling Defendants must complete the tests and provide to EPA and CARB the results, no later than October 1 of each year.

6.1.5. If the test results of any one in-use Modified Vehicle fails the Maximum Emissions Modification Limits for Full Useful Life (after accounting for any applicable in-use factors as described in Paragraph 3.7), Settling Defendants must formally notify the agencies within 72 hours of the failure. In the event of such failure, Settling Defendants must conduct an In-Use Confirmatory Program. Prior to conducting the In-Use Confirmatory Program, the Settling Defendants must submit a test plan for EPA/CARB review and approval. The criteria used for such additional in-use vehicle testing and any additional reporting requirements must be identical to the official regulatory in-use testing and reporting program under 40 C.F.R. 86.1846-01, except that vehicles selected for additional testing may include vehicles up to the applicable Full Useful Life in terms of mileage and age, shall be reasonably maintained and shall not be excluded solely for such things as lack of maintenance records, multiple owners and/or repairs as a result of the Emissions Modification. As stated in Section VIII (Stipulated Penalties and Other Stipulated Remedies for Noncompliance), EPA and CARB reserve all rights and authorities to impose consequences if a Modified Vehicle fails an applicable Maximum Emissions Modification Limit during the Full Useful Life period.

6.1.6. For each Approved Emission Modification, Settling Defendants must perform OBD testing and reporting as required by Cal. Code Regs. tit. 13, §§ 1968.2(j)(2) and (3) (i.e., verification of monitoring requirements on production vehicles, and verification and reporting of in-use monitoring performance on production vehicles, respectively). Pursuant to these regulations, Settling Defendants must complete reporting under Cal. Code Regs. tit. 13, § 1968.2(j)(2) within 180 calendar Days after the first 2.0 Liter Subject Vehicle is modified in accordance with an Approved Emissions Modification, and must complete data collection and reporting required under Cal. Code Regs. tit. 13, § 1968.2(j)(3) within 360 calendar Days after the first 2.0 Liter Subject Vehicle is modified in accordance with the applicable Approved Emissions Modification. In the event this testing demonstrates that any Modified Vehicles do not comply with the applicable OBD requirements, Settling Defendants must submit a remedial plan to EPA and CARB for any such noncompliant Modified Vehicles.

6.1.7. Starting on April 30, 2018, and annually for the following 5 years, Settling Defendants must provide EPA and CARB with a “Report on In-Use Compliance Assurance for Modified Vehicles” that summarizes the testing performed pursuant to this Section in the preceding year. The two vehicles tested under this section shall be two of the vehicles procured by the Settling Defendants during the Settling Defendants compliance with the in-use reporting and compliance requirements in 40 C.F.R. § 86.1845-04 04 and Cal. Code Regs. tit. 13, § 2137.

6.1.8. Settling Defendants must certify all In-Use Compliance test results required under this Section VI, and submitted to EPA and CARB, in accordance with the certification requirements of Paragraphs 33 and 34 of this Consent Decree.

VII. ADDITIONAL REQUIREMENTS

7.1 In implementing any Approved Emissions Modification, Settling Defendants must comply with the following additional requirements.

7.2 For all Generations, Settling Defendants may not sell or cause to be sold, resell or cause to be resold, or lease or cause to be leased, any 2.0 Liter Subject Vehicle in Settling Defendants’ possession, or obtained by Settling Defendants as a trade-in or through the Buyback or Lease Termination Program under Appendix A until:

7.2.1. Settling Defendants complete at least 75% Full Useful Life durability testing on an official emissions durability vehicle aged on the SRC cycle (a representative vehicle, as approved by EPA/CARB, is acceptable for this purpose) and Settling Defendants provide all data to EPA and CARB.

7.2.2. Settling Defendants complete the Critical OBD Demonstration Testing on a vehicle aged to at least 75% Full Useful Life on the SRC cycle executed with an Engineering Durability Vehicle and Settling Defendants provide all data to EPA/CARB;

7.2.3. Settling Defendants remedy any and all OBD noncompliances that are not provided for under this Appendix B and that are known at the time the OBD demonstration required under subparagraph 7.2.2 is completed;

7.2.4. Settling Defendants perform an applicable Approved Emissions Modification on any such vehicle and comply with all other requirements applicable to such vehicle under Appendix B;

7.2.5. Settling Defendants execute all emission-related service actions and repairs required to bring the vehicle into compliance with Appendix B, apply any and all other recalls concerning the vehicle, and execute any other required service actions, provided that, to fulfill this requirement for Generation 3 vehicles, Settling Defendants need not execute the Subsequent Service Action described in subparagraph 3.4.3;

7.2.6. Settling Defendants submit a Proposed Plan for Sale and Lease of Modified Vehicles, including the materials set forth below.

- i. A statement that the Modified Vehicles comply with the requirements in Appendix B;
- ii. If the Modified Vehicles do not comply with Appendix B, a statement of all actions to be undertaken to alter the Emissions Modification to ensure compliance with Appendix B;
- iii. As necessary, an updated list of OBD noncompliances that were identified during the testing required under subparagraph 7.2.2; and
- iv. Settling Defendants certify the Proposed Plan for Sale and Lease of Modified Vehicles in accordance with the certification requirements set forth in Paragraphs 33 and 34 of this Consent Decree.

7.2.7. EPA/CARB approve the Proposed Plan for Sale and Lease of Modified Vehicles. EPA/CARB will respond to the proposal within 14 Days of submittal.

7.2.8. For five years following entry of this Consent Decree, Settling Defendants must submit quarterly reports, certified in accordance with the certification requirements under Paragraphs 33 and 34 of this Consent Decree, to EPA/CARB to include the following information:

- i. Each vehicle, by VIN, that has been acquired by Settling Defendants, modified with an Approved Emissions Modification (including Modified Vehicles that have been returned to Eligible Owners and Lessors), sold, exported, or destroyed, including the dates of each occurrence;
- ii. By VIN, the repairs and alterations to each 2.0 Liter Subject Vehicle conducted to remedy OBD noncompliances and other defects in the relevant Approved Emissions Modification.

7.3 If the Final OBD Demonstration or the Full Useful Life Durability testing show that Modified Vehicles do not meet the OBD System or durability requirements of this Appendix B, or if a substantial number of Modified Vehicles exceed the Maximum Emissions Modification Limits in-use, the Approved Emissions Modification shall be suspended, during which time no relevant Emissions Modifications may be applied, and no sales, leases, or exports, of relevant Modified Vehicles will be permitted, until such time Settling Defendants correct the defects in the Approved Emissions Modification.

7.4 Settling Defendants must make all disclosures to vehicle owners as required by the Consent Decree and the FTC Order, and consistent with Appendix A. These requirements are meant to ensure owners are able to make an informed decision about participation in the Emissions Modification and the availability of the Extended Emissions Warranty.

7.5 Settling Defendants must also comply with any additional labeling, disclosure, and warranty requirements set forth in Appendix A.

7.6 As more fully described in Appendix A, Settling Defendants may not terminate the Emissions Modification Program.

VIII. STIPULATED PENALTIES AND OTHER STIPULATED REMEDIES FOR NONCOMPLIANCE

8.1 With respect to Settling Defendants' noncompliance with the provisions of this Appendix B, EPA and CARB reserve all rights to address such noncompliance under applicable laws and regulations, including without limitation, civil, criminal, and administrative enforcement authorities, such as the imposition of penalties and equitable remedies.

8.2 Settling Defendants must pay stipulated penalties to the United States and CARB, and be liable for the following remedies, for each violation of Appendix B, in accordance with the following paragraphs. Except as otherwise provided herein, 75% of any stipulated penalties due under these subparagraphs shall be paid to the United States, and 25% shall be paid to CARB.

8.2.1. Failure to Disclose AECDs. If, after issuing a Notice of Approved Emissions Modification, EPA/CARB determine that Settling Defendants failed to provide a complete list of each AECD and EI-AECD in the Emissions Modification Proposal that EPA/CARB approved, Settling Defendants must pay to the United States and CARB a stipulated penalty of \$150,000 for each AECD and \$2,000,000 for each EI-AECD not included in the list.

8.2.2. Failure to Comply with Labeling Requirements. If Settling Defendants fail to permanently affix a label to any 2.0 Liter Subject Vehicle, as required under subparagraph 3.1.6 before such vehicle is sold, leased, offered for sale or lease, otherwise introduced into commerce, or returned to the Eligible Owner or Eligible Lessee, or if the information included in any label is incorrect, Settling Defendants must pay to the United States and CARB a stipulated penalty of \$15 per label, per vehicle, and for each Day that Settling Defendants fail to apply the required label, provided that if Settling Defendants affix the label within 30 Days of selling or leasing the vehicle or returning the vehicle to the Eligible Owner or Lessee, no stipulated penalty shall be required for that vehicle.

8.2.3. Failure to Perform Emissions Modification. If Settling Defendants sell or lease, offer for sale or lease, or otherwise introduce into commerce, or return to an Eligible Owner or Lessee who requested an Emissions Modification, any 2.0 Liter Subject Vehicle that has not received the applicable Approved Emissions Modification, Settling Defendants must (1) make a Mitigation Trust Payment to the Trust Account in accordance with the Consent Decree in the amount of \$50,000 per vehicle; and (2) offer to buy back and terminate the leases for each and every such vehicle, in accordance with the terms and requirements of Appendix A. For each such vehicle that Settling Defendants fail to buy back or execute a lease termination, as applicable, within 18

months following EPA/CARB’s demand for the stipulated remedy under this subparagraph, Settling Defendants must pay a Mitigation Trust Payment to the Trust Account in accordance with the Consent Decree in the amount of \$25,000 per vehicle. In no event shall Settling Defendants be required to pay stipulated penalties under subparagraph 8.2.8 of Appendix A of this Consent Decree if a stipulated penalty under this subparagraph 8.2.3 of this Appendix B is demanded for the same conduct.

8.2.4. Failure to Comply with the Maximum Emissions Modification Limits. If any test required under this Appendix B, or such other compliance test, as specified in this Appendix B and conducted by EPA/CARB, demonstrates that any Modified Vehicle Test Group exceeds the applicable Maximum Emissions Modification Limit, the following stipulated remedies apply.

- i. Settling Defendants must pay a Mitigation Trust Payment to the Trust Account in accordance with the Consent Decree, an amount based on Formula 1. The Mitigation Trust Payment amount shall be calculated based on the emissions exceedance demonstrated by testing conducted during the 1 year period preceding the EPA/CARB demand for payment. EPA/CARB may issue a separate demand for an additional Mitigation Trust Payment for each year in which the Modified Vehicle exceeds the applicable emissions limit. For Modified Vehicles that exceed more than one emission limit, the amount of exceedance will be based on the greatest amount by which any emissions limit is exceeded.

Formula 1

[Vehicles not removed from service (number of vehicles in the applicable Generation less the number of vehicles Settling Defendants demonstrate are bought back and destroyed)] x [g/mile (amount of exceedance)] x [15,000 miles] x [grams to tons conversion factor] x [70,000] = [Mitigation Trust Payment in dollars]

8.2.5. Failure to Provide EPA or CARB with Test Vehicles. If Settling Defendants fail to provide any test vehicle within 45 Days of a request by EPA/CARB, as provided in subparagraph 3.1.1, and as otherwise provided in the Consent Decree and Appendices, Settling Defendants must pay to the United States and CARB the following stipulated penalties for each test vehicle and for each Day the vehicles are not provided:

\$5,000	1 st through 14 th Day
\$20,000	15 th through 30 th Day
\$50,000	31 st Day and beyond

8.2.6. Failure to Remove Defeat Devices. If, after EPA/CARB approve the applicable Emissions Modification, Settling Defendants install software, or a Dealer installs software provided by Settling Defendants, for purposes of modifying the vehicle

as provided under this Appendix B, and subsequent to such installation, the vehicle contains a Defeat Device, Settling Defendants must offer to buy back, and terminate the leases for, each and every such vehicle that has been purchased or leased, or that has been returned to an Eligible Owner or Lessee who requested an Emissions Modification, in accordance with the terms and requirements of Appendix A, and Settling Defendants must also pay to the United States and CARB a stipulated penalty of \$25,000,000 for each Defeat Device (but not for each vehicle that contains such Defeat Device).

8.2.7. Failure to Complete Final OBD Demonstration Testing. If Settling Defendants fail to complete the Final OBD Demonstration testing by the dates required under subparagraph 3.1.4, Settling Defendants must pay to the United States and CARB (at a 50/50 split) the following stipulated penalty for each Day that Settling Defendants fail to complete such testing:

\$5,000	1 st through 14 th Day
\$20,000	15 th through 30 st Day
\$75,000	31 st and beyond

8.2.8. Failure to Comply with OBD System Requirements. If the Final OBD Demonstration testing, or such other test, as described herein, conducted by EPA/CARB, demonstrate that the Modified Vehicles do not meet the OBD System Requirements set forth in this Appendix B (other than those allowed by the Alternate OBD Criteria), Settling Defendants must pay to the United States and CARB (at a 50/50 split) a stipulated penalty of \$15,000,000 for each monitor (but not for each vehicle that contains such monitor) that the test(s) demonstrate is noncompliant, and Settling Defendants must also continue to conduct the in-use compliance testing required under Section VI of this Appendix B for an additional 3 year period. If such additional in-use compliance testing demonstrates that the Modified Vehicles exceed any of the Maximum Emissions Modification Limits, then the stipulated remedies under subparagraph 8.2.4 apply.

8.2.9. Failure to Install Hardware Required for Generation 1 Vehicles. If Settling Defendants fail to install on any Generation 1 2.0 Liter Subject Vehicle the exhaust flap, EGR filter, or the NOx Trap that meets the specifications of BASF TEX2064, as required under subparagraph 3.2.1, Settling Defendants must recall each and every such vehicle and install the required hardware, and must pay to the United States and CARB a stipulated penalty of \$500 per vehicle per device that Settling Defendants fail to install.

8.2.10. Failure to Install DOC as Required for Generation 3 Vehicles. If Settling Defendants fail to install on any Generation 3 2.0 Liter Subject Vehicle the DOC necessary to maintain emissions compliance to at least 150,000 miles, as required under subparagraph 3.4.3, Settling Defendants must recall each and every such vehicle and install the required hardware and must pay to the United States and CARB a stipulated penalty of \$500 per vehicle per device that Settling Defendants fail to install.

8.2.11. Failure to Install Other Hardware Required for Generation 3 Vehicles. If Settling Defendants fail to install on any Generation 3 2.0 Liter Subject Vehicle the

Second NOx Sensor or associated monitors, or compliant SCR monitor, required under subparagraph 3.4.1, Settling Defendants must recall each and every such vehicle and install the required hardware and must pay to the United States and CARB (at a 50/50 split) a stipulated penalty of \$500 per vehicle per device that Settling Defendants fail to install.

8.2.12. Failure to Honor Warranty. If Settling Defendants fail to honor the Extended Emissions Warranty or the additional warranty extension provisions under Paragraph 3.9 and subparagraph 3.5.3, respectively, including by failing to cover all costs of parts and labor, or by failing to pay for or provide a loaner car for repairs of more than 3 hours, Settling Defendants must pay to the United States and CARB (at a 50/50 split) a stipulated penalty of \$40,000, except for failing to pay for or provide a loaner car, for which Settling Defendants must pay a stipulated penalty of \$1,000.

8.2.13. Failure to Disseminate the Emissions Modification Disclosure and the Additional Emissions Warranty Extensions. If Settling Defendants fail to timely execute the disclosures required under subparagraphs 3.1.10 or 3.9.6, or the notice requirements for any Additional Emissions Warranty Extensions required under 3.5.5, Settling Defendants must pay to the United States and CARB (at a 50/50 split) the following stipulated penalties for each Day such notice is not provided:

\$2,000	1 st through 14 th Day
\$10,000	15 th through 30 th Day
\$50,000	31 st and beyond

8.2.14. Failure to Maintain a VIN-Searchable Database with the required Emissions Modifications Disclosures and Specifying Warranty Coverage. If Settling Defendants fail to maintain an accurate and complete database specifying the warranty coverage for each 2.0 Liter Subject Vehicle, the Settling Defendants must pay to the United States and CARB (at a 50/50 split) the following stipulated penalties for each Day the database is not maintained, and for each covered part omitted:

\$2,000	1 st through 14 th Day
\$10,000	15 th through 30 th Day
\$50,000	31 st and beyond

8.2.15. Failure to Comply with In-Use Compliance Testing, Notice, or Reporting Requirements. If Settling Defendants fail to conduct the tests or fail to comply with the reporting or notice requirements under Section VI of this Appendix B (In-Use Compliance Assurance), Settling Defendants must make Mitigation Trust Payments to the Trust Account in accordance with the Consent Decree in the following amounts for each requirement Settling Defendants fail to meet, and for each Day of such failure:

\$50,000	1 st through 14 th Day
\$100,000	15 th through 30 th Day
\$500,000	31 st Day and beyond

8.2.16. Failure to Comply with Other Testing Requirements. If Settling Defendants fail to conduct any other test or timely submit the results as required under this Appendix B, including any test Settling Defendants are required to conduct after EPA and CARB issue a Notice of Approved Emissions Modification, but excluding tests required under Section VI of this Appendix B, Settling Defendants must pay to the United States and CARB (in a 50/50 split) the following stipulated penalties for each requirement Settling Defendants failed to meet, and for each Day of such failure:

\$5,000	1 st through 14 th Day
\$20,000	15 th through 30 st Day
\$50,000	31 st Day and beyond

8.2.17. Failure to Comply with Other Notice or Reporting Requirements. If Settling Defendants fail to meet any of the other notice or reporting requirements under Appendix B, Settling Defendants must pay to the United States and CARB (at a 50/50 split) the following stipulated penalty for each requirement and for each Day Settling Defendants fail to meet such requirements:

\$2,000	1 st through 14 th Day
\$5,000	15 th through 30 th Day
\$25,000	31 st Day and beyond

8.2.18. Failure to Comply with an Approved Emissions Modification. Except as otherwise provided herein, if an Emissions Modification performed by or on behalf of Settling Defendants fails to conform to any of the requirements of the applicable Approved Emissions Modification, Settling Defendants must pay to the United States and CARB (at a 50/50 split) a stipulated penalty of \$5,000 for each nonconformance with the Approved Emissions Modification and for each Modified Vehicle that contains a nonconformance.

8.3 These stipulated penalties in Appendix B shall not apply if, at any time prior to instituting an Emission Modification Program, the Settling Defendants decide not to pursue an Emission Modification Program.

IX. DISPUTE RESOLUTION

9.1 Disputes under this Appendix B shall be governed by the dispute resolution procedures set forth in the Consent Decree.

9.2 With respect to any dispute under this Appendix B, in any judicial proceeding conducted pursuant to the dispute resolution procedures set forth in the Consent Decree, Settling Defendants shall have the burden of demonstrating that EPA/CARB’s determination or action was arbitrary and capricious or otherwise not in accordance with law based on the administrative record.

X. SUBMISSIONS

10.1 Except as otherwise provided herein, Settling Defendants must provide EPA and CARB with all correspondence required hereunder concurrently, by the method and in the form specified in Section XIII (Notices) of the Consent Decree.

10.2 EPA and CARB will provide Settling Defendants with all correspondence required hereunder by the method and in the form specified in Section XIII (Notices) of the Consent Decree.

XI. CONFIDENTIAL BUSINESS INFORMATION.

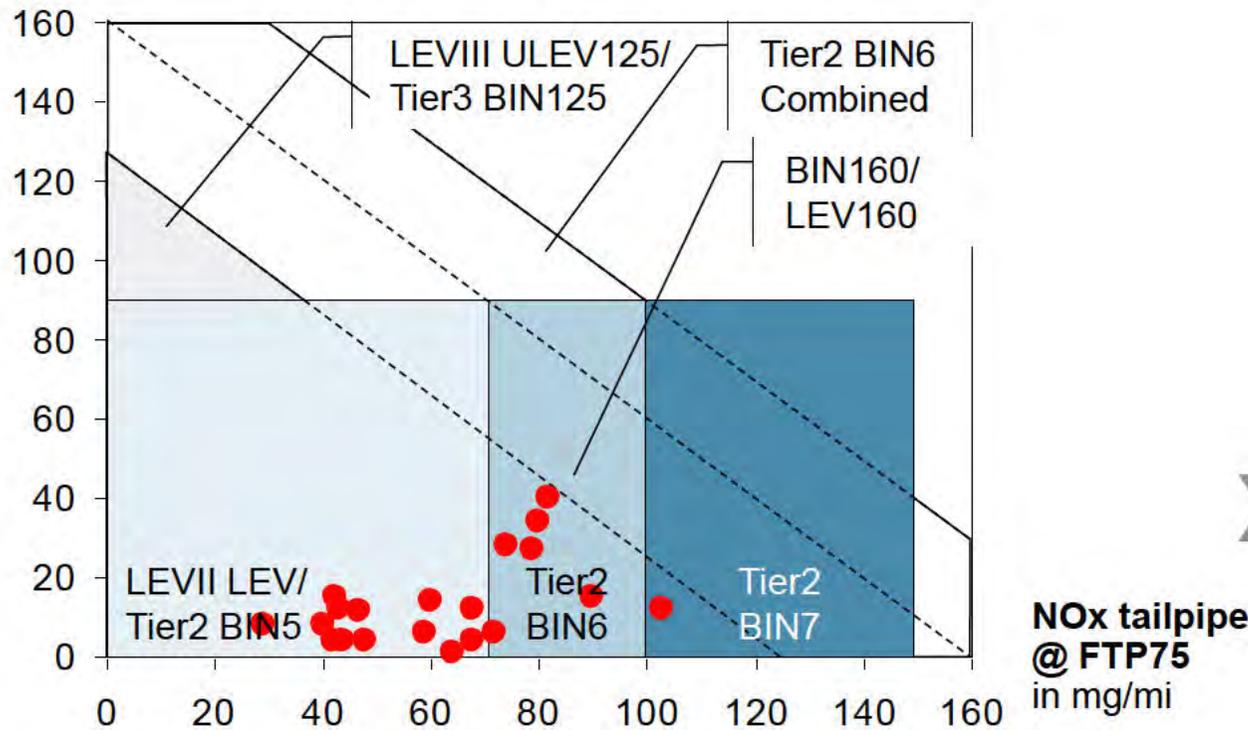
11.1 Settling Defendants may assert claims that their Submissions contain Confidential Business Information, as specified in the Consent Decree.

APPENDIX B-1
Prior Test Results

EA288 Gen3 – Automatic Transmissions – Previous Emission Results

NMOG and NOx emissions results (new calibration)

**NMOG tailpipe
@ FTP75**
in mg/mi



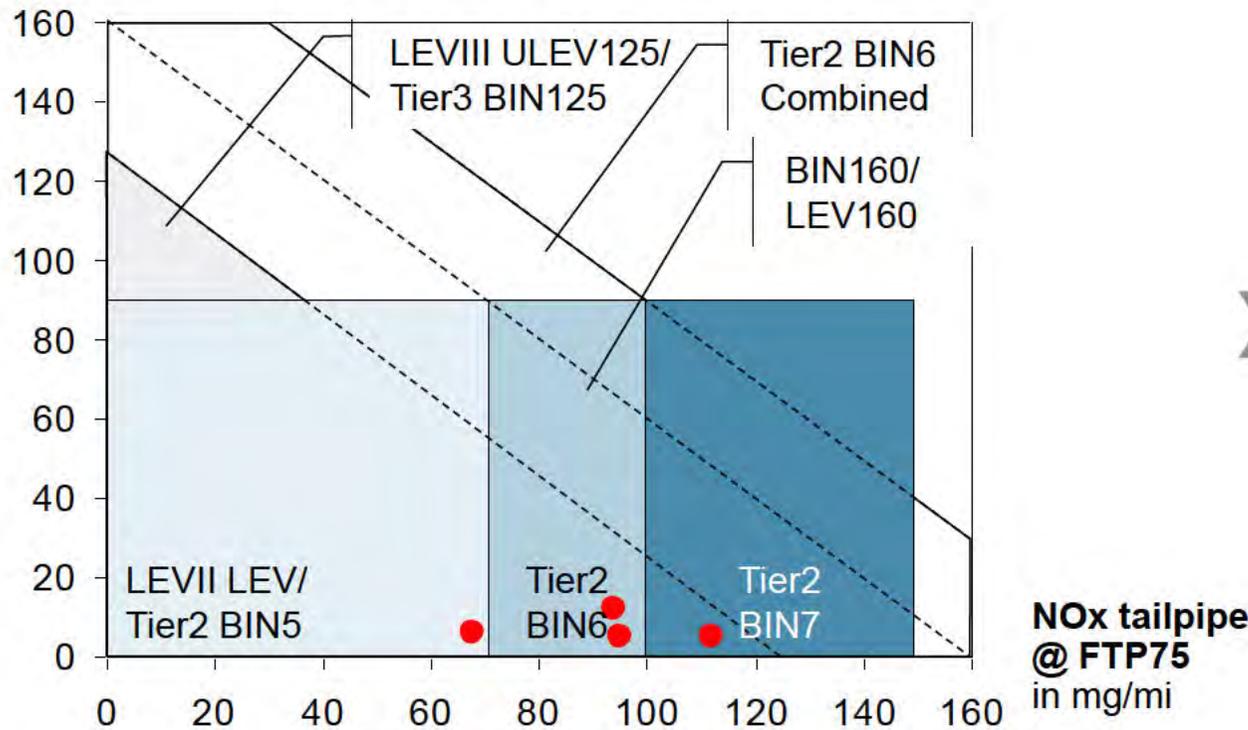
**All measurements within
Tier2 BIN6 combined or
Tier3 BIN160/LEV VIII LEV160
limits**

Note: Without IRAF

EA189 Gen2 – Automatic Transmissions – Previous Emission Results

NMOG and NOx emissions results (new calibration)

**NMOG tailpipe
@ FTP75
in mg/mi**



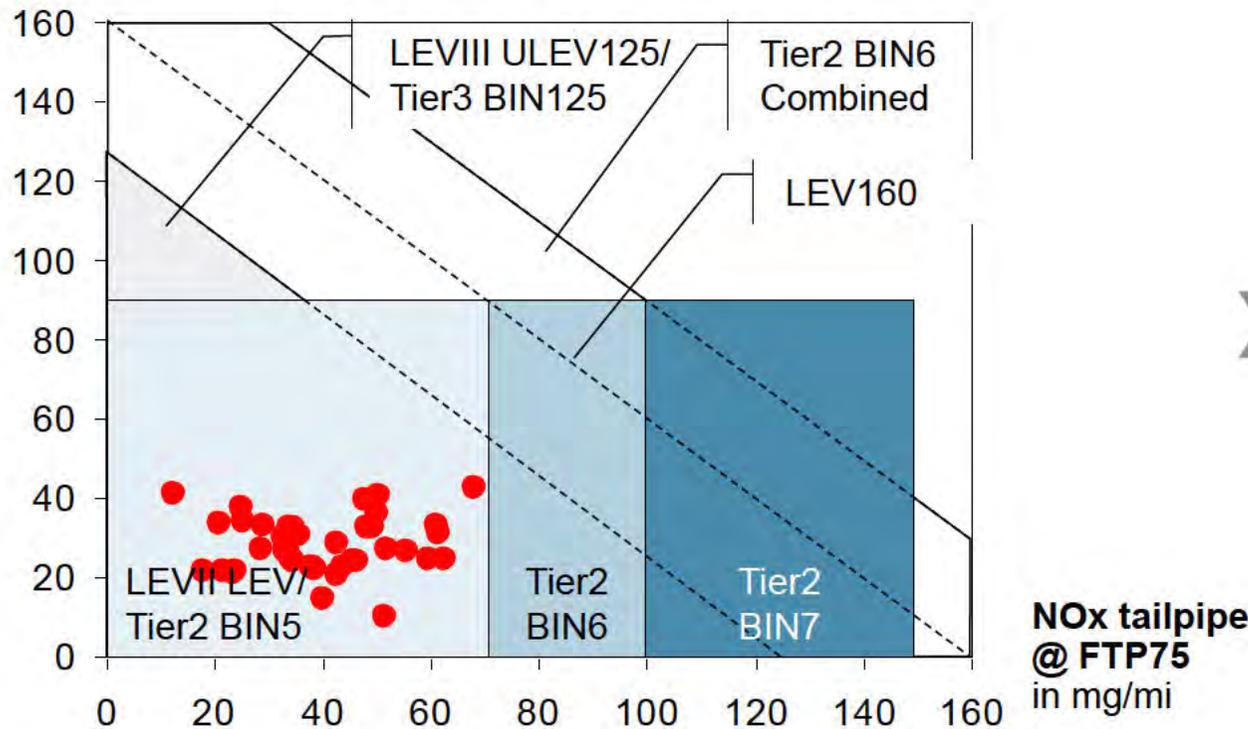
All measurements within Tier2 BIN6 combined or Tier3 BIN160/LEV160 limits

Note: Without IRAF

EA189 Gen1 – Automatic Transmissions – Previous Emission Results

NMOG and NOx emissions results (new calibration)

**NMOG tailpipe
@ FTP75
in mg/mi**



All measurements within Tier2 BIN6 or Tier3 BIN125/ULEV125 limits

Note: Without IRAF

APPENDIX B-2
Emission Control System Data Parameters

EMISSION CONTROL SYSTEM DATA PARAMETERS

Parameters A	Parameters B	English description	nicht verstand en	Alternativvorschlag/Korr eKTur	Intake Gas System (air and EGR)	Engine mode control	Engine tempera tures	Engine dyna mics	OBD	Fuel Injectio n system	Exhaust gas temper atures	Exhaust system incl. SCR	Vehicle dynamics and drivetrain	Other
AFS_dm	AFS_dm	air -mass flow total			X									
AFS_mAirPerCyl	AFS_mAirPerCyl	air-mass per cylinder and cycle			X									
ASMod_dmEG	ASMod_dmEG	Exhaust gas mass flow from engine		Exhaust gas mass flow from engine	X									
ASMod_dmNOxB asLM_mp	ASMod_dmNOxBasLM _mp	NOx mass flow engine out in 'lean-combustion operation Mode'	X	Base NOx mass flow value after combustion in 'lean-combustion operation Mode'	X									
ASMod_dmNOxE G	ASMod_dmNOxE G	NOx mass flow in the exhaust gas engine out			X									
ASMod_dmPFItU s		exhaust gas mass flow DPF upstream (Diesel particle filter)			X									
ASMod_dvoIPFit EG		calculated exhaust gas volumetric flow in the particle filter			X									
ASMod_rNOxE G	ASMod_rNOxE G	Relative Amount of NOx emission in exhaust gas engine out		Amount of Nox emission in exhaust gas after combustion	X									
ASMod_tIntMnfD s	ASMod_tIntMnfDs	Temperature of the air mass flow after intake cooler	X	Exhaust gas?	X									
BR1_Rad_kmh	BR1_Rad_kmh	average wheel speed of driven wheels											X	
BR3_Fahrtr_HR	BR3_Fahrtr_HR	driving direction of right frontwheel											X	
BR3_Fahrtr_VR	BR3_Fahrtr_VR	driving direction of right rear wheel											X	
BR5_Bremsdruck	BR5_Bremsdruck	unfiltered brake pressure in the master brake cylinder											X	
	BattU_u	Batterie Voltage												X
CACPmp_r	CACPmp_r	PWM setpoint value for control of the charge-air cooler pump		Reference value of charge-air cooler pump	X									
CACPmp_rAct	CACPmp_rAct	actual PWM value for control of the charge-air cooler pump		Actual position of charge- air cooler pump actuator	X									
CEEgt_stLockScr Heat_VW	CEEgt_stLockScrHeat_ VW	Global lock status: SCR heat	X			X								
CEngDsT_t	CEngDsT_t	Coolant temperature engine out		Coolant temperature exiting motor			X							
CEngUsT_t	CEngUsT_t	Coolant temperature engine in		Coolant temperature entering motor			X							

EMISSION CONTROL SYSTEM DATA PARAMETERS

CEScr_stHeatDem_VW	CEScr_stHeatDem_VW	Status of heating request from SCR coordinator	X										X		
CEScr_tDes_VW	CEScr_tDes_VW	Desired temperature of the SCR catalysator for SCR heating request	X	Desired temperature of the SCR catalyst for SCR heating request									X		
CESys_stOpm_VW_[0]	CESys_stOpm_VW_[0]	Priorized operation modes of system coordinator	X	Priorized operation modes of system coordinator		X									
CL1_Druck	CL1_Druck	refrigerant pressure		coolant pressure											X
CL1_Gebl_last	CL1_Gebl_last	load info of fan control													X
CL1_Kompr_Last	CL1_Kompr_Last	torque loss of the air conditioning system													X
Cpp_trqInrCor_[1]	Cpp_trqInrCor_[0]	Inner torque cylinder 1		adjusted internal torque					X						
	Cpp_trqInrCor_[2]	Inner torque cylinder 3							X						
DFES_ctEntry	DFES_ctEntry	number of allocated fault memory entries								X					
DI1_km_Stand	DI1_km_Stand	mileage							X					X	
DStgy_stNoxCnvPrf_MP	DStgy_stNoxCnvPrf_MP	status word for actual NOx reduction potential of the SCR system	X											X	
	Eng_pAmb_VW	Ambient pressure													X
ETCtI_qPol1	ETCtI_qPol1	correction of injection quantity of Postinjection 1 due to the exhaust gas temperature control	X								X				
ETCtI_qPol2	ETCtI_qPol2	correction of injection quantity of Postinjection 1 due to the exhaust gas temperature control	X								X				
ETCtI_tInrDes	ETCtI_tInrDes	Setpoint value of exhaust gas temperature before turbine of the turbocharger											X		
ETCtI_tOutrDes	ETCtI_tOutrDes	Setpoint value of the exhaust gas temperature DPF upstream											X		
	Exh_dmNOxNSCDs	NOx concentration SCR catalytic converter upstream												X	
Exh_pAdapPPFitDiff	Exh_pAdapPPFitDiff	adjusted differential pressure above particulate filter												X	
Exh_pDiffOfsValAct		actual offset value of the differential pressure above particulate filter												X	
Exh_pDynOfsValPPFitDiff		dynamic differential pressure offset value above the particulate filter												X	

EMISSION CONTROL SYSTEM DATA PARAMETERS

Exh_pSensPPFitDiffRel	Exh_pSensPPFitDiffRel	Exhaust gas pressure upstream Particulate Filter relative to ambient pressure	X	correction value delta for fast downstream pressure of the particle filter, which is subtracted from the measured value (Exh_pSensPPFitDiffRelFast) of the relative pressure over particle filter								X		
Exh_rNOxNSCDs	Exh_rNOxNSCDs	NOx concentration after SCR catalytic converter (downstream)										X		
Exh_tSensCelDs_VW	Exh_tSensCelDs_VW	Exhaust gas temperature after Low pressure EGR-cooler										X		
Exh_tSensOxiCatUs_VW	Exh_tSensOxiCatUs_VW	Exhaust gas temperature before oxidation catalyst										X		
Exh_tSensTOxiCatDs	Exh_tSensTOxiCatDs	Exhaust gas temperature after the oxidizing catalyst										X		
Exh_tSensTPFitDs	Exh_tSensTPFitDs	Exhaust gas temperature after the particulate filter										X		
Exh_tSensTTrbnUs	Exh_tSensTTrbnUs	Exhaust gas temperature before turbine of the turbocharger										X		
ExhFlpLP_rAct	ExhFlpLP_rAct	actual actuator position of the exhaust-gas flap		actuator position of exhaust-gas flap	X									
FISys_dvolFICons	FISys_dvolFICons	Fuel consumption [l/h] from torque-generated injection mass		Fuel consumption [l/h] from torque-generated injection rate							X			
FISys_dvolFIConsAllTot	FISys_dvolFIConsAllTot	actual total fuel consumption (incl. supplementary heating) [l/h]									X			
FISys_volFIConsAllTot	FISys_volFIConsAllTot	total fuel consumption per driving cycle [ul]									X			
FuelT_t	FuelT_t	fuel temperature									X			
GE_Fahrprogramm	GE_Fahrprogramm	driving program											X	
GE_Sumpftemperatur	GE_Sumpftemperatur	actual temperature of the ATF		actual temperature of the hydraulic oil in the gearbox sump									X	
GE1_WK	GE1_WK	condition of torque converter clutch	X											X
GE2_akt_Gang	GE2_akt_Gang	actual engaged gear												X
GE5_Sta_Fahrstufe	GE5_Sta_Fahrstufe	validity of the engaged gear	X	validity of the Gear Selection										X
GEC_mChDesLim_VW	GEC_mChDesLim_VW	limit value of combustion-chamber-charge		limit value of combustion-chamber-charge	X									

EMISSION CONTROL SYSTEM DATA PARAMETERS

GEC_posnVtg_VW	GEC_posnVtg_VW	desired value for the position of the VTG actuator		desired value for the position of the VTG actuator	X									
GEC_rEgrDesLim_VW	GEC_rEgrDesLim_VW	desired value limit of EGR rate			X									
	GEC_rEgrHpDes_VW	Desired EGR rate high pressure			X									
	GEC_rEgrLpDes_VW	Desired EGR rate low pressure			X									
GEC_rFrcDesLim_VW	GEC_rFrcDesLim_VW	desired value limit of the EGR fraction			X									
GEC_rTvhDesLim_VW	GEC_rTvhDesLim_VW	limited setpoint value for pressure ratio throttle valve	X		X									
GEDC_stRisOpmReqOxiMonAcv_MP_VW		status word containing release conditions for the operation mode request of active oxicat monitor				X								
GEDFeL_rMonPasFil_VW		filtered ratio between modelled and simulated differential pressure above low pressure EGR filter		filtered ratio between modelled and simulated differential pressures across low pressure EGR filter	X									
GEDFeL_rMonPasOfs_VW		actual adaption value for the filtered ratio of the passive monitor	X	actual adaption value for the filtered ratio of the passive monitor					X					
GEDFeL_stRis_VW		status word of release conditions for the low pressure EGR filter monitor		status word of release conditions for the low pressure EGR filter diagnosis					X					
GEM_mCh_VW	GEM_mCh_VW	virtual overall mass in cylinder			X									
GEM_mCylAirMfsAdp_VW	GEM_mCylAirMfsAdp_VW	adapted cylinder fresh air mass			X									
GEM_mfBrchHpDs_VW		massflow behind high pressure EGR-branch	X	massflow behind high pressure EGR-branch	X									
GEM_mfBrchLpDs_VW		mass flow behind low pressure EGR-branch			X									
GEM_mfDeMfsAdp_VW	GEM_mfDeMfsAdp_VW	mass flow deviation for calculating adaptation of mass flow sensor			X									
GEM_mfEvh_VW	GEM_mfEvh_VW	massflow through high pressure EGR-valve			X									
GEM_mfEvl_VW	GEM_mfEvl_VW	massflow through low pressure EGR-valve			X									
GEM_mfFuCmbOxi0_VW		maximum convertible fuel mass flow in exhaust gas			X									
GEM_mfMfsAdp_VW	GEM_mfMfsAdp_VW	adapted cylinder fresh air mass flow			X									
GEM_mFuPostInj1_VW		fuel mass for postinjection 1							X					
GEM_posnEvh_VW	GEM_posnEvh_VW	relative position of High Pressure EGR valve			X									

EMISSION CONTROL SYSTEM DATA PARAMETERS

GEM_posnEvl_VW	GEM_posnEvl_VW	relative position of Low Pressure EGR valve			X									
GEM_posnTvh_VW	GEM_posnTvh_VW	relative position of throttle valve			X									
GEM_posnVtg_VW	GEM_posnVtg_VW	relative position of variable turbine geometry actuator			X									
GEM_rEgr_VW	GEM_rEgr_VW	total EGR ratio			X									
GEM_tCacDs_VW	GEM_tCacDs_VW	temperature downstream of the charge air cooler	X	temperature downstream of the charge air cooler			X							
GEM_tCacUs_VW	GEM_tCacUs_VW	temperature upstream of the charge air cooler		temperature upstream of the charge air cooler			X							
GEM_tPfilSrfc_VW	GEM_tPfilSrfc_VW	temperature of particulate filter surface									X			
GK2_BEM_P_Generator	GK2_BEM_P_Generator	generator power												X
GlbDa_ITotDst	GlbDa_ITotDst	Distance travelled since first start		Distance travelled since first start									X	
GM3_MoSoMom	GM3_MoSoMom	from gearbox requested engine torque											X	
InjCrv_phiMI1CS_CCor	InjCrv_phiMI1CS_CCor	angle correction of start of main injection	X	start of override control of MI1						X				
	InjCrv_phiPil1Des	Desired injection timing (in angle) for Pilot Injection 1								X				
	InjCrv_phiPil2Des	Desired injection timing (in angle) for Pilot Injection 2								X				
	InjCrv_phiPol1Des	Desired injection timing (in angle) for Post Injection 1								X				
	InjCrv_phiPol2Des	Desired injection timing (in angle) for Post Injection 2								X				
	InjCrv_phiPol3Des	Desired injection timing (in angle) for Post Injection 3								X				
	InjCrv_qPil1Des_mp	setpoint value for injection quantity of Pilot injection 1								X				
	InjCrv_qPil2Des_mp	setpoint value for injection quantity of Pilot injection 2								X				
InjCrv_qPol1Des_mp	InjCrv_qPol1Des_mp	setpoint value for injection quantity of postinjection 1								X				
InjCrv_qPol2Des_mp	InjCrv_qPol2Des_mp	setpoint value for injection quantity of postinjection 2								X				

EMISSION CONTROL SYSTEM DATA PARAMETERS

	InjCrv_qPol3Des_mp	setpoint value for injection quantity of postinjection 3								X				
InjCrv_stInjCharSetVal	InjCrv_stInjCharSetVal	setpoint value for injection pattern	X	desired behavior of injection value (simultaneous rotational speed)						X				
InjCtl_qSetUnBal		injection quantity mass without quantity compensation control	X	desired behavior of injection value without amount compensation control						X				
InjSys_qTot	InjSys_qTot	total injection quantity								X				
KO1_Tankinhalt	KO1_Tankinhalt	Remaining fuel quantity in tank	X	Remaining fuel quantity in tank						X				
KO3_Radumfang	KO3_Radumfang	mean wheel circumference in millimeters												X
MO_Heizstrom_SCR	MO_Heizstrom_SCR	Total electric current used for heating SCR system		Total current used for heating SCR system								X		
MO_Istgang	MO_Istgang	actual gear for display in gear shift recommendation											X	
MO_Sollgang	MO_Sollgang	recommended gear for display in gear shift recommendation											X	
MO1_Drehzahl	MO1_Drehzahl	engine speed					X							
MO1_Kup_schalt	MO1_Kup_schalt	clutch switch, only manual transmission.		clutch switch, only manual transmission.									X	
MO1_Pedalwert	MO1_Pedalwert	actual value of acceleraerator pedal position		Pedal input value for E-gas cars									X	
MO2_Kuehlm_T	MO2_Kuehlm_T	engine coolant temperature		engine coolant temperature			X							
MO3_Aussentemp	MO3_Aussentemp	ambient air temperature												X
MO5_DPF_reg	MO5_DPF_reg	Bit: DPF-Regeneration active										X		
MO5_Luefter	MO5_Luefter	actual state of radiator fan control via PWM interface												X
MO5_Verbrauch	MO5_Verbrauch	actual Fuel consumption	X							X				
MO6_Ist_Moment	MO6_Ist_Moment	actual torque					X							

EMISSION CONTROL SYSTEM DATA PARAMETERS

MO7_Ladedruckneu	MO7_Ladedruckneu	Boost pressure		Boost signal for dashboard (Porsche Colorado, PQ35 Bi-Turbo, Audi RS6, TT-R)	X										
MO7_Oeltemp	MO7_Oeltemp	oil temperature					X								
MO7_StaGluehk	MO7_StaGluehk	switch-on state of glow-plug heating in percent													X
PCR_pActVal_VW	PCR_pActVal_VW	Charge air pressure actual value			X										
PCR_pDesVal_VW	PCR_pDesVal_VW	setpoint value for Charge air pressure			X										
PEGRLPDiff_pAdap	PEGRLPDiff_pAdap	adapted value of Low-Pressure EGR differential pressure sensor			X										
PFit_dmPFitMonEG_mp		monitored exhaust gas mass flow through particulate filter		monitored exhaust gas mass flow through particle filter									X		
PFit_dvolPFitMonEG_mp		monitored exhaust gas volumetric flow through particulate filter		monitored exhaust gas mass flow through particle filter									X		
PFit_pAdapPPFitDiffFit_mp	PFit_pAdapPPFitDiffFit_mp	filtered differential pressure above particulate filter		filtered differential pressure at particle filter after PT1									X		
PFit_pDiffCharMonMinFullL_mp		threshold for minimum differential pressure at loaded particulate filter		measuring point of threshold for minimum differential pressure of fully loaded particle filter characteristic									X		
PFit_stCondMonChar		release condition for monitoring of particulate filter											X		
PFit_tiSumRgnMaxTmr		regeneration time of uncomplete regeneration of Particulate filter											X		
PFitLd_mSotMeas	PFitLd_mSotMeas	soot mass of particulate filter calculated from differential pressure above Particulate filter											X		
PFitLd_mSotSim	PFitLd_mSotSim	simulated soot mass of particle filter		simulated soot mass of particle filter									X		
PFitRgn_ISnceRgn	PFitRgn_ISnceRgn	driven distance since last successful regeneration											X		
PFitRgn_numEngPOp	PFitRgn_numEngPOp	state of regeneration after consideration of engine operating state	X										X		
PFitRgn_stIntr	PFitRgn_stIntr	status word for reason of regeneration interruption											X		
PthSet_trqInrSet	PthSet_trqInrSet	setpoint value for internal torque						X							

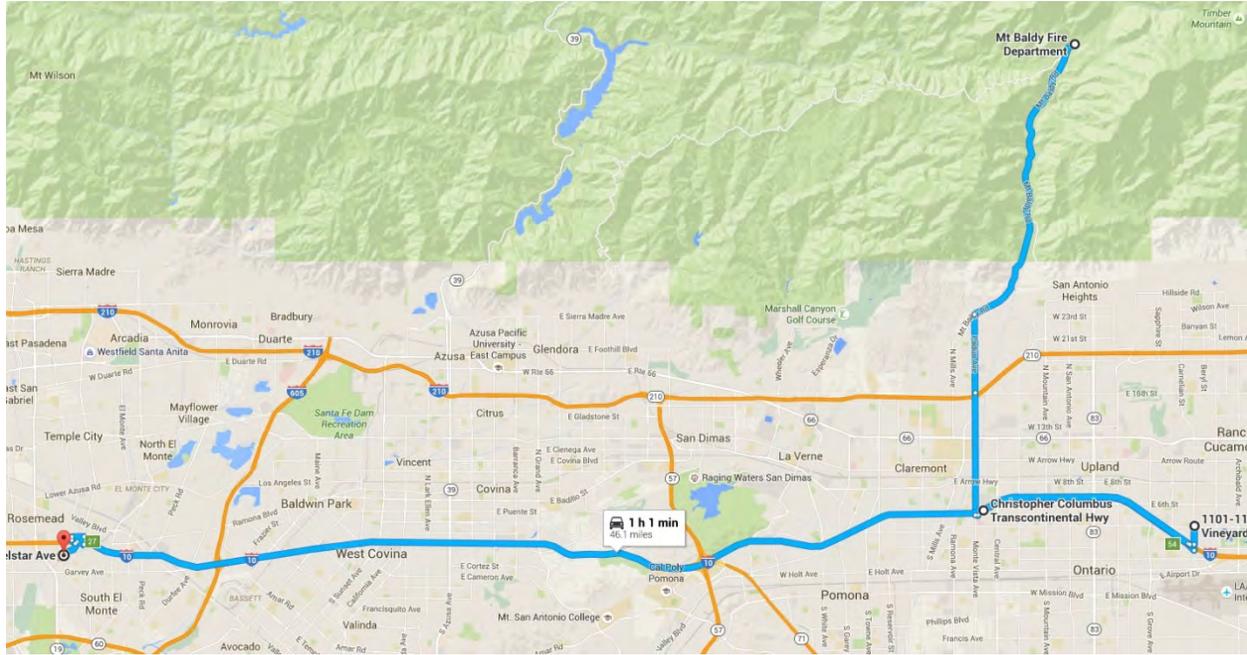
EMISSION CONTROL SYSTEM DATA PARAMETERS

	Rail_pSetPoint	setpoint value for rail pressure								X				
RailP_pFit	RailP_pFit	actual rail pressure (maximum rail pressure from the past 10ms)								X				
SCRChk_rNOxSensAverQlyDetn	SCRChk_rNOxSensAverQlyDetn	averaged measured value of NOx-concentration at end of diagnosis								X				
SCRChk_rNOxThdAverQlyDetn	SCRChk_rNOxThdAverQlyDetn	averaged threshold value for NOx-concentration at end of diagnosis								X				
SCRctl_tAver	SCRctl_tAver	average temperature in Urea (DEF)-Tank	X	filtered temperature SCR									X	
SCRFFC_dmNOxUs	SCRFFC_dmNOxUs	NOx mass flow upstream of SCR-System	X	Untreated NOx emission									X	
SCRFFC_rPPMN OxUs	SCRFFC_rPPMN OxUs	Untreated NOx emission upstream of SCR-catalytic-converter	X	Untreated NOx emission									X	
SCRFFC_rPPMN OxUsCat2	SCRFFC_rPPMN OxUsCat2	Untreated NOx emission upstream of underfloor NH3 slip catalyst	X	Untreated NOx emission									X	
SCRldG_dmNH3Limit_mp	SCRldG_dmNH3Limit_mp	maximum actual NH3 dosing quantity		NH3 dosage limit in SCRcat									X	
SCRldG_dmNH3MetAdap	SCRldG_dmNH3MetAdap	adapted NH3 dosing quantity											X	
SCRldG_dmRdcAgtLimitVehVNOx_MP	SCRldG_dmRdcAgtLimitVehVNOx_MP	NH3 dosing quantity limitation dependent on vehicle speed and NOx mass flow											X	
SCRldG_mNH3LdNom	SCRldG_mNH3LdNom	setpoint value for NH3 level inSCR catalytic converter	X	NH3 tank fluid level full									X	
SCRldG_mNH3LimBuf	SCRldG_mNH3LimBuf	NH3 level of reserve storage		mNH3 reserve tank fluid level									X	
SCRMod_mEstNH3Ld	SCRMod_mEstNH3Ld	current value of NH3-level in SCR catalytic converter		actual mNH3 tank fluid level									X	
SCRMod_rPPMN H3Slip	SCRMod_rPPMN H3Slip	NH3 slip											X	
SCRMod_tAver	SCRMod_tAver	mean temperature of SCR catalytic converter		average temperature of SCR catalyst									X	
SCRMon_stRelSP Ctrl	SCRMon_stRelSP Ctrl	status of release-conditions for transition to the condition PRESSURECONTROL		status of release for transition to the NOPRESSURECONTROL condition									X	
UDC_dmRdcAgAct	UDC_dmRdcAgAct	actual mass flow of reducing agent	X	actual dosed mass flow of reductant									X	
UDC_dmRdcAgDesCoPr	UDC_dmRdcAgDesCoPr	mass flow setpoint of reducing agent for component protection function		desired dosage of component protection function									X	
UDC_mRdcAgDosQnt	UDC_mRdcAgDosQnt	longtime dosing quantity											X	

APPENDIX B-3
PEMS Routes

COMBINED TEST ROUTE (CONTINUED)

IN-Bound



Summary: 46.1 mi (61 min)

Depart 6736 Mount Baldy Road, Mount Baldy, CA 91759

Head west on Mt Baldy Rd toward Central Ave

7.2 mi Turn left onto Padua Ave

1.8 mi Continue onto Monte Vista Ave

2.8 mi Turn left onto Palo Verde St

344 ft Use the left 2 lanes to turn left to merge onto I-10 E toward San Bernardino
Head northeast on I-10 E

5.0 mi Take exit 54 for Vineyard Ave

0.2 mi Use the left 2 lanes to turn left onto N Vineyard Ave
Destination will be on the left

1101-1119 N Vineyard Ave, Ontario CA 91764

0.5 mi Get on I-10 W

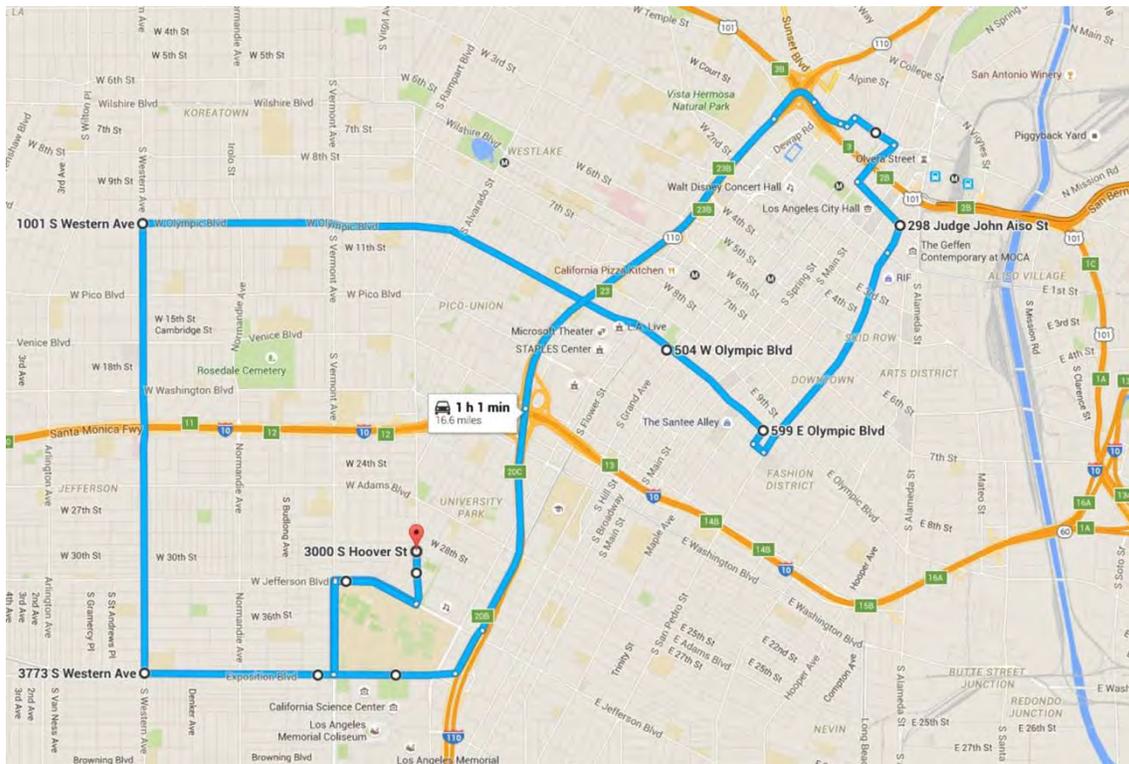
26.5 mi Follow I-10 W to Temple City Blvd in Rosemead. Take exit 27 from I-10 W

1.2 mi Take Loftus Dr to Telstar Ave in El Monte

Total Distance

46.1 mi

URBAN/DOWNTOWN LOS ANGELES ROUTE



Summary: 16.6 miles (61 minutes)

Depart 3000 S Hoover St, Los Angeles, CA 90007

Head south on S Hoover St

- | | |
|--|--|
| <p>0.5mi Turn RIGHT on W Jefferson Blvd</p> <p>0.4mi Turn LEFT on S. Vermont Ave.</p> <p>0.5mi Turn RIGHT on W. Exposition Blvd.</p> <p>1.0mi Turn RIGHT on S. Western Ave.</p> <p>2.4mi Turn RIGHT onto W. Olympic Blvd.</p> <p>3.6mi Turn RIGHT onto San Julian St.</p> <p>446ft Turn LEFT onto E. 11th St.</p> <p>361ft Turn LEFT onto S. San Pedro St.</p> | <p>0.3mi Use the second turn lane from the left to turn LEFT onto N. Grand Ave.</p> <p>276ft Turn RIGHT onto the CA-110/I-110 fwy ramp</p> <p>82ft Keep RIGHT at the fork and follow the signs for CA-110/I-110</p> <p>0.2mi Keep LEFT at the second fork and follow the sign for I-110 South - San Pedro</p> <p>0.3mi Merge LEFT onto the I-110 South - San Pedro</p> <p>1.5mi Continue on the CA-110 South/I-110 South towards Exposition Blvd. Take Exit 20 B from I-110 S</p> <p>1.8mi Take the Exposition Blvd. Exit (20B)</p> <p>0.3mi Use the right two lanes to slightly turn and continue STRAIGHT on W. Exposition Blvd.</p> |
|--|--|

- | | | | |
|--------------|--|--------------|--|
| 1.2mi | Continue STRAIGHT as S. San Pedro St. becomes Judge John Aiso St. | 0.6mi | Turn RIGHT onto S. Vermont Ave. |
| 0.2mi | Turn LEFT on E. Temple St. | 0.5mi | Turn RIGHT onto W. Jefferson Blvd. |
| 0.3mi | Turn RIGHT onto N. Broadway | 0.4mi | 850 W Jefferson Blvd, Los Angeles, CA 90007 |
| 0.3mi | Turn LEFT onto W. Cesar E. Chavez Ave. | | |

APPENDIX C
THE ZEV INVESTMENT COMMITMENT

APPENDIX C

THE ZEV INVESTMENT COMMITMENT

This Appendix sets forth the requirements for Settling Defendants to direct \$2 billion of investments over a period of up to 10 years into actions that will support increased use of zero emission vehicle (“ZEV”) technology in the United States, including, but not limited to, the development, construction, and maintenance of zero emission vehicle-related infrastructure. These efforts will be directed pursuant to two separate investment planning processes, one for the State of California and the other for the rest of the United States. The State of California Air Resources Board (“CARB”) will manage the process relating to California and the United States Environmental Protection Agency (“EPA”) will manage the process for the rest of the United States.

I. DEFINITIONS

Terms used in this Appendix C that are defined in Section III (Definitions) of the Consent Decree shall have the meaning set forth in Section III (Definitions) of the Consent Decree. In addition, and unless otherwise provided, the following terms when used in this Appendix C shall have the following meanings:

1.1. “Appendix C” shall mean this Appendix, and any modifications, revisions, or amendments to it.

1.2. “California ZEV Investment Plan” shall mean the CARB-approved plan developed by the Settling Defendants and implemented in four 30-month cycles, with \$200 million invested in each such cycle, for implementation in the State of California, resulting in the investment of \$800 million over a period of up to 10 years, pursuant to Section III of this Appendix C, and any CARB-approved revisions, modifications, or amendments to it.

1.3. “California Creditable Cost Guidance” shall mean a guidance document prepared by Settling Defendants, for review and approval by CARB, which establishes the requirements regarding the Settling Defendants’ accounting for, and documentation of, costs incurred in the implementation of the California ZEV Investment Plan. The requirements for the California Creditable Cost Guidance are set forth in Appendix C-1 to this Appendix.

1.4. “Creditable Costs” shall mean costs incurred by Settling Defendants for the planning, installation, operation, and maintenance of a ZEV Investment identified in an approved National ZEV Investment Plan or California ZEV Investment Plan that satisfies the criteria set forth in the National Creditable Cost Guidance or California Creditable Cost Guidance, as applicable. Creditable Costs shall include costs incurred by the Settling Defendants after the date of lodging of the Consent Decree to the extent those costs fall within the definition of Creditable Costs. Creditable Costs shall not include any expenditure that: (i) was approved by a Board of Management of any Settling Defendant prior to September 18, 2015; (ii) was required by a contract entered into by any of the Settling Defendants prior to the date of lodging of the

Consent Decree; or (iii) is part of a joint effort by Settling Defendants and other automobile manufacturers to create ZEV infrastructure.

1.5. “National Creditable Cost Guidance” shall mean a guidance document prepared by Settling Defendants that establishes the requirements regarding the Settling Defendants’ accounting for, and documentation of, costs incurred in the implementation of the National ZEV Investment Plan. The requirements for the National Creditable Cost Guidance are set forth in Appendix C-1 to this Appendix.

1.6. “National ZEV Investment Plan” shall mean the EPA-approved plan developed by the Settling Defendants for the investment of \$1.2 billion in 30-month investment cycles in areas of the United States other than the State of California pursuant to Section II of this Appendix C, and any revisions, modifications, or amendments to the EPA-approved National ZEV Investment Plan.

1.7. “Paragraph,” unless otherwise specified, shall mean a paragraph or a subparagraph of this Appendix C designated by a number.

1.8. “Section,” unless otherwise specified, shall mean a section of this Appendix C designated by an upper case Roman numeral.

1.9. “ZEV” or “zero emission vehicle” shall mean any:

1.9.1. on-road passenger car or light duty vehicle, light duty truck, medium duty vehicle, or heavy duty vehicle that produces zero exhaust emissions of all of the following pollutants: non-methane organic gases, carbon monoxide, particulate matter, carbon dioxide, methane, formaldehyde, oxides of nitrogen, or nitrous oxide, including, but not limited to, battery electric vehicles (“BEV”) and fuel cell vehicles (“FEV”);

1.9.2. on-road plug-in hybrid electric vehicle (“PHEV”) with zero emission range greater than 35 miles as measured on the federal Urban Dynamometer Driving Schedule (“UDDS”) in the case of passenger cars, light duty vehicles and light duty trucks, and 10 miles as measured on the federal UDDS in the case of medium- and heavy-duty vehicles; or

1.9.3. on-road heavy-duty vehicle with an electric powered takeoff.

ZEVs shall not include: zero emission off-road equipment and vehicles; zero emission light rail; additions to transit bus fleets utilizing existing catenary electric power; or any vehicle not capable of being licensed for use on public roads.

1.10. “ZEV Investment” shall mean an investment of money by the Settling Defendants that promotes and advances the use and availability of ZEVs within the categories of actions set forth below. The specific types of ZEV investments that may be implemented under the National ZEV Investment Plans are to be determined by reference to the provisions of this Appendix C relating to those Plans. ZEV Investments may include:

1.10.1. Design/planning, construction/installation, operation, and maintenance of ZEV infrastructure. That infrastructure should support and advance the use of ZEVs in the United States by addressing an existing need or supporting a reasonably anticipated need. Such expenditures may include the installation of: (i) Level 2 charging at multi-unit dwellings, workplaces, and public sites, (ii) DC fast charging facilities accessible to all vehicles utilizing non-proprietary connectors, (iii) new heavy-duty ZEV fueling infrastructure (in California); (iv) later generations of the types of charging infrastructure listed in i, ii, and iii; and (v) ZEV fueling stations;

1.10.2. Brand-neutral education or public outreach that builds or increases public awareness of ZEVs. As used here, “brand-neutral” means that the educational or outreach efforts, materials or activities do not feature or favor Settling Defendants’ vehicles or services. Such educational or outreach efforts, materials or activities may contain a statement that they are “sponsored by Volkswagen,” but that statement shall not be prominently displayed, and the efforts, materials or activities shall not feature, favor, or advertise Settling Defendants’ services or vehicles;

1.10.3. 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, scrap and replace with ZEV vehicles;

1.10.4. The “Green City” initiative in California, including, but not limited to: the operation of ZEV car sharing services, zero emission transit applications, and zero emission freight transport projects. The selection of the city (*e.g.*, Los Angeles) will be made by the Settling Defendants in consultation with appropriate local authorities in California.

ZEV Investments shall exclude any investments that are related to projects or activities that the Settling Defendants are or will be required to perform pursuant to any federal, state, or local laws. The excluded projects include, but are not limited to, any aspects of injunctive relief required by this Consent Decree and any of its Appendices other than this Appendix C, any ongoing or potential legal enforcement action, any part of an existing settlement or order in any legal action, or any current or future federal, state, or local legal requirement. Provided, however, a federal, state or local requirement that becomes effective after the approval of a National ZEV Investment Plan or a California ZEV Investment Plan will not preclude a cost from qualifying as a Creditable Cost unless such requirement was reasonably anticipated to become effective during the period covered by such approved Plan.

II. NATIONAL ZEV INVESTMENT PLAN

2.1. National ZEV Investments: Within 10 years after the Effective Date, or such additional time as may be approved by EPA in writing, Settling Defendants shall spend \$1.2 billion in Creditable Costs on ZEV Investments in areas of the United States other than the State of California (“National ZEV Investments”). These expenditures shall be structured so that Settling Defendants shall spend \$300 million in Creditable Costs every 30 months unless otherwise agreed to in writing by EPA. National ZEV Investments to be made during the first 30-month period following the Effective Date shall be made in accordance with this Section and the timelines set forth in this Section. National ZEV Investments to be made during the remaining three 30-month periods shall be made in accordance with the National ZEV Investment Plan requirements set forth herein and the specific plans that shall be submitted by the Settling Defendants 30 months, 60 months, and 90 months from the Effective Date, respectively. Settling Defendants may incur Creditable Costs under the National ZEV Investment Plan only for the types of ZEV Investments described in Paragraphs 1.10.1., 1.10.2., and 1.10.3., except for new heavy-duty ZEV fueling infrastructure and scrap and replace with ZEV vehicles. Settling Defendants are solely responsible for every aspect of selecting the National ZEV Investments, including, but not limited to, the category or combination of the three categories of investments listed above, as well as the timing and locations of any National ZEV Investment. Notwithstanding the preceding, costs incurred in connection with ZEV charging infrastructure installed at or adjacent to Settling Defendants’ dealerships shall not constitute Creditable Costs. Costs incurred for programs or actions to increase public exposure and access to ZEVs may only qualify as Creditable Costs if the program or action is specifically agreed to in writing by EPA in advance of its implementation, and any necessary amendments to the National Creditable Cost Guidance for determining the specific costs allowable have been agreed to by Settling Defendants and EPA.

2.2. National Creditable Cost Guidance: Within 30 Days after the Effective Date, Settling Defendants shall submit to EPA for review and approval in accordance with Section V (Approval of Submissions and EPA/CARB Decisions) of the Consent Decree a proposed National Creditable Cost Guidance developed in accordance with the requirements set forth in Appendix C-1. EPA and the Settling Defendants shall meet and confer as soon as practicable after that submission to discuss the proposed National Creditable Cost Guidance. The final National Creditable Cost Guidance shall be developed by the Settling Defendants in accordance with the requirements set forth in Appendix C-1, taking into account feedback received from EPA during the meet-and-confer session. Unless otherwise agreed in writing with EPA, Settling Defendants shall submit the final National Creditable Cost Guidance within 60 days after the Effective Date.

2.3. National ZEV Outreach Plan: Within 15 days after the Effective Date, Settling Defendants shall submit to EPA for review and approval in accordance with Section V (Approval of Submissions and EPA/CARB Decisions) of the Consent Decree a detailed plan that addresses how Settling Defendants will solicit input from interested States, municipal

governments, federally-recognized Indian tribes (“Tribes”), and federal agencies relevant to Settling Defendants’ development of each 30-month phase of the National ZEV Investment Plan (the “National ZEV Outreach Plan”). The National ZEV Outreach Plan shall include a description of how Settling Defendants will provide information sufficient to allow States, municipal governments, Tribes, and federal agencies to offer meaningful input on the development of the National ZEV Investment Plan, or an update thereto, including the identification of opportunities within States, municipal governments, Tribes, and federal agencies to make National ZEV Investments where most needed. Although this Consent Decree does not impose upon Settling Defendants any obligation to act upon or respond to any suggestions received, Settling Defendants shall provide a reasonable opportunity for suggestions on the development of the National ZEV Investment Plan. Upon approval of the National ZEV Outreach Plan, the Settling Defendants shall implement it. To this end, at a minimum, the National ZEV Outreach Plan shall:

2.3.1. Describe how Settling Defendants will provide States, municipal governments, Tribes, and federal agencies with notice and opportunities to provide suggestions, observations, and offers of assistance or support for actions that the Settling Defendants may take under the National ZEV Investment Plan. At a minimum, Settling Defendants shall provide reasonable notice of these opportunities on a website established by the Settling Defendants in accordance with Paragraph 32 of the Consent Decree. Settling Defendants shall accept for consideration comments by States, municipal governments, Tribes, and federal agencies in advance of submitting a Draft National ZEV Investment Plan to EPA;

2.3.2. Describe the manner in which States, municipal governments, Tribes, and federal agencies will be given an opportunity to offer input on the development of the National ZEV Investment Plan or an update thereto, including specifying the lead time provided for such input and any relevant guidance to facilitate transmission and receipt of such input (*e.g.*, web-based submission, transmittal of hard copy document, preferred document and data formats, etc.); and

2.3.3. Provide a timeline for the implementation of the National ZEV Outreach Plan, including the proposed begin and end dates for the acceptance of comments.

2.4. Submission of Draft National ZEV Investment Plan: Within 120 Days after the Effective Date or 30 Days after the end of the comment acceptance period under the National ZEV Outreach Plan in Paragraph 2.3., whichever occurs later, Settling Defendants shall submit a Draft National ZEV Investment Plan to EPA that describes proposed National ZEV Investments that will be implemented for at least the next 30 months. Settling Defendants shall provide an Executive Summary of the Draft National ZEV Investment Plan that does not contain confidential business information (“CBI”), that could be made public upon request, and that would include all key elements of the Draft National ZEV Investment Plan, as well as a general summary of comments received and how the Settling Defendants considered such

comments. EPA and the Settling Defendants shall meet and confer as soon as practical after the submission in order to discuss the Draft National ZEV Investment Plan. The purpose of the meet and confer is for EPA to provide Settling Defendants with preliminary views on the Draft National ZEV Investment Plan in advance of Settling Defendants' submission of the National ZEV Investment Plan.

2.5. Submission and Content of National ZEV Investment Plan: Within 30 Days after the meet and confer on a Draft National ZEV Investment Plan, Settling Defendants shall submit a National ZEV Investment Plan to EPA for EPA's review and approval as consistent with the requirements of this Appendix C in accordance with Section V (Approval of Submissions and EPA/CARB Decisions) of the Consent Decree. To the extent that the Plan contains any CBI, Settling Defendants shall provide a version of it that contains all the key elements and that can be posted on a website established by the Settling Defendants in accordance with Paragraph 32 of the Consent Decree. Following EPA's approval, Settling Defendants shall publish a link to the National ZEV Investment Plan on the website specified above. The National ZEV Investment Plan shall include at the minimum:

2.5.1. Both types of ZEV Investments described in Paragraphs 1.10.1. and 1.10.2., except for new heavy-duty ZEV fueling infrastructure;

2.5.2. A specific description of the National ZEV Investments, and the associated timelines (with interim milestones), to be implemented within the 30 months covered by the National ZEV Investment Plan that shall result in the expenditure of \$300 million in Creditable Costs during that period;

2.5.3. A projection of anticipated Creditable Costs associated with each National ZEV Investment, on an itemized basis, with items of cost broken down into at least the following categories: (1) personnel costs (including salaries and fringe benefits); (2) travel expenses; (3) office rent; (4) company vehicles; (5) office fixtures and equipment; (6) insurance; (7) office supplies; (8) taxes and governmental fees (excluding corporate income taxes); (9) information technology expenses (including infrastructure, hardware, and software); (10) utilities; (11) services - - such as accounting, human resources, legal, and procurement - - obtained from affiliated companies pursuant to service level agreements; and (12) goods and services obtained via contracts with third parties. Settling Defendants shall not obtain services from affiliated companies pursuant to service level agreements if services of equal quality that meet Settling Defendants' specifications and requirements are available from a third party at a materially lower cost. The approval of any National ZEV Investment Plan by EPA does not constitute approval of any anticipated costs set forth therein, and a good faith failure of Settling Defendants to include a cost does not preclude such cost from qualifying as a Creditable Cost;

2.5.4. The location(s) and type(s) (*e.g.*, Level 2 or DC fast charging) of any infrastructure that Settling Defendants will construct or cause to be constructed under a

National ZEV Investment Plan; the quantities of sites that will be constructed, chargers or ZEV fueling stations per site, costs per site, and the type and number of connectors per charger or site; dates by which each specific construction will commence; specific or estimated dates of completion of such construction; a plan to provide for maintenance of ZEV charging infrastructure for a period of not less than 10 years after the Effective Date, which includes a requirement of periodic maintenance and provides that the charging equipment be marked with a toll-free number for maintenance issues that will be answered by a live operator who is subject to Settling Defendants' control; peer-reviewed research reports or summaries of such reports, to the extent applicable, that provide supporting evidence that such infrastructure type and location can be reasonably expected to advance the use of ZEVs; and an explanation of how such infrastructure meets a reasonable need and advances the use of ZEVs. Any charging infrastructure proposed by the Settling Defendants shall have the ability to service all plug-in ZEVs using non-proprietary connectors as the field evolves by: (i) if necessary, using multiple connectors; and/or (ii) using charging protocols and approaches that anticipate and address the evolving field of vehicle charging. Settling Defendants are free to support evolving standards in the field of non-proprietary connectors, and are not obligated to provide equal support for different types of non-proprietary connectors;

2.5.5. With the exception of the first 30-month National ZEV Investment Plan, any programs or actions to increase public exposure or access to ZEVs, including measures to increase access in underserved areas. Such programs or actions may include, but will not be limited to: partnering with rental fleet and car-share providers to make ZEVs available at no incremental cost to customers; creating new ZEV car-share programs; hosting "ride and drive" events or donating ZEVs to such events; or facilitating other opportunities for members of the public to drive a ZEV other than through purchase or planned purchase. Provided, however, that any such program or action must be specifically approved in writing by EPA, and EPA and the Settling Defendants must agree to any necessary amendments to the National Creditable Cost Guidance prior to incurrence of any costs for such program or action for the costs to qualify as Creditable Costs;

2.5.6. A description of the brand-neutral media activities that Settling Defendants will initiate to provide education and raise awareness regarding ZEVs and ZEV technology, such as: identities of Settling Defendants' third party partners; the media, platforms or fora in which information will be provided (*i.e.*, television, smartphones, print, websites, etc.); geographic placement of any physical advertisements; and quantity and length of placement of any television, radio, or online advertisements. Unless otherwise agreed to in writing by EPA, Settling Defendants shall spend no less than \$25 million and no more than \$50 million on such activities during each 30-month investment cycle;

2.5.7. An explanation, taking into account relevant literature from academia, industry, and government, if available, that each National ZEV Investment, to the extent applicable: increases the use of ZEVs in the United States; addresses a clearly existing need or supports a reasonably anticipated need; has a high likelihood of utilization and provides accessibility/availability where most needed and most likely to be regularly used; supports and/or advances the market penetration of ZEVs in the United States; helps build positive awareness of ZEVs; is intended for, and compatible with, ZEV technology brands that are not limited to the Settling Defendants and/or their subsidiaries; and uses non-proprietary or multiple connectors or charging protocols that anticipate technological changes; and

2.5.8. A certification, in accordance with Paragraph 33 of the Consent Decree, that none of the proposed projects or activities: (1) was approved by the Board of Management of any Settling Defendant prior to September 18, 2015, was required by a contract entered into by the Settling Defendants prior to the date of lodging of the Consent Decree, or is part of a joint effort by Settling Defendants and other automobile manufacturers to create ZEV infrastructure; or (2) is one that the Settling Defendants either are required to perform by any federal, state, or local law, or anticipate will be required to perform during the planned 30-month period.

2.6. Settling Defendants shall start implementing the National ZEV Investment Plan upon its approval and shall maintain or provide for maintenance of any ZEV charging infrastructure for a period of not less than ten (10) years from the Effective Date.

2.7. Independent Third Party Review of Creditable Costs and Attestation for National and California ZEV Investment Plans: Settling Defendants shall retain, upon approval by the United States, after consultation with CARB, a person or entity to serve as the independent third-party certified public accounting firm (“Third-Party Reviewer”) to: (i) audit and review costs asserted by Settling Defendants to be Creditable Costs in the Annual National ZEV Investment Reports or the Annual California ZEV Investment Reports; (ii) perform duties as required by Paragraphs 2.7.4. and 3.4.2.; and (iii) provide an attestation as provided in Paragraphs 2.9.3. and 3.4.1. and the Attestation Requirements listed in Appendix C-1. Settling Defendants or the Third-Party Reviewer shall develop the proposed attestation agreement consistent with the National Creditable Cost Guidance and the California Creditable Cost Guidance, as applicable, developed pursuant to Appendix C-1 and this Appendix. EPA or CARB, as applicable, will approve or disapprove the attestation agreement in accordance with Section V (Approval of Submissions and EPA/CARB Decisions) of the Consent Decree.

2.7.1. Recommendation of Candidates for the Third-Party Reviewer. Within 30 days of the Effective Date, Settling Defendants shall submit to the United States and CARB a list of three candidates for the position of the Third-Party Reviewer. Settling Defendants shall:

2.7.1.1. Submit a resume, biographical information, and any relevant material concerning each of the candidate firms and its competence and qualifications to serve as Third-Party Reviewer; the selected staff assigned to perform the review in California must be licensed in California and the selected firm must maintain an office in California;

2.7.1.2. Describe any past, present, or future business or financial relationship that the candidate has with the Settling Defendants, EPA, or CARB. A candidate may not be an employee or an agent of the Settling Defendants, Settling Defendants' subsidiaries, the United States, or California, nor may the candidate be currently engaged in any work for, or in representation of, Settling Defendants;

2.7.1.3. Verify that, to the Settling Defendants' best knowledge and based on the reasonably available information, either the candidate has no conflicts of interest with regard to this matter or any actual or apparent conflict has been waived by the Settling Defendants, CARB, and the United States;

2.7.1.4. Verify that the candidate has agreed not to be employed by any Settling Defendant, or its subsidiary, for a minimum of two years after the termination of its term as the Third-Party Reviewer; and

2.7.1.5. Accompany all of the information listed above in Paragraph 2.7.1.1 through Paragraph 2.7.1.4. with a certification in accordance with Paragraph 33 of the Consent Decree.

2.7.2. Selection of the Third-Party Reviewer. After receiving the list of candidates from the Settling Defendants, the United States, after consultation with CARB, shall select a Third-Party Reviewer from among the candidates, and notify the Settling Defendants of such selection. If the United States does not select any of the candidates submitted by the Settling Defendants, the process under Paragraph 2.7.1. shall be repeated until the Third-Party Reviewer is selected.

2.7.3. Vacancy in the Position of the Third-Party Reviewer. In the event that the Third-Party Reviewer, once selected, is unable or unwilling to fulfill its duties as the Third-Party Reviewer, the processes under Paragraphs 2.7.1. and 2.7.2. shall be used to select a new Third-Party Reviewer.

2.7.4. Duties of the Third-Party Reviewer. Within 30 days of selection, the Third-Party Reviewer shall develop a plan that will establish a checklist of relevant compliance requirements, procedures for the exchange of any documents and information that the Third-Party Reviewer needs to perform its duties, and any other terms that the Third-Party Reviewer may deem necessary to effectuate its duties.

2.7.5. Information and Access Rights Accorded to Third-Party Reviewer.

Settling Defendants shall provide the Third-Party Reviewer with any information that the Reviewer requests or may reasonably need to fulfill the duties listed in Paragraph 2.7.4. and Paragraph 3.4.2., including, but not limited to: any information regarding the National ZEV Investments or the California ZEV Investments; any costs associated with any National ZEV Investment or any California ZEV Investment; and access to any employees of the Settling Defendants that the Third-Party Reviewer may need to gain to gather further information in the fulfillment of its duties.

2.7.6. Compensation of the Third-Party Reviewer.

Settling Defendants shall be responsible for compensating the Third-Party Reviewer for the performance of its duties in accordance with the terms agreed upon by the Settling Defendants and the selected Third-Party Reviewer. Such terms of agreement shall clarify that the Third-Party Reviewer is not an employee or an agent of the Settling Defendants. Upon EPA's or CARB's request, any agreements between the Settling Defendants and the Third-Party Reviewer shall be made available for EPA's or CARB's review. None of the costs incurred by the Settling Defendants in connection with the selection, retention, or compensation of the Third-Party Reviewer are Creditable Costs within the meaning of Appendix C.

2.8. EPA's Approval of Costs: Settling Defendants shall include in their Annual National ZEV Investment Reports submitted in accordance with Paragraph 2.9. a request for a determination of Creditable Costs expended for approved ZEV Investments during the period covered by the applicable Report. EPA will approve or disapprove such claimed costs as Creditable Costs as soon as practicable in accordance with the National Creditable Cost Guidance after the receipt of the applicable Annual National ZEV Investment Report and all information listed in Paragraph 2.9.3.

2.9. Annual National ZEV Investment Reports: No later than April 30 of each year following EPA's approval of the first National ZEV Investment Plan, Settling Defendants shall submit an annual report regarding the status of each National ZEV Investment. Annual National ZEV Investment Reports shall be submitted in addition to any other reporting obligations under the Decree or any other federal, state, or local law, regulation, permit, or other requirement. Annual National ZEV Investment Reports may be submitted as a part of the Settling Defendants' reports under Section VI (Reporting and Certification Requirements) of the Consent Decree. Each annual report shall include at the minimum:

2.9.1. A description of completed activities/projects and a comparison of the completed activities/projects with the activities/projects described in the approved National ZEV Investment Plan;

2.9.2. Utilization rates of the new ZEV infrastructure, including the percentage of time that each connector is attached to a vehicle, energy dispensed per charger per day,

and any other metrics that indicate the maximum, minimum, and average utilization of a charging station, including trends in usage over time;

2.9.3. For the costs incurred for activities completed in the period covered by the applicable Report that the Settling Defendants claim as Creditable Costs: (i) a description of actual costs incurred in connection with implementation of a specific completed action identified in an approved National ZEV Investment Plan; (ii) supporting documentation required by and listed in the approved National Creditable Costs Guidance; and (iii) an attestation report by the Third-Party Reviewer that contains an attestation that the costs claimed to be Creditable Costs are consistent with the requirements of this Appendix C and the National Creditable Cost Guidance. The supporting documentation shall include a list of completed activities or projects, locations and descriptions of any charging elements placed into service, and copies of any advertisements or other materials disseminated as a part of the activities, and a description of any programs or actions to increase public access and exposure to ZEVs;

2.9.4. Descriptions of any issues or problems encountered in implementing the projects, including issues with maintenance of infrastructure, working with project partners, acquiring necessary property or equipment, and technical aspects of projects;

2.9.5. Each Annual National ZEV Investment Report shall be certified in accordance with Paragraph 33 of the Consent Decree.

Settling Defendants shall make each Annual National ZEV Investment Report available on a website established in accordance with Paragraph 32 of the Consent Decree. To the extent that any Annual National ZEV Investment Report contains CBI, Settling Defendants shall submit to EPA for its review a summary version that can be made publicly available.

2.10. Remaining Costs: If EPA concludes, based on the review of information submitted in the Annual National ZEV Investment Reports pursuant to Paragraph 2.9., that Settling Defendants did not spend \$300 million in Creditable Costs on ZEV Investments during any 30-month phase of the National ZEV Investment Plan, any remaining money shall be invested in the implementation of the next 30-month investment cycle of the National ZEV Investment Plan. EPA and the Settling Defendants shall meet and confer in the event that the Settling Defendants do not spend or anticipate not spending \$1.2 billion at the end of the final, fourth 30-month phase of the National ZEV Investment Plan.

2.11. Dispute Resolution: Any dispute regarding obligations established in this Section II of Appendix C shall be resolved in accordance with Dispute Resolution provisions set forth in Section IX of the Consent Decree. Any dispute arising under Paragraph 2.5. of Appendix C regarding EPA's approval of the National ZEV Investment Plan and brought pursuant to Paragraph 63 of the Consent Decree shall be subject to the standard of review set forth in Paragraph 65.a of the Consent Decree. Any other dispute arising under Section II of

Appendix C and brought pursuant to Paragraph 63 of the Consent Decree shall be subject to the standard of review set forth in Paragraph 65.b of the Consent Decree.

2.12. Stipulated Penalties: The following stipulated penalties shall apply to failures to comply with the requirements of this Section II of this Appendix C. All stipulated penalties listed below shall be payable to the United States in accordance with Section VII (Stipulated Penalties and Other Mitigation Trust Payments) of the Consent Decree.

2.12.1. If the Settling Defendants fail to invest a total of \$600 million in EPA-approved Creditable Costs during the first two 30-month investment cycles as provided in Paragraph 2.1. of Appendix C, as reported in the first five Annual National ZEV Investment Reports submitted under Paragraph 2.9., the Settling Defendants shall pay a stipulated penalty amounting to the difference between \$600 million and the cumulative total amount that EPA approved as Creditable Costs after reviewing the first five Annual National ZEV Investment Reports. The Settling Defendants shall pay this stipulated penalty in addition to investing any amounts of money that were unspent or remaining from one 30-month cycle during the next 30-month investment cycle as required by Paragraph 2.10.

2.12.2. If the Settling Defendants fail to invest a total of \$1.2 billion in EPA-approved Creditable Costs within 10 years of the Effective Date as provided in Paragraph 2.1. of Appendix C, Settling Defendants shall pay a stipulated penalty amounting to the difference between \$1.2 billion and the cumulative total amount that EPA approved as Creditable Costs after reviewing the Settling Defendants' final Annual National ZEV Investment Report.

2.12.3. If the Settling Defendants fail to submit the National Creditable Cost Guidance in accordance with Paragraph 2.2. and Appendix C-1, Settling Defendants shall pay stipulated penalties per each day on which the National Creditable Cost Guidance is overdue or submitted not in accordance with the requirements set forth in Paragraph 2.2. or Appendix C-1:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$20,000

2.12.4. If the Settling Defendants fail to submit the National ZEV Outreach Plan in accordance with Paragraph 2.3., Settling Defendants shall pay stipulated penalties per each day on which the National ZEV Outreach Plan is overdue or submitted not in accordance with requirements set forth in Paragraph 2.3.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$2,500
31st Day and beyond	\$10,000

2.12.5. If the Settling Defendants fail to implement the EPA-approved National ZEV Outreach Plan in accordance with Paragraph 2.3., Settling Defendants shall pay stipulated penalties per each day on which the National ZEV Outreach Plan is not implemented in accordance with the EPA-approved timelines as provided in Paragraph 2.3.3. and other requirements of the EPA-approved National ZEV Outreach Plan:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$10,000

2.12.6. If the Settling Defendants fail to submit the Draft National ZEV Investment Plan in accordance with Paragraph 2.4., Settling Defendants shall pay stipulated penalties per each day on which the Draft National ZEV Investment Plan is overdue:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$10,000

2.12.7. If the Settling Defendants fail to submit the first National ZEV Investment Plan in accordance with Paragraph 2.5., Settling Defendants shall pay stipulated penalties per each day on which the first National ZEV Investment Plan is overdue or submitted not in accordance with the requirements of Paragraph 2.5., including without limitation each requirement set forth in Paragraph 2.5.1. through Paragraph 2.5.8.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

2.12.8. If the Settling Defendants fail to submit the remaining three National ZEV Investment Plans: (i) in accordance with the deadlines set forth in Paragraph 2.1., (ii) containing all the required elements set forth in Paragraph 2.5. and, if applicable, expenditures of remaining costs under Paragraph 2.10., and (iii) having undergone all other procedures applicable to the preparation of National ZEV Investment Plans set forth

in Section II, including without limitation Paragraphs 2.2., 2.3., 2.4. and 2.5., Settling Defendants shall pay stipulated penalties per each day on which each National ZEV Investment Plan is overdue or submitted not in accordance with the above-listed requirements:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

2.12.9. If the Settling Defendants fail to maintain or provide for maintenance of installed ZEV charging infrastructure as required by Paragraph 2.6. and the maintenance plan of their approved National ZEV Investment Plan, Settling Defendants shall pay stipulated penalties per each day for each failure to implement the approved maintenance plan:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

2.12.10. If the Settling Defendants fail to submit a list of candidates for the Third-Party Reviewer in accordance with Paragraph 2.7.1., and if applicable Paragraphs 2.7.2. and 2.7.3., Settling Defendants shall pay stipulated penalties per each day on which the list of candidates is overdue or submitted not in accordance with the requirements set forth in Paragraph 2.7.1.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$10,000

2.12.11. If the Settling Defendants fail to submit Annual National ZEV Investment Reports in accordance with Paragraph 2.9., Settling Defendants shall pay stipulated penalties per each day on which the Annual National ZEV Investment Reports are overdue or submitted not in accordance with the requirements set forth in Paragraph 2.9.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

2.13. Modifications: This Section II of Appendix C may be modified in accordance with Section XVI (Modification) of the Consent Decree. The following modifications shall be considered non-material for the purpose of Paragraph 91 of the Consent Decree:

- (a) modifications of any schedules established under this Section II by less than one year;
- (b) modification of a requirement that the Settling Defendants spend \$300 million dollars in each 30-month investment cycle of the National ZEV Investment Plan; and (c) modifications, revisions, or amendments to the Appendix C-1 to this Appendix C and/or National Creditable Cost Guidance.

2.14. Enforcement: EPA, represented by the U.S. Department of Justice, is responsible for the enforcement of any requirements under this Section II.

III. CALIFORNIA ZEV INVESTMENT PLAN

3.1. California ZEV Investments: Settling Defendants shall spend \$800 million in Creditable Costs within 10 years of the Effective Date on ZEV Investments to be implemented in the State of California (“California ZEV Investments”). Unless otherwise approved by CARB in writing, Settling Defendants shall spend \$200 million in Creditable Costs on ZEV Investments in California during each 30-month period covered by each California ZEV Investment Plan.

3.2. California Creditable Cost Guidance: Within 30 Days after the Effective Date, Settling Defendants shall submit to CARB for review and approval in accordance with Section V (Approval of Submissions and EPA/CARB Decisions) of the Consent Decree a proposed California Creditable Cost Guidance developed in accordance with the requirements set forth in Appendix C-1. CARB and the Settling Defendants shall meet and confer as soon as practicable after that submission to discuss the proposed California Creditable Cost Guidance. The final California Creditable Cost Guidance shall be developed by the Settling Defendants in accordance with the requirements set forth in Appendix C-1, taking into account feedback received from CARB during the meet-and-confer session. Unless otherwise agreed in writing with CARB, Settling Defendants shall submit the final California Creditable Cost Guidance within 60 days after the Effective Date. In addition to costs specifically excluded in Appendix C-1, Settling Defendants agree not to propose, as California Creditable Costs, costs incurred in connection with ZEV charging infrastructure installed at or adjacent to Settling Defendants’ dealerships.

3.3. California ZEV Investment Plan Submission and Approval Process.

3.3.1. California ZEV Investment Plans Submission Timing. Within 120 Days of the Effective Date, Settling Defendants shall submit to CARB, for CARB’s review and approval, the first \$200 million California ZEV Investment Plan covering a period not to exceed 30 months that is consistent with the terms of this Appendix C. Settling Defendants shall submit subsequent California ZEV Investment Plans 29 months after submission of the then-current plan. Settling Defendants shall prepare a public version of each Draft and Approved 30-month California ZEV Investment Plan, that includes all

key elements of the Plan; each version will be posted by the Settling Defendants on a website established by the Settling Defendants in accordance with Paragraph 32 of the Consent Decree. Unless otherwise authorized by CARB in writing, each 30-month California ZEV Investment Plan must include the elements listed in Paragraph 3.3.2.

3.3.2. Draft California ZEV Investment Plan Contents and Draft Submittal Process. At least 20 days before submitting any Draft California ZEV Investment Plan for approval, Settling Defendants shall meet and confer with CARB to determine what additional information, other than listed below, to include in the California ZEV Investment Plan submission. As part of this process, CARB may provide the Settling Defendants with information regarding ZEV Investment opportunities that are consistent with the objectives and criteria set forth in Appendix C. Unless otherwise authorized by CARB in writing, this Draft California ZEV Investment Plan must be consistent with this Appendix C and must include, at a minimum, all of the following:

3.3.2.1. A description of all California ZEV Investments that the Settling Defendants will make, including infrastructure, access, and education, as well as including measures to increase access in underserved areas, though each California ZEV Investment need not contain all four components;

3.3.2.2. An explanation of how each California ZEV Investment makes progress toward and/or meets one or more of the goals identified;

3.3.2.3. An estimated schedule for implementing each California ZEV Investment and milestones in 6-month intervals applicable to each specific California ZEV Investment;

3.3.2.4. A projection of anticipated Creditable Costs associated with each California ZEV Investment, on an itemized basis, with items of cost broken down into at least the following categories: (1) personnel costs (including salaries and fringe benefits); (2) travel expenses; (3) office rent; (4) company vehicles; (5) office fixtures and equipment; (6) insurance; (7) office supplies; (8) taxes and governmental fees (excluding corporate income taxes); (9) information technology expenses (including infrastructure, hardware, and software); (10) utilities; (11) services -- such as accounting, human resources, legal, and procurement -- obtained from affiliated companies pursuant to service level agreements; and (12) goods and services obtained via contracts with third parties. Settling Defendants shall not obtain services from affiliated companies pursuant to service level agreements if services of equal quality that meet Settling Defendants' specifications and requirements are available from a third party at a materially lower cost. The approval of any California ZEV Investment Plan by CARB does not constitute approval of any anticipated costs set forth therein and a good faith

failure of Settling Defendants to include a cost does not preclude such cost from qualifying as a Creditable Cost;

3.3.2.5. For infrastructure, an estimation of the following, to the extent possible: the geographic regions and type(s) (*e.g.*, Level 2 AC charging or DC fast charging) of any infrastructure that Settling Defendants will construct, or cause to be constructed under a California ZEV Investment Plan, which must include a variety of cities, metro areas, types of locations (workplace, multi-family, etc.); the quantities of sites that will be constructed, chargers or ZEV fueling stations per site, costs per site, and the type and number of connectors per charger or site; specific or estimated dates of completion of such construction; operating model and utilization statistics to be collected; a plan to provide for maintenance of ZEV charging infrastructure for a period of not less than 10 years after the Effective Date, which includes a requirement of periodic maintenance and provides that the charging equipment be marked with a toll-free number for maintenance issues that will be answered by a live operator who is subject to Settling Defendants' control; and an explanation of how such infrastructure meets a reasonable need and advances the use of ZEVs. Any charging infrastructure proposed by the Settling Defendants shall have the ability to service all plug-in ZEVs using non-proprietary connectors as the field evolves by: (i) if necessary, using multiple connectors; and/or (ii) using charging protocols and approaches that anticipate and address the evolving field of vehicle charging. Settling Defendants are free to support evolving standards in the field of non-proprietary connectors, and are not obligated to provide equal support for different types of non-proprietary connectors. Settling Defendants shall maintain or provide for maintenance of any ZEV charging infrastructure for a period of not less than ten (10) years from the Effective Date;

3.3.2.6. For any brand-neutral media activities the Settling Defendants will initiate in California, in addition to the requirements set forth in this Section III, Settling Defendants must address the requirements in the National ZEV Investment Plan in Paragraph 2.5.6., except for the spending requirements, and describe how the proposed National and California activities are related and/or differ;

3.3.2.7. A certification, in accordance with Paragraph 33 of the Consent Decree, that none of the proposed projects or activities: (1) was approved by the Board of Management of any Settling Defendant prior to September 18, 2015, was required by a contract entered into by the Settling Defendants before the date of lodging of the Consent Decree, or is part of a joint effort by Settling Defendants and other automobile manufacturers to create ZEV infrastructure; or (2) is one that the Settling Defendants either are required to perform by any federal, state, or local law, or anticipate will be required to perform during the planned 30-month period;

3.3.2.8. An explanation that all the ZEV Investments are not concentrated in one area of California;

3.3.2.9. ZEV Investments do not include funding for research, such as university research or inductive wireless charging research;

3.3.2.10. A description of how Settling Defendants will monitor and maintain each ZEV Investment; and

3.3.2.11. Any other information that CARB may reasonably request during the meet and confer under Paragraph 3.3.2.

3.3.3. California ZEV Investment Plan Review and Determination. CARB shall review each California ZEV Investment Plan. CARB may, in its discretion, approve or disapprove each California ZEV Investment Plan, in whole or in part. CARB shall notify Settling Defendants of its approval or disapproval in writing and, if not approved in whole, of which parts were approved. Settling Defendants may begin implementing any approved portions immediately. If CARB disapproves the California ZEV Investment Plan, in whole or in part, CARB and Settling Defendants shall meet and confer within 10 days of Settling Defendants' receipt of CARB's disapproval. Settling Defendants may resubmit a new version of the disapproved portions of the California ZEV Investment Plan, in whole or in part, to CARB, for CARB's approval, within 10 days of receiving CARB's disapproval.

3.4. Independent Third-Party Review.

3.4.1. Annual Third-Party Review of California Creditable Costs and Attestation. Settling Defendants shall retain, upon approval by the United States pursuant to Paragraph 2.7., after consultation with CARB, a person or entity to serve as the independent Third-Party Reviewer to: (i) audit and review costs asserted by Settling Defendants to be Creditable Costs in the Annual California ZEV Investment Reports; (ii) perform duties as required by Paragraph 2.7.4. and Paragraph 3.4.2.; and (iii) provide an attestation as provided in this Paragraph, Paragraph 2.9.3., and the Attestation Requirements listed in Appendix C-1. Settling Defendants or the Third-Party Reviewer shall develop the proposed attestation agreement consistent with the California Creditable Cost Guidance developed pursuant to Appendix C-1 and this Appendix. CARB will approve or disapprove the attestation agreement. The Third-Party Reviewer will have access rights and information request rights as outlined in Paragraph 2.7.5. The Settling Defendants shall be responsible for the compensation of the Third-Party Reviewer as outlined in Paragraph 2.7.6.

3.4.2. Duties of the Third-Party Reviewer.

3.4.2.1. The Third-Party Reviewer shall provide results of its review and a report by April 30 of each year to CARB and Settling Defendants simultaneously, in a format to be determined by CARB, including a determination as to whether Settling Defendants are complying with Section III of Appendix C of the Consent Decree, in whole or in part, in California, and, if in part, with which parts of the Consent Decree Settling Defendants are not complying; and a recommendation as to whether Settling Defendants' expenditures in California qualify as Creditable Costs; and

3.4.2.2. Perform any other duties which are reasonably necessary to ensure compliance with Appendix C.

3.4.3. Review of Third-Party Reviewer Reports and/or Results. CARB and Settling Defendants shall review the Third-Party Reviewer results and/or reports. If the Third-Party Reviewer determines that Settling Defendants are not complying with the Consent Decree, in whole or in part, Settling Defendants shall meet and confer with CARB within 10 days of receiving the Third-Party Reviewer's results to discuss what Settling Defendants shall do to comply.

3.5. California Creditable Costs

3.5.1. CARB Approval of California's Creditable Costs. Settling Defendants shall include in their Annual California ZEV Investment Reports submitted in accordance with Paragraph 3.6. a request for a determination of Creditable Costs expended for approved ZEV Investments during the period covered by the applicable Report. CARB will approve or disapprove such claimed costs as Creditable Costs as soon as practicable in accordance with the California Creditable Cost Guidance after the receipt of the applicable Annual California ZEV Investment Report, receipt of all information listed in Paragraph 3.6., and receipt of the Third-Party Reviewer's Report and Attestation as provided in Appendix C-1 and Paragraph 3.4.

3.5.2. Remaining Costs. If CARB concludes, based on the review of information submitted in the Annual California ZEV Investment Reports pursuant to Paragraph 3.6., California Creditable Cost Guidance, or Third-Party Reviewer information, that Settling Defendants did not spend \$200 million in Creditable Costs on ZEV Investments during any 30-month phase of the California ZEV Investment Plan, any remaining money shall be invested in the implementation of the next 30-month investment cycle of the California ZEV Investment Plan. CARB and the Settling Defendants shall meet and confer in the event that the Settling Defendants do not spend or anticipate not spending \$800 million at the end of the final, fourth 30-month phase of the California ZEV Investment Plan.

3.6. California ZEV Investment Plan Reports and Meetings

3.6.1. Semi-annual Meetings. An official of Settling Defendants shall meet with a California official no later than May 1 and November 1 of each year to provide information on the approved California ZEV Investment Plan and its implementation. Settling Defendants shall also designate an official who will serve as the point of contact for California related to any matter concerning the California ZEV Investments.

3.6.2. Annual and Final Reporting Dates. No later than April 30 of each year following CARB's approval of the California ZEV Investment Plan, Settling Defendants shall submit an annual report regarding the status of each ZEV Investment included in the approved California ZEV Investment Plan. No later than 120 days after 10 years from the Effective Date, Settling Defendants shall submit a final report to CARB regarding the status of each ZEV Investment included in the approved California ZEV Investment Plan. Settling Defendants shall make each Annual California ZEV Investment Report and the final report available on a website established by the Settling Defendants in accordance with Paragraph 32 of the Consent Decree. To the extent that any annual or final report for the California ZEV Investment Plans contains confidential business information, Settling Defendants shall submit to CARB for its review and approval a version that can be made publicly available. Reports under this Section shall be in addition to any other reporting obligations under the Decree, or any other federal, California, or local law, regulation, permit, or other requirement.

3.6.3. Report Contents. Each annual report and the final report shall include, at a minimum:

3.6.3.1. The status of each ZEV Investment identified in the California ZEV Investment Plan, including a description of project activities/actions and completed activities/projects, and a comparison of the completed activities/projects with the activities/projects described in the approved California ZEV Investment Plan;

3.6.3.2. Utilization rates of the new ZEV infrastructure, including the percentage of time that each connector is attached to a vehicle, energy dispensed per charger per day, and any other metrics that indicate the maximum, minimum, and average utilization of a charging station, including trends in usage over time;

3.6.3.3. Descriptions of any issues or problems encountered in implementing the projects, including issues with maintenance of infrastructure, working with project partners, acquiring necessary property or equipment, and technical aspects of projects;

3.6.3.4. Any other information pertaining to the California ZEV Investment Plan that CARB reasonably requests at least 30 days prior to the due date of any report;

3.6.3.5. A certification in accordance with Paragraph 33 of the Consent Decree;

3.6.3.6. For the costs incurred for activities completed in the period covered by the applicable Report that the Settling Defendants claim as Creditable Costs: (i) a description of actual costs incurred in connection with implementation of a specific completed action identified in an approved California ZEV Investment Plan; (ii) supporting documentation required by and listed in the approved California Creditable Costs Guidance; and (iii) an attestation report by the Third-Party Reviewer that contains an attestation that the costs claimed to be Creditable Costs are consistent with the requirements of this Appendix C, Appendix C-1, and the California Creditable Cost Guidance. The supporting documentation shall include a list of completed activities or projects, locations, and descriptions of any charging elements placed into service, copies of advertisements or other materials disseminated as a part of the activities, a description of any programs or actions to increase public access and exposure to ZEVs, supporting documentation for all programs or actions encompassed in the “Green City” initiative, as well as any other documentation requested by CARB at least 10 days prior to the due date of any report.

3.6.4. Reporting Costs. Settling Defendants shall bear the expense of all reporting, and said expenses shall not be included in the calculation of Settling Defendants’ eight hundred million dollar (\$800,000,000) commitment.

3.7. Dispute Resolution: Any dispute regarding obligations established in this Section III of Appendix C shall be resolved in accordance with Dispute Resolution provisions set forth in Section IX of the Consent Decree. Any dispute arising under Paragraph 3.3. of Appendix C regarding CARB’s approval of the California ZEV Investment Plan and brought pursuant to Paragraph 63 of the Consent Decree shall be subject to the standard of review set forth in Paragraph 65.a of the Consent Decree. Any other dispute arising under Section III of Appendix C and brought pursuant to Paragraph 63 of the Consent Decree shall be subject to the standard of review set forth in Paragraph 65.b of the Consent Decree.

3.8. Stipulated Penalties: The following stipulated penalties shall apply to failures to comply with the requirements of Section III of this Appendix C. All stipulated penalties listed below shall be payable to CARB and deposited in the Air Pollution Control Fund in accordance with Section VII (Stipulated Penalties and Other Mitigation Trust Payments) of the Consent Decree.

3.8.1. If the Settling Defendants fail to invest a total of \$400 million in CARB-approved Creditable Costs during the first two 30-month investment cycles as provided in Paragraph 3.1. of Appendix C, as reported in the first five Annual California ZEV Investment Reports submitted under Paragraph 3.6., the Settling Defendants shall pay a stipulated penalty amounting to the difference between \$400 million and the cumulative total amount that CARB approved as California Creditable Costs after reviewing the first five Annual California ZEV Investment Reports. The Settling Defendants shall pay this stipulated penalty in addition to investing any amounts of money that were unspent or remaining from one 30-month cycle during the next 30-month investment cycle as required by Paragraph 3.5.2.

3.8.2. If the Settling Defendants fail to invest a total of \$800 million in CARB-approved Creditable Costs within 10 years of the Effective Date as provided in Paragraph 3.1. of Appendix C, Settling Defendants shall pay a stipulated penalty amounting to the difference between \$800 million and the cumulative total amount that CARB approved as Creditable Costs after reviewing the Settling Defendants' final Annual and Final California ZEV Investment Reports.

3.8.3. If the Settling Defendants fail to submit the California Creditable Cost Guidance in accordance with Paragraph 3.2. and Appendix C-1, Settling Defendants shall pay stipulated penalties per each day on which the California Creditable Cost Guidance is overdue or submitted not in accordance with the requirements set forth in Paragraph 3.2. or Appendix C-1:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$20,000

3.8.4. If the Settling Defendants fail to submit any of the four California ZEV Investment Plans in accordance with Paragraph 3.3.1. or Paragraph 3.3.2., Settling Defendants shall pay stipulated penalties per each day on which any of the California ZEV Investment Plans is overdue or submitted not in accordance with the requirements of Paragraph 3.3.1. or Paragraph 3.3.2., including without limitation each requirement set forth in Paragraph 3.3.2.1 through Paragraph 3.3.2.11.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

3.8.5. If the Settling Defendants fail to submit a list of candidates for the Third-Party Reviewer in accordance with Paragraph 3.4.1., Paragraph 2.7.1, and if applicable

Paragraphs 2.7.2. and 2.7.3., Settling Defendants shall pay stipulated penalties per each day on which the list of candidates is overdue or submitted not in accordance with the requirements set forth in Paragraph 2.7.1.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$1,000
15th through 30th Day	\$5,000
31st Day and beyond	\$10,000

3.8.6. If the Settling Defendants fail to attend any of the meetings or fail to submit any of the Annual California ZEV Investment Reports in accordance with Paragraph 3.3.3, Paragraph 3.4.3., Paragraph 3.5. or Paragraph 3.6., Settling Defendants shall pay stipulated penalties per each day on which the meetings or Annual California ZEV Investment Reports are overdue or submitted not in accordance with the requirements set forth in Paragraph 3.3.3, Paragraph 3.4.3., Paragraph 3.5. or Paragraph 3.6.:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

3.8.7. If the Settling Defendants fail to maintain or provide for maintenance of installed ZEV charging infrastructure as required by Paragraph 3.3.2.5. and the maintenance plan of their approved California ZEV Investment Plan, Settling Defendants shall pay stipulated penalties per each day for each failure to implement the approved maintenance plan:

Duration of compliance failure	Stipulated penalty
1st through 14th Day	\$2,000
15th through 30th Day	\$10,000
31st Day and beyond	\$50,000

3.8.8. Aggregation of Penalties. Each penalty in each subparagraph in this Paragraph 3.8. shall be in addition to any other penalty in any other Paragraph in this or any other portion of the Consent Decree.

3.9. Modifications: This Section III of Appendix C may be modified in accordance with Section XVI (Modification) of the Consent Decree. The following modifications shall be considered non-material for the purpose of Paragraph 91 of the Consent Decree:

- (a) modifications of any schedules established under this Section III by less than one year;
- (b) modification of a requirement that the Settling Defendants spend \$200 million dollars in each 30-month investment cycle of the California ZEV Investment Plan; and (c) modifications,

revisions, or amendments to the Appendix C-1 to this Appendix C and/or the California Creditable Cost Guidance.

3.10. Enforcement: The California Air Resources Board and California Office of the Attorney General may enforce the requirements of Section III.

APPENDIX C-1
Creditable Cost Guidance and Attestation Requirements for
the National and California ZEV Investment Plan Commitments

APPENDIX C-1

**CREDITABLE COST GUIDANCE
AND ATTESTATION REQUIREMENTS FOR
THE NATIONAL AND CALIFORNIA ZEV INVESTMENT PLAN COMMITMENTS**

This Appendix C-1 further elaborates on the requirements for the National Creditable Cost Guidance (“NCCG”) and the California Creditable Cost Guidance (“CCCG”) (collectively, the Creditable Cost Guidances (“CCG”)), and Attestation Requirements pursuant to Appendix C of the Consent Decree, and sets forth the requirements for costs incurred by Settling Defendants to qualify as Creditable Costs in connection with the National and California ZEV Investment Plans. The requirements for Creditable Costs are organized and presented in three sections, as follows:

Section I - Statement of Objectives, Definitions, and Limitations.

Section II - Accounting procedures for the accounting for, substantiation, and reporting of Creditable Costs.

Section III - Attestation Requirements to establish whether an expenditure is a Creditable Cost.

I. STATEMENT OF OBJECTIVES, DEFINITIONS, AND LIMITATIONS

Objectives - The objectives of the CCG are to ensure that the costs Settling Defendants submit as Creditable Costs are not specifically excluded below and are otherwise (a) reasonable, (b) necessary, and either (c) directly connected or directly allocable to eligible ZEV Investment projects or activities in the National and California ZEV Investment Plans approved by EPA or CARB, as applicable, pursuant to procedures set out in Appendix C of the Consent Decree. The definitions and limitations below will guide the determination of whether a cost meets this objective.

Definitions and Limitations - In order to qualify as Creditable Costs, costs must be: (1) “reasonable,” “necessary,” and either “directly connected” or “directly allocable,” as defined in Paragraph 1 (Requirements) below; (2) not expressly excluded as a Creditable Cost in the cost categories set out in Paragraph 2 (Excluded Categories of Costs) below; and (3) within the limitations set forth in Paragraph 4 (Specific Limitations on Certain Cost Categories) and Paragraph 5 (General Limitations on All Personnel, Overhead, and Service Level Agreement Costs) below.

1. Requirements

For the purposes of the CCG and Attestation Requirements, the following definitions in Paragraphs 1.1 through 1.4 shall apply.

1.1. Reasonable - A cost is reasonable if, in its nature and amount, it does not exceed that which would be incurred by a prudent person in the conduct of competitive business. What is reasonable depends upon a variety of considerations and circumstances, including: (1) whether the cost is the type of cost generally recognized as ordinary and necessary for implementation of ZEV Investment projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan; (2) generally accepted sound business practices (consistent with Settling Defendants' existing procurement policies), arm's-length bargaining, and Federal, State, and local laws and regulations; (3) any significant deviations from the Settling Defendants' established practices; and (4) comparison to the costs of similar projects or project components of the same size, in the same industry, or in the same geographic area at or near the time that the expenditure was made.

1.2. Necessary - A cost is necessary if the ZEV Investment projects or activities approved as part of the National or California ZEV Investment Plan could not have been accomplished without incurrence of the cost.

1.3. Directly Connected - A cost is directly connected if it is incurred for the sole purpose of implementing approved ZEV Investment projects or activities as part of the National or California ZEV Investment Plan.

1.4. Directly Allocable - A cost is allocable if it is either directly connected or if some portion of the cost can be directly attributed to implementation of the ZEV Investment projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan on an equitable basis that takes into account the causal/beneficial relationship of the attributed cost to the activities to which it is attributed.

2. Excluded Categories of Costs

Costs that are excluded from Creditable Costs in this Paragraph 2 shall not qualify as Creditable Costs under any other cost principle.

2.1. Disallowed Overhead - A cost incurred by any entity or distinct business group created by Settling Defendants to carry out a National or California ZEV Investment Plan, which is neither Directly Connected nor Directly Allocable to an approved ZEV Investment project or activity included in that National or California ZEV Investment Plan, is not a Creditable Cost.

2.2. Electricity Costs - Unless otherwise agreed to in writing by EPA or CARB, as applicable, the costs for electricity for charging ZEVs are not Creditable Costs.

2.3. Entertainment Expenses - Costs of amusement, diversion, social activities, and any directly associated costs such as tickets to shows or sports events, meals, lodging, rentals, transportation, and gratuities are not Creditable Costs. Costs of membership in social, dining, or country clubs or other organizations having the same purposes are not Creditable Costs, regardless of whether the cost is reported as taxable income to the employees.

2.4. Fines and Penalties - Costs of fines and penalties resulting from violations of, or failure of the Settling Defendants to comply with, Federal, State, local, or foreign laws and regulations, are not Creditable Costs.

2.5. General and Administrative Costs - General and Administrative costs are costs incurred by the parent of the entity or distinct business group created to implement the projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan for the support of the parent's overall organization. General and Administrative costs are not Creditable Costs.

2.6. Income Taxes - All income taxes, with the exception of payroll taxes, are not Creditable Costs.

2.7. Interest and Other Financial Costs - Interest on borrowings (however represented), bond discounts, and costs of financing and refinancing capital (net worth plus long-term liabilities), are not Creditable Costs.

2.8. Legal Costs - Costs for legal services related to issues of Settling Defendants' compliance with the requirements of Appendix C or the Consent Decree are not Creditable Costs.

2.9. Pass-through Costs - Discrete items of cost -- such as surcharges imposed by electric utilities or fees imposed by local governments -- that are imposed by a third party and passed through or transferred by Settling Defendants to an end user, customer

or other third party on a clearly-stated, one-for-one basis -- or are otherwise borne by the end user, customer or other third party -- are not Creditable Costs.

2.10. Trademark - Costs incurred in connection with the establishment and defense of any trademark or other intellectual property are not Creditable Costs.

3. General Guidance on Costs

3.1. Federal Acquisition Regulations - In developing their proposed Creditable Cost Guidances, Settling Defendants may draw from provisions of the Federal Acquisition Regulations, 48 C.F.R. Chapter 1, Subchapter E, Part 31, Subpart 31.205, to the extent appropriate and not inconsistent with the definitions and limitations set forth in this Appendix C-1.

4. Specific Limitations on Certain Cost Categories.

4.1. Land or Facility Rental; Real Estate Acquisition - Subject to the expressed limitations, the following costs may qualify as Creditable Costs.

4.1.1. Rental costs under operating leases, to the extent that the rates are reasonable at the time of the lease decision, after consideration of (i) rental costs of comparable property, if any; (ii) market conditions of the area; (iii) the type, life expectancy, condition, and value of the property leased; (iv) alternatives available; and (v) other provisions of the agreement, may qualify as Creditable Costs.

4.1.2. Rental costs under a sale and leaseback arrangement may qualify as Creditable Costs only up to the amount the Settling Defendants would be allowed if the Settling Defendants had retained title.

4.1.3. Charges in the nature of rent for property between any divisions, subsidiaries, or organization under common control, to the extent that they do not exceed the normal costs of ownership, such as depreciation, taxes, insurance, facilities capital cost of money, and maintenance (excluding interest or other unallowable costs pursuant to Federal Acquisition Regulations, 48 C.F.R. Chapter 1, Subchapter E, Part 31, Subpart 31.205), provided that no part of such costs shall duplicate any other allowed cost. Rental cost of personal property leased from any division, subsidiary, or affiliate of the Settling Defendants under common control that has an established practice of leasing the same or similar property to unaffiliated

lessees may qualify as Creditable Costs in accordance with Paragraph 4.1.1. above.

4.1.4. Land and building acquisitions related to a ZEV Investment are not Creditable Costs unless: (i) such acquisition is necessary to provide Settling Defendants with assurance that they will have access to such land or building for the ten-year period after the Effective Date, or (ii) such acquisition is materially less expensive than leasing the land or building for the ten-year period after the Effective Date.

4.2. Materials - A cost for the physical goods that are required to implement projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan and taxes thereon may qualify as Creditable Costs.

4.3. Marketing - Projects or activities necessary to implement brand-neutral education or public outreach programs that are designed to build or increase public awareness of ZEVs may qualify as Creditable Costs. Costs incurred with marketing of Settling Defendants' products or services are not Creditable Costs.

4.4. National or California ZEV Investment Plan Project Management - A cost for the supervision, oversight, and management of project personnel, including Settling Defendants' employee and contractor or vendor personnel, which are required to implement projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan, may qualify as Creditable Costs.

4.5. Personnel/FTE - Subject to the expressed limitations, the following costs may qualify as Creditable Costs.

4.5.1. Compensation for personnel includes all remuneration paid currently or accrued, in whatever form and whether paid immediately or deferred, for services rendered by employees to the Settling Defendants during and for the implementation of the projects or activities in the Settling Defendants' approved National or California ZEV Investment Plan. This includes salaries; wages; bonuses; employee insurance; fringe benefits; contributions to pension plans; and allowances for off-site pay, incentive pay, location allowances, hardship pay, severance pay, and cost of living differential. Compensation for personnel may qualify as a Creditable Cost subject to the following general criteria.

4.5.1.1. Compensation for personnel must be for work performed by the employee in the current year and must not represent a retroactive adjustment of prior years' salaries or wages.

4.5.1.2. The compensation in total must be reasonable and necessary for the work performed.

4.5.1.3. The compensation must be based upon and conform to the terms and conditions of the Settling Defendants' established compensation plan or practice followed so consistently as to imply, in effect, an agreement to make the payment.

4.5.1.4. No presumption will exist that compensation is a Creditable Cost where the Settling Defendants introduce major revisions of existing compensation plans or new plans and the Settling Defendants have not provided to EPA or CARB, as applicable, either before initiating implementation or within a reasonable period after it, an opportunity to review the creditability of the changes.

4.5.2. Reasonableness. Compensation for personnel may be considered a Creditable Cost if the total compensation conforms generally to compensation paid by other firms of the same size, in the same industry, or in the same geographic area for similar services or work performed. This does not preclude EPA or CARB, as applicable, from challenging the reasonableness of an individual element of compensation where costs are excessive in comparison with compensation paid by other firms of the same size, same industry, or in the same geographic areas for similar services.

4.5.3. Domestic and foreign differential pay.

4.5.3.1. When personal services are performed in a foreign country, compensation may also include a differential that may properly consider all expenses associated with foreign employment such as housing, cost of living adjustments, transportation, bonuses, additional Federal, State, local or foreign income taxes resulting from foreign assignment, and other related expenses.

4.5.3.2. Although the additional taxes in Paragraph 4.5.3.1. above may be considered in establishing foreign overseas differential, any

increased compensation calculated directly on the basis of an employee's specific increase in income taxes is not a Creditable Cost. Differential allowances for additional Federal, State, or local income taxes resulting from domestic assignments are not Creditable Costs.

5. General Limitation on All Personnel, Overhead, and Service Level Agreement Costs

5.1. In addition to having to meet all of the requirements set forth above, all costs incurred by Settling Defendants and any entity or distinct business group created by Settling Defendants to carry out a National or California ZEV Investment Plan for: (i) personnel, (ii) service-level agreements, and (iii) office space and services (direct or indirect overhead) for employees of Settling Defendants or a newly created entity, shall be limited to no more than fourteen (14) percent of the Creditable Costs incurred during the period covered by the first two Annual National ZEV Investment Reports required pursuant to Paragraph 2.9 of Appendix C, or the first two Annual California ZEV Investment Reports required pursuant to Paragraph 3.6 of Appendix C, as applicable, and shall be limited to ten (10) percent thereafter unless otherwise agreed to in writing by EPA or CARB, as applicable, in advance of such cost being incurred. As used herein, a service-level agreement cost is a cost for goods or services provided by an entity that is related to or controlled by Settling Defendants, their parents or subsidiaries (i.e., not a third-party vendor).

II. ACCOUNTING PROCEDURES FOR THE ACCOUNTING FOR, SUBSTANTIATION, AND REPORTING OF CREDITABLE COSTS

In accordance with Paragraphs 2.2 and 3.2 of Appendix C of the Consent Decree, Settling Defendants shall, within thirty (30) days of the Effective Date, concurrently submit to EPA and CARB for review and approval a proposed separate Creditable Cost Guidance to assist in the determination of Creditable Costs under the National and California ZEV Investment Plans, respectively. The Creditable Cost Guidances shall provide the accounting procedures for the accounting, substantiation, and reporting of Creditable Costs under the respective ZEV Investment Plans. The Creditable Cost Guidances shall specify how Settling Defendants will segregate, describe, report, and substantiate costs in a manner that will allow for an independent certified public accountant firm ("Third-Party Reviewer") retained by the Settling Defendants to attest that costs claimed by Settling Defendant as Creditable Costs satisfy all requirements set forth in the Consent Decree, Appendix C, and any approved Creditable Cost Guidances.

In the Creditable Cost Guidances, Settling Defendants shall (a) specify any and all unique accounting cost centers and accounts to record and report Creditable Costs, and (b) identify the

level and type of documentation that are appropriate to substantiate the incurrence of any cost and to demonstrate that such cost meets the standards articulated in Appendix C (and this Appendix C-1) for qualification of costs as Creditable Costs. The level of detail and support required shall be sufficient to meet the requirements of a Compliance Attestation performed in accordance with the Statement on Standards for Attestation Engagements (“Attestation Standards” or “AT”), as issued by the American Institute of Certified Public Accountants. (See AT Sections 101.201 and 601.) In order to satisfy the objectives set forth in Section I above, the procedures performed by the Third-Party Reviewer retained by Settling Defendants shall be agreed upon by the Settling Defendants, EPA, and CARB prior to the Compliance Attestation engagement and shall also be sufficient to meet the requirements of the Attestation Standards. Notwithstanding the preceding, nothing shall preclude the Third-Party Reviewer charged with providing the attestation described in Section III below from utilizing additional records or information to support the attestation.

III. ATTESTATION REQUIREMENTS

In connection with Settling Defendants’ reporting obligations under the Consent Decree, Settling Defendants will retain a Third-Party Reviewer to perform a Compliance Attestation. The Compliance Attestation shall be performed in compliance with the Statements on Standards for Attestation Engagements, as issued by the American Institute of Certified Public Accountants.

The Attestation Report shall be submitted to EPA and CARB in connection with Settling Defendants’ Annual National and California ZEV Investment Reports. The Attestation Report shall be in a format similar to the following illustration:

Third-Party Reviewer’s Attestation Report

[Appropriate Addressee]

We have examined Settling Defendants’ management’s assertion that *[identify the assertion, which includes the subject matter and the criteria; for example, the accompanying schedule of ZEV Investments and Operations of Settling Defendants for the year ended December 31, 20XX, presents the Creditable Costs of Settling Defendants for the year ended December 31, 20XX, based on criteria set forth in Appendix C and any approved Creditable Cost Guidance]*. Settling Defendants’ management is responsible for its assertion. Our responsibility is to express an opinion based on our examination.

Our examination was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether *[identify the subject matter]* is in conformity with the criteria referenced above.

An examination includes performing procedures to obtain evidence about whether *[identify the subject matter]* is in conformity with the criteria referenced above. The nature, timing, and extent of the procedures selected depend on our professional judgment, including an assessment of the risks of material misstatement, whether due to fraud or error, and involve examining evidence about *[identify the subject matter]*. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.

[Include a description of significant inherent limitations, if any, associated with the measurement or evaluation of the subject matter against the criteria.]

[Additional paragraph(s) may be added to emphasize certain matters relating to the attestation engagement or the subject matter.]

In our opinion, the schedule referred to above presents, fairly, in all material respects, an identification of costs that meet the requirements for Creditable Costs as that term is defined by Appendix C to the Consent Decree and the applicable Creditable Cost Guidance *for the year ended December 31, 20XX*.

[Practitioner's signature]

[Practitioner's city and state]

[Date of practitioner's report]

**APPENDIX D
FORM OF ENVIRONMENTAL
MITIGATION TRUST AGREEMENT**

APPENDIX D

FORM OF ENVIRONMENTAL MITIGATION TRUST AGREEMENT

The Settling Defendants and the Trustee hereby enter into this Environmental Mitigation Trust Agreement (“Trust Agreement”) and establish the environmental mitigation trust herein described (“Mitigation Trust” or “Trust”). The Settling Defendants and the Trustee acknowledge that the purpose of the Mitigation Trust is to fulfill the Settling Defendants’ environmental mitigation obligations under the Consent Decree. All payments to and expenditures from the Mitigation Trust shall be for the sole purpose of fulfilling the Settling Defendants’ environmental mitigation obligations under the Consent Decree. The Mitigation Trust shall be funded with Mitigation Trust Payments according to the terms of the Consent Decree.

PURPOSE AND RECITALS

Whereas, the Settling Defendants are required to establish this Mitigation Trust and to fund it with funds to be used for environmental mitigation projects that reduce emissions of nitrogen oxides (“NOx”) where the 2.0 Liter Subject Vehicles were, are or will be operated (“Eligible Mitigation Actions”), and to pay for Trust Administration Costs as set forth in this Agreement;

Whereas, the funding for the Eligible Mitigation Actions provided for herein is intended to fully mitigate the total, lifetime excess NOx emissions from the 2.0 Liter Subject Vehicles where the 2.0 Liter Subject Vehicles were, are or will be operated;

Whereas, the Settling Defendants hereby establish this Mitigation Trust to provide funds for Eligible Mitigation Actions and Trust Administration Costs;

Whereas, the Trustee has been selected to be the trustee under this Trust Agreement in accordance with the requirements set forth in the Consent Decree; and

Whereas, the Trustee is willing to act as trustee;

Now, therefore, the Settling Defendants and the Trustee agree as follows:

I. DEFINITIONS

1.0 Unless otherwise defined in this Agreement, all capitalized terms used herein shall have the meaning set forth in the Consent Decree.

1.1 “Beneficiary” shall mean each governmental entity determined to be a Beneficiary pursuant to Section IV (Mitigation Trust Beneficiaries).

1.2 “Court” shall mean the United States District Court for the Northern District of California.

1.3 “DERA” shall mean the Diesel Emission Reduction Act, Title VII, Subtitle G, of the Energy Policy Act of 2005 (codified at 42 U.S.C. § 16133).

1.4 “Eligible Mitigation Action” shall mean any of the actions listed in Appendix D-2 to this Trust Agreement.

1.5 “Eligible Mitigation Action Expenditure” shall mean those expenditures specified in Appendix D-2 to this Trust Agreement, and shall not include Trust Administration Costs.

1.6 “Federal agency” shall mean any agency of the United States government.

1.7 “Indian land” shall mean the lands of any Indian tribe or within Indian country.

1.8 “Trust Administration Costs” shall mean all expenditures of Trust Assets by the Trustee, other than for Eligible Mitigation Action Expenditures.

II. MITIGATION TRUST

2.0 Establishment of the Trust

2.0.1 Irrevocable Establishment. The Settling Defendants hereby and irrevocably establish this Mitigation Trust on behalf of the Beneficiaries. The Trustee hereby accepts and agrees to hold the assets owned by the Mitigation Trust (“Trust Assets”) for the benefit of the Beneficiaries and for the purposes described herein and in the Consent Decree.

2.0.2 Trustee. In accordance with Paragraph 3.0 below, on the Trust Effective Date, the Trustee, not individually but solely in the representative capacity of trustee, shall be appointed as the Trustee in accordance with the Consent Decree to administer the Mitigation Trust in accordance with this Trust Agreement and the Consent Decree.

2.0.3 Trust Purpose. It shall be the purpose of the Mitigation Trust to fund Eligible Mitigation Actions to be proposed and administered by the Beneficiaries subject to the requirements of the Consent Decree and this Trust Agreement. The goal of each Eligible Mitigation Action shall be to achieve reductions of NOx emissions in the United States.

2.0.4 Creation and Use of Trust Account. Within 15 Days following the Trust Effective Date, the Trustee shall establish a trust account (“Trust Account”), and file with the Court a designation and identification of Trust Account. The purpose of the Trust Account shall be to receive deposits from the Settling Defendants, to receive income gains from any investment of Trust Assets, and to make disbursements to fund Eligible Mitigation Actions and pay Trust Administration Costs, all in accordance with the Consent Decree and this Trust Agreement. Unless otherwise agreed by the parties to the Consent Decree (“Consent Decree Parties”), the Trust Account shall be the only account that may be used for these purposes.

2.0.4.1 Trust Account Divisions. The Trust Account may be divided into such number of discrete trust subaccounts dedicated for specific purposes as may be deemed necessary in the discretion of the Trustee to comply with the terms of, and to implement, the Consent Decree and this Trust Agreement.

2.1 Funding of the Trust: The Settling Defendants shall fund the Mitigation Trust as required by the Consent Decree.

2.1.1 Funding and Use of Tribal Allocation Subaccount. As soon as practicable after the Trust Effective Date, the Trustee shall fund the Tribal Allocation Subaccount by transferring into it from the Trust Account the funds allocated to it as set forth in Appendix D-1. These funds may only be used to fund Eligible Mitigation Actions and Eligible Mitigation Action Expenditures in the United States, and for technical assistance as discussed below. After lodging the Consent Decree, the United States shall consult with interested federally-recognized Indian tribes for a 60-Day period, in order to establish a mechanism for allocating the funds in the Tribal Allocation Subaccount among those tribes that are deemed Beneficiaries hereunder, including allowing up to 5% of those funds to be directed towards technical assistance to enable tribes to prepare funding requests for Eligible Mitigation Actions. The United States may file a motion with the Court seeking approval of the allocation mechanism resulting from the consultation process (“Consultation Motion”) by the later of: (i) 6 months after the date the Consent Decree is lodged; or (ii) 30 Days after the Trust Effective Date.

2.1.1.1 If no Consultation Motion is timely filed, the Trustee shall post on its public-facing website, within 30 Days of the final deadline for filing a Consultation Motion pursuant to the preceding subparagraph, a “Notice of Termination of Tribal Consultation Period,” and implement the Tribal Allocation Instructions set forth at subparagraph 5.0.5.

2.1.1.2 If a Consultation Motion is timely filed, the Trustee shall comply with the Court’s order when issued.

2.1.1.3 In any case, prior to receiving any funds, each Indian tribe must establish Beneficiary status hereunder by filing with the Court, at the time it submits its first funding request, certifications consistent with subparagraph 4.2. Any funding request submitted by any Indian tribe must comply with the requirements of subparagraphs 5.2.2 through 5.2.13 and 5.3, and each allocation given to any Indian tribe that is determined to be a Beneficiary shall be subject to subparagraph 5.4.

2.1.2 Funding of the Trust Administration Cost Subaccount. As soon as practicable after the Trust Effective Date, the Trustee shall fund a subaccount to pay for Trust Administration Costs (“Trust Administration Cost Subaccount”) by transferring into it from the Trust Account the funds allocated to that subaccount in accordance with

Appendix D-1. The Trustee may further subdivide the Trust Administration Cost Subaccount into such number of additional subaccounts as may be deemed necessary in the discretion of the Trustee to comply with the terms of, and implement, the Consent Decree and this Trust Agreement. No additional Trust Assets may be directed to the Trust Administration Cost Subaccount, or to the payment of Trust Administration Costs, absent further order of the Court.

2.1.2.1 Allocation of Trust Administration Costs. The funds in the Trust Administration Cost Subaccount shall be internally allocated in accordance with each Beneficiary's allocation rate. The Trustee shall debit those Trust Administration Costs associated with a particular Eligible Mitigation Action request against the Trust Administration Cost Subaccount allocation of the Beneficiary that requested the funds associated with that Eligible Mitigation Action. The Trustee shall debit all other Trust Administration Costs ("Shared Administration Costs") among all Beneficiaries, weighted in accordance with each Beneficiary's Trust Administration Cost Subaccount allocation.

2.1.2.2 Tribal Administration Cost Subaccount. As soon as practicable after the Trust Effective Date, the Trustee shall establish a Tribal Administration Cost Subaccount which shall be funded in accordance with the specific allocation in accordance with Appendix D-1. The funds in this subaccount shall be used exclusively to pay for the Trust's expenses relating to administering the Tribal Allocation Subaccount; provided, however, that the Trustee may also draw upon this account for a weighted portion of Shared Administration Costs in accordance with the preceding subparagraph. The funds in this subaccount shall be internally allocated and debited in the same fashion as described in subparagraph 2.1.2.1. Additionally, the consultation process required by Paragraph 2.1.1 may direct that a portion of the funds in this subaccount be used to fund a separate entity established in order to determine which Eligible Mitigation Actions to submit to the Trustee. Although the Tribal Administration Cost Subaccount shall be administered hereunder as a subaccount of the Trust Administration Cost Subaccount, it shall be funded separately in accordance with Appendix D-1. No additional Trust Assets may be directed to the Tribal Administration Cost Subaccount, or to the payment of Tribal Administration Costs, absent further order of the Court.

2.2 Trust Limitations

2.2.1 Beginning on the Trust Effective Date and for each twelve-month period thereafter, total Trust Administration Costs shall not exceed [##]% of the average value of Trust Assets during that period, absent further order of the Court.

2.2.2 No Consent Decree Party or Beneficiary, nor any of their components, agencies, officers, directors, agents, employees, affiliates, successors, or assigns, shall be

deemed to be an owner, operator, trustee, partner, agent, shareholder, officer, or director of the Mitigation Trust.

2.2.3 All Trust Assets shall be used solely for the purposes provided in the Consent Decree and this Trust Agreement.

2.2.4 This Mitigation Trust is irrevocable. The Settling Defendants (i) shall not retain any ownership or residual interest whatsoever with respect to any Trust Assets, including but not limited to the funds transferred by the Settling Defendants to fund the Trust pursuant to the terms of the Consent Decree, and (ii) shall not have any liabilities or funding obligations with respect to the Trust (to the Trustee, the Beneficiaries or otherwise) other than the funding obligations expressly set forth in the Consent Decree. Nor shall the Settling Defendants have any rights or role with respect to the management or operation of the Trust, or the Trustee's approval of requests for Eligible Mitigation Action funding.

2.2.5 Exculpation. The Mitigation Trust shall have no liability whatsoever to any person or party for any liability of the Settling Defendants; provided, however, that the Mitigation Trust shall be liable to the Beneficiaries for funding of Eligible Mitigation Actions in accordance with the terms of this Trust Agreement and the Consent Decree.

III. TRUSTEE RESPONSIBILITIES

3.0 Appointment: The Trustee, not individually but in his/her representative capacity as Trustee, is hereby appointed to serve as the Trustee to administer the Mitigation Trust in accordance with this Trust Agreement and the Consent Decree. The Trustee hereby accepts such appointment and agrees to serve, commencing on the Trust Effective Date, in such fiduciary capacity to the Mitigation Trust and the Beneficiaries.

3.1 Powers of the Trustee

3.1.1 Except as set forth in this Trust Agreement, the Trustee shall have the power to perform those acts necessary and desirable to accomplish the purposes of the Mitigation Trust, which shall be exercised in a fiduciary capacity and in furtherance of and in a manner consistent with the purposes of this Trust Agreement and the Consent Decree.

3.1.2 Upon the Trust Effective Date, the powers of the Trustee shall include the following:

3.1.2.1 To receive, manage, invest, supervise, and protect the Trust Assets as provided in this Trust Agreement;

3.1.2.2 To establish a public-facing website onto which it will post all materials as required hereunder;

- 3.1.2.3 To establish bylaws or other customary and necessary governance documents to provide for transparent and orderly trust administration, provided that any such bylaws or documents must be filed with the Court when adopted and posted to the Trust's public-facing website;
- 3.1.2.4 To incur, and pay from the Trust Administration Cost Subaccount, any and all customary and commercially reasonable charges, taxes, and expenses upon or connected with the administration of this Mitigation Trust in the discharge of its fiduciary obligations;
- 3.1.2.5 To engage and compensate professionals to assist the Trustee in accordance with this Trust Agreement, including but not limited to environmental, investment, accounting, tax and third-party auditing professionals. Such third-party auditing professionals may be used by the Trustee to audit and/or review expenditures to verify that they comport with the requirements and limitations on use of Trust Funds, as set forth herein. The Trustee may initiate such an audit and/or review on its own initiative or in response to credible reports or suggestions that such review or audit is appropriate;
- 3.1.2.6 To purchase any insurance policies as the Trustee may determine to be prudent to protect the Mitigation Trust, the Trust Assets, and the Trustee from any claims that might be asserted against each;
- 3.1.2.7 To distribute Trust Assets for the purposes contemplated in this Trust Agreement and the Consent Decree, including distributions of funds to Beneficiaries for approved Eligible Mitigation Actions; and
- 3.1.2.8 Subject to applicable requirements of this Trust Agreement, the Consent Decree, and other applicable law, to effect all actions and execute and deliver all contracts, instruments, agreements, or other documents that may be necessary to administer the Mitigation Trust in accordance with this Trust Agreement and the Consent Decree, each in accordance with its fiduciary duties to the governmental entities identified in Appendix D-1, the Indian tribes, and the Beneficiaries.

3.2 Investment of Trust Assets: The Trustee shall invest and reinvest the principal and income of the Trust Assets in those investments that are reasonably calculated to preserve the principal value, taking into account the need for the safety and liquidity of principal as may be required to fund Eligible Mitigation Actions and Trust Administration Costs.

3.2.1 Any investment income that is not reinvested shall be deposited into the Trust Account for distribution among the Beneficiaries or Supplemental Funding Eligible Beneficiaries, weighted in accordance with the allocation in place at the time of such deposit.

3.2.2 In investing, reinvesting, exchanging, selling, and managing Trust Assets, the Trustee must perform its duties solely in the interest of the Beneficiaries and with the care, skill, prudence, and diligence under the circumstances then prevailing which a prudent investor, acting in a like capacity and familiar with such matters, would exercise in the conduct of an enterprise of like character and with like aims; except that the right and power of the Trustee to invest and reinvest the Trust Assets shall be limited to: (i) demand and time deposits, such as certificates of deposit, in banks or other savings institutions whose deposits are federally insured; (ii) U.S. Treasury bills, bonds and notes, including, but not limited to, long-term U.S. Treasury bills, bonds and notes; (iii) repurchase agreements for U.S. Treasury bills, bonds and notes; (iv) AA or AAA corporate bonds (with the rating awarded by at least two of the three major rating agencies (Standard & Poor's, Moody's, or Fitch)); or (v) open-ended mutual funds owning only assets described in subparts (i) through (iv) of this subsection; *provided*, however, that the value of bonds of any single company and its affiliates owned by the Trust directly rather than through a mutual fund shall not exceed \$10 million when purchased, but may be held, despite increase in value, so long as such amount does not exceed \$16 million. Any such investments shall be made consistently with the Uniform Prudent Investor Act.

3.2.3 Nothing in this Section shall be construed as authorizing the Trustee to cause the Mitigation Trust to carry on any business or to divide the gains therefrom. The sole purpose of this Section is to authorize the investment of the Trust Assets or any portion thereof as may be reasonably prudent pending use of the proceeds for the purposes of the Mitigation Trust.

3.3 Accounting: The Trustee shall maintain the books and records relating to the Trust Assets and income and the payment of expenses of and liabilities against the Mitigation Trust. The detail of these books and records and the duration the Trustee shall keep such books and records shall be such as to allow the Trustee to make a full and accurate accounting of all Trust Assets, as well as to comply with applicable provisions of law and standard accounting practices, including Generally Accepted Accounting Principles ("GAAP"). The United States, by and through the EPA, and each Beneficiary, shall have the right upon 14 Days' prior written notice to inspect such books and records, as well as all supporting documentation. Except as otherwise provided herein, the Trustee shall not be required to file any accounting or seek approval of the Court with respect to the administration of the Mitigation Trust, or as a condition for making any payment or distribution out of the Trust Assets.

3.3.1 Semi-Annual Reporting. Within 180 Days of the Trust Effective Date in the first year, and thereafter by January 1 and July 1 of each year, and then at least 30 Days prior to the filing of a motion to terminate pursuant to subparagraph 6.7 hereof (each a "Financial Reporting Date"), the Trustee shall file with the Court and provide each Beneficiary and the Settling Defendants with:

3.3.1.1 A statement: (i) confirming the value of the Trust Assets; (ii) itemizing the investments then held by the Trust (including applicable ratings on such investments); and (iii) including a cumulative and calendar

year accounting of the amount the Trustee has paid out from the Trust Account and all subaccounts to any recipient;

- 3.3.1.2 For each Beneficiary, cumulative and calendar year accounting, as of the Financial Reporting Date, of: (i) such Beneficiary's initial allocation of Trust Assets; (ii) any allocation adjustments pursuant to this Agreement; (iii) line item descriptions of completed disbursements on account of approved Eligible Mitigation Action; and (iv) such Beneficiary's remaining and projected allocation. Such accounting shall also include, for each Beneficiary, a balance statement and projected annual budget of disbursements taking into account those Eligible Mitigation Actions that have been approved as of the Financial Reporting Date;
- 3.3.1.3 For the Trust Administration Cost Subaccount, cumulative and calendar year accounting, as of the Financial Reporting Date, of: (i) line item disbursements of Total Administration Costs; (ii) balance statements; (iii) 3-year projected annual budgets of disbursements on account of Trust Administration Costs; and (iv) line by line accounting of Trust Administration Costs recorded against each Beneficiary's allocation pursuant to subparagraph 2.1.2.1;
- 3.3.1.4 For the Trust Account and all subaccounts, including but not limited to the Trust Administration Cost Subaccount, balance statements and 3-year projected annual budgets that itemize all assets, income, earnings, expenditures, allocations, and disbursements of Trust Assets by Trust Account and by each subaccount;
- 3.3.1.5 Third-party audited financial reports disclosing and certifying the disposition of all Trust Assets from the Trust Effective Date through the calendar quarter immediately preceding the Financial Reporting Date, specifically including reconciliations of prior budget projections to actual performance;
- 3.3.1.6 A description of any previously unreported action taken by the Trust in performance of its duties which, as determined by the Trustee, counsel, accountants, or other professionals retained by the Trustee, affects the Trust in a materially adverse way;
- 3.3.1.7 A brief description of all actions taken in accordance with this Agreement and the Consent Decree during the previous year; and
- 3.3.1.8 On each Financial Reporting Date, the Trustee shall simultaneously publish on the Trust's public-facing website all information required to be provided under subparagraph 3.3.

3.4 Limitation of the Trustee's Authority: The Trustee is not authorized to engage in any trade or business with respect to the Trust Assets or proceeds therefrom.

3.5 Conditions of Trustee's Obligations: The Trustee accepts appointment as the Trustee subject to the following express terms and conditions:

3.5.1 No Bond. Notwithstanding any state law to the contrary, the Trustee, including any successor Trustee, shall be exempt from giving any bond or other security in any jurisdiction.

3.5.2 Limitation of Liability. In no event shall the Trustee be held personally liable for any claims asserted against the Mitigation Trust except for actions or omissions that are determined by a court order to be fraudulent, negligent, or willful misconduct by the Trustee. Except as provided herein, the Trustee may consult with legal counsel, accounting and financial professionals, environmental professionals, and other professionals, and shall not be personally liable for any action taken or omission made by it in accordance with advice given by such professionals, except in the case of a court order determining fraud, negligence, or willful misconduct by the Trustee. In the absence of willful misconduct, negligence, or fraud by the Trustee, as determined by a court, the Trustee shall not be personally liable to persons seeking payment from or asserting actions against the Mitigation Trust. For the avoidance of doubt, this subparagraph does not create for the Trustee or Mitigation Trust any express or implied right to indemnification from any Consent Decree Party for any claims asserted against the Trustee or Mitigation Trust, and no Consent Decree Party shall be liable for any claims asserted against the Trustee or Mitigation Trust.

3.5.3 Reliance on Documentation. The Trustee may rely on, and shall be protected in acting upon, any notice, requisition, request, consent, certificate, order, affidavit, letter, or other paper or document reasonably believed by it to be genuine and to have been signed or sent by the proper person or persons.

3.5.4 Right to Demand Documentation. Notwithstanding anything else in this Agreement, in the administration of the Trust Assets, the Trustee shall have the right, but shall not be required, to demand from the relevant Beneficiary before the disbursement of any cash or in respect of any action whatsoever within the purview of this Mitigation Trust, any showings, certificates, opinions, appraisals, or other information, or action or evidence thereof, in addition to that required by the terms hereof that the Trustee reasonably believes to be necessary or desirable.

3.6 Payment of Trust Administration Costs: Subject to the limits set forth in subparagraph 2.2.1, the Mitigation Trust shall pay from the Trust Administration Cost Subaccount its own reasonable and necessary costs and expenses, and shall reimburse the Trustee for the actual reasonable out-of-pocket fees, costs, and expenses to the extent incurred by the Trustee in connection with the administration of the Trust. The Trustee also shall be entitled to receive reasonable compensation for services rendered on behalf of the Mitigation Trust, in accordance with the projected annual budgets for administration of the Mitigation Trust required

under subparagraph 3.3.1.3 hereof, not to exceed (\$[___]) per hour. Notwithstanding the foregoing, the total amount of allowable Trust Administration Costs shall not exceed the cost cap established under subparagraph 1.8. The Trustee shall include in its semi-annual reporting, and post on its public website, detailed invoices of all Trust Administration Costs (including but not limited to detailed invoices for the Trustee's services rendered on behalf of the Trust) at least 15 Days prior to the payment of any such expense. Such invoices shall remain available on the website until the Termination Date.

3.7 Termination, Resignation, and Removal of the Trustee

3.7.1 Termination of Trustee. The rights, powers, duties, and obligations of the Trustee to the Mitigation Trust and the Beneficiaries will terminate on the Termination Date.

3.7.2 Resignation of Trustee and Successor Trustee. Resignation of the Trustee shall only be effective upon: (i) selection of a successor pursuant to the procedures set forth in the Consent Decree; and (ii) order of the Court. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the appointment of a successor trustee or as otherwise ordered by the Court, the Trustee shall transfer all Trust records to the successor trustee, and shall take all actions necessary to assign, transfer, and pay over to the successor trustee control of all Trust Assets (including the public website maintained by the Trustee). In the event that the Trustee dies or becomes incapacitated, the Court may, upon motion by the United States or any Beneficiary, appoint an interim Trustee until such time as a successor trustee is appointed in accordance with the procedures set forth in the Consent Decree.

IV. MITIGATION TRUST BENEFICIARIES

4.0 Determination of Beneficiary Status: Each governmental entity identified in Appendix D-1 hereto may elect to become a Beneficiary hereunder by filing with the Court a single Certification Form (Appendix D-3), containing each of the certifications required by subparagraphs 4.2.1 through 4.2.9, not later than 60 Days after the Trust Effective Date. Each entity that timely files such certifications shall be a "Certifying Entity." Each entity that fails to timely file such certifications shall be an "Excluded Entity," and shall be permanently enjoined from asserting any rights with respect to Trust Assets or any other matter relating to the implementation of this Trust. The Trustee shall be responsible for ensuring that the form of each certification complies with the requirements hereof prior to deeming any Certifying Entity to be a Beneficiary hereunder. For the avoidance of doubt, the determination of Beneficiary status for each Indian tribe shall be governed by subparagraphs 2.1.1 and 5.0.5.

4.0.1 Notice of Objection. If the United States or the Trustee determines that a certification filed by any Certifying Entity fails to comply with the requirements of this Section, either may file with the Court a notice of objection within 30 Days after a Certifying Entity files its certifications with the Court. Such notice shall explain the basis of objection with specificity. Any such objections shall be resolved according to the procedures set forth in subparagraph 6.2.

4.0.2 Notice of Beneficiary Designation. Not later than 120 Days after the Trust Effective Date, the Trustee shall file with the Court, publish on its public-facing website, and serve on each Consent Decree Party and Certifying Entity lists indicating:

- 4.0.2.1 Which Certifying Entities filed certifications as to which no notice of objection has been filed. Upon the filing of this Notice of Beneficiary Designation, each such Certifying Entity shall be deemed a “Beneficiary” hereunder;
- 4.0.2.2 Which governmental entity identified in Appendix D-1 did not timely file the certifications pursuant to Paragraph 4.0. Each such Certifying Entity shall be deemed an “Excluded Entity” hereunder; and
- 4.0.2.3 Which Certifying Entities timely filed certifications as to which a notice of objection has been filed pursuant to subparagraph 4.0.1, together with an explanation of the status of any such objection. Each such Certifying Entity shall be a “Pending Beneficiary.” Upon final resolution of each objection, the Pending Beneficiary shall either be deemed a Beneficiary or an Excluded Entity hereunder.

4.1 Beneficiary Mitigation Plan: Not later than 30 Days after being deemed a Beneficiary pursuant to subparagraph 4.0.2.1 hereof, each Beneficiary shall submit and make publicly available a “Beneficiary Mitigation Plan” that summarizes how the Beneficiary plans to use the mitigation funds allocated to it under this Trust, addressing: (i) the Beneficiary’s overall goal for the use of the funds; (ii) the categories of Eligible Mitigation Actions the Beneficiary anticipates will be appropriate to achieve the stated goals and the preliminary assessment of the percentages of funds anticipated to be used for each type of Eligible Mitigation Action; (iii) a description of how the Beneficiary will consider the potential beneficial impact of the selected Eligible Mitigation Actions on air quality in areas that bear a disproportionate share of the air pollution burden within its jurisdiction; and (iv) a general description of the expected ranges of emission benefits the Beneficiary estimates would be realized by implementation of the Eligible Mitigation Actions identified in the Beneficiary Mitigation Plan. The Beneficiary Mitigation Plan need only provide the level of detail reasonably ascertainable at the time of submission. This Plan is intended to provide the public with insight into a Beneficiary’s high-level vision for use of the mitigation funds and information about the specific uses for which funding is expected to be requested. Nothing in this provision is intended to make the Beneficiary Mitigation Plan binding on any Beneficiary, nor does it create any rights in any person to claim an entitlement of any kind. Beneficiaries may adjust their goals and specific spending plans at their discretion and, if they do so, shall provide the Trustee with updates to their Beneficiary Mitigation Plan. To the extent a Beneficiary intends to avail itself of the DERA Option described in Appendix D-2, that Beneficiary may use its Final Approved DERA Workplan as its Beneficiary Mitigation Plan as to those Eligible Mitigation Actions funded through the DERA Option. The Beneficiary Mitigation Plan shall explain the process by which the Beneficiary shall seek and consider public input on its Beneficiary Mitigation Plan.

4.2 Required Certifications

4.2.1 Identification of Lead Agency and Submission to Jurisdiction. Each Certification Form must include a designation of lead agency, certified by the Office of the Governor or (if not a state, the analogous chief executive) of the Appendix D-1 entity on whose behalf the Certification Form is submitted, indicating which agency, department, office, or division will have the delegated authority to act on behalf of and legally bind such Appendix D-1 entity. The Certification Form shall also include confirmation by the Certifying Entity that: (i) it has the authority to sign the Certification Form; and (ii) it agrees, without limitation, to be bound by the terms of this Agreement, including the allocations of Trust Assets provided hereunder, and to be subject to the jurisdiction of the Court for all matters concerning the interpretation or performance of, or any disputes arising under, this Trust Agreement. The Certifying Entity's agreement to federal jurisdiction for this purpose shall not be construed as consent to federal court jurisdiction for any other purpose.

4.2.2 Consent to Trustee Authority. Each Certification Form must include an agreement by the Certifying Entity that the Trustee has the authorities specified in this Agreement, including but not limited to the authority: (i) to approve, deny, request modifications, or request further information related to any request for funds hereunder; and (ii) to implement this Agreement in accordance with its terms.

4.2.3 Certification of Legal Authority. Each Certification Form must certify that: (i) the laws of the Certifying Entity do not prohibit it from being a Beneficiary hereunder; (ii) prior to requesting any funds hereunder, the Certifying Entity shall obtain full legal authority to receive and/or direct payments of such funds; and (iii) if the Certifying Entity fails to demonstrate that it has obtained such legal authority within two years of submitting its Certification Form, it shall become an Excluded Entity hereunder and its initial allocation shall be redistributed among the Beneficiaries pursuant to subparagraph 5.0.1.

4.2.4 Certification of Legal Compliance. Each Certification Form must include a certification and agreement that, in connection with all actions related to this Trust, the Certifying Entity has followed and will follow all applicable law and that such Certifying Entity will assume full responsibility for its decisions in that regard.

4.2.5 Certification of Eligible Mitigation Action Accounts. Each Certification Form shall include a certification by the Certifying Entity that all funds received on account of any Eligible Mitigation Action request that are not used for the Eligible Mitigation Action shall be returned to the Trustee for credit to the allocation of such Certifying Entity.

4.2.6 Waiver of Claims for Injunctive Relief under Environmental or Common Laws. Each Certification Form shall include an express waiver by the Certifying Entity, on behalf of itself and all of its agencies, departments, offices, and divisions, in favor of the parties to the Consent Decree (including the Settling Defendants) of all claims for

injunctive relief to redress environmental injury caused by the 2.0 Liter Subject Vehicles, whether based on the environmental or common law within its jurisdiction. Such waiver shall be binding on all agencies, departments, offices, and divisions of such Beneficiary asserting, purporting to assert, or capable of asserting such claims. The waiver need not waive, and the Certifying Entities may expressly reserve, their rights, if any, to seek fines or penalties. California's entry in the Consent Decree shall satisfy its certification obligations under this subparagraph.

4.2.7 Publicly Available Information. Each Certification Form must include a certification by the Certifying Entity that it will maintain and make publicly available all documentation and records: (i) submitted by it in support of each funding request; and (ii) supporting all expenditures of Trust Funds by the Certifying Entity, each until the Termination Date, unless the laws of the Certifying Entity require a longer record retention period. This certification shall include an explanation of the procedures by which the records may be accessed, which procedures shall be designed to support access and limit burden for the general public, and for the Beneficiary Mitigation Plan required under Paragraph 4.1, the procedures by which public input will be solicited and considered. This certification can be made subject to applicable laws governing the publication of confidential business information and personally identifiable information.

4.2.8 Notice of Availability of Mitigation Action Funds. Each Certification Form must certify that, not later than 30 Days after being deemed a Beneficiary pursuant to subparagraph 4.0.2.1 hereof, the Certifying Entity will provide a copy of this Agreement with Attachments to the U.S. Department of the Interior, the U.S. Department of Agriculture, and any other Federal agency that has custody, control or management of land within or contiguous to the territorial boundaries of the Certifying Entity and has by then notified the Certifying Entity of its interest hereunder, explaining that the Certifying Entity may request Eligible Mitigation Action funds for use on lands within that Federal agency's custody, control or management (including but not limited to Clean Air Act Class I and II areas), and setting forth the procedures by which the Certifying Entity will review, consider, and make a written determination upon each such request.

4.2.9 Registration of 2.0 Liter Subject Vehicles. Each Certification Form must state, for the benefit of the parties to the Consent Decree (including the Settling Defendants) and the owners from time-to-time of 2.0 Liter Subject Vehicles, that the Certifying Entity:

- (a) Shall not deny registration to any Subject Vehicle based solely on:
 - i. The presence of a defeat device or AECD covered by the resolution of claims in the Consent Decree; or
 - ii. Emissions resulting from such a defeat device or AECD; or
 - iii. The availability of an Approved Emissions Modification or the Buyback, Lease Termination, and Owner/Lessee Payment Program.

(b) Shall not deny registration to any Subject Vehicle that has received an Approved Emissions Modification based solely on:

- i. The fact that the vehicle received the Approved Emissions Modification; or
- ii. Emissions resulting from the modification (including but not limited to the anticipated emissions described in Appendix B to the Consent Decree); or
- iii. Other emissions-related vehicle characteristics that result from the modification; or
- iv. The availability of an Approved Emissions Modification or the Buyback, Lease Termination, and Owner/Lessee Payment Program.

(c) May identify 2.0 Liter Subject Vehicles as having received, or not received, the Approved Emissions Modification on the basis of VIN-specific information provided to the Certifying Entity by the Settling Defendants.

(d) Notwithstanding the foregoing, a Certifying Entity may deny registration to any Subject Vehicle on the basis that the Subject Vehicle fails to meet EPA's or the Certifying Entity's failure criteria for the onboard diagnostic (OBD) inspection; or on other grounds authorized or required under applicable federal regulations (including an approved State Implementation Plan) or under Section 209 or 177 of the Clean Air Act and not explicitly excluded in subparagraphs 4.2.9(a)-(b).

V. DISTRIBUTION OF MITIGATION TRUST ASSETS

5.0 Initial Allocation: Each governmental entity identified in Appendix D-1 hereto shall have the right under this Trust Agreement, upon becoming a Beneficiary pursuant to Section IV (Mitigation Trust Beneficiaries), to request its share of Eligible Mitigation Action funds in accordance with the allocation rates set forth in Appendix D-1 ("Initial Allocation Rates").

5.0.1 Together with the Notice of Beneficiary Designation required to be filed pursuant to subparagraph 4.0.2, the Trustee shall also file with the Court and serve upon each Consent Decree party, Beneficiary, and Pending Beneficiary, a corresponding recalculation of the Initial Allocation Rates to reallocate each Excluded Entity's share among the Beneficiaries and Pending Beneficiaries, weighted in accordance with the Initial Allocation Rates ("Final Allocation Rates"). If any Pending Beneficiary is deemed an Excluded Entity hereunder, its share shall be reallocated among the Beneficiaries and remaining Pending Beneficiaries, weighted in accordance with the Final Allocation Rates. The Trustee shall file with the Court and serve upon each Consent Decree party, Beneficiary, and Pending Beneficiary a notice of reallocation in the event that the Final Allocation Rates are adjusted in accordance with this Trust Agreement.

5.0.2 Upon being deemed a Beneficiary pursuant to subparagraph 4.0.2.1 hereof, each Beneficiary shall have the right under this Trust Agreement to request Eligible Mitigation Action funds up to the total dollar amount allocated to it. Provided,

however, that no Beneficiary may request payout of more than (i) one-third of its allocation during the first year after the Settling Defendants make the Initial Deposit, or (ii) two-thirds of its allocation during the first two years after the Settling Defendants make the Initial Deposit.

5.0.3 Allocation of Appendix A Mitigation Trust Payments. Any “National Mitigation Trust Payment” made pursuant to Section VI (Recall Rate) of Appendix A (Buyback, Lease Termination, and Vehicle Modification Recall Program) shall be allocated among all Beneficiaries other than California, weighted in accordance with the Final Allocation Rates. Any “California Mitigation Trust Payment” made pursuant to that Section shall be allocated exclusively to California.

5.0.4 Allocation of Appendix B Payments. Any Mitigation Trust Payments made pursuant to Appendix B (Vehicle Recall and Emissions Modification Program) or any Consent Decree provisions related thereto shall be allocated among all Beneficiaries, weighted in accordance with the Final Allocation Rates.

5.0.5 Distribution of Tribal Allocation Subaccount. If no Consultation Motion is timely filed pursuant to subparagraph 2.1.1 hereof, the Trustee shall, within 30 Days after the final deadline for filing a Consultation Motion pursuant to that subparagraph, promptly post on the Trust’s public-facing website:

5.0.5.1 Notice: (i) that each Indian tribe may seek to become a Beneficiary hereunder by filing with the Court, at the time it submits its first funding request, certifications consistent with subparagraph 4.2; and (ii) of the date by which the Trustee will determine and post notice of the Beneficiary status of each certifying tribe, which determination shall be made in a manner consistent with the procedures set forth in Paragraph 4.0.2.

5.0.5.2 Notice that, commencing on the first September 1 after the Trust Effective Date and for five years thereafter (for a total of six September 1 funding request deadlines), each Indian tribe may submit to the Trustee funding requests that meet the requirements of subparagraphs 5.2.2 through 5.2.13. For funding requests that seek DERA funds, the DERA notice of intent to participate may be submitted for purposes of the September 1 deadline, with the full DERA proposal to be submitted to the Trustee when it is submitted to EPA.

5.0.5.2.1 Regardless of the total amount of funding requests received on each of these six annual submission deadlines: (i) no more than one sixth of total remaining assets in the Tribal Allocation Subaccount may be committed during the first funding cycle; (ii) no more than one fifth of total remaining assets in the Tribal Allocation Subaccount may be committed during the second funding cycle; (iii) no more than one quarter of total remaining assets in the Tribal Allocation Subaccount may be committed during the third funding cycle; (iv) no more than

one third of total remaining assets in the Tribal Allocation Subaccount may be committed during the fourth funding cycle; (v) no more than one half of total remaining assets in the Tribal Allocation Subaccount may be committed during the fifth funding cycle; and (vi) the remaining funds in the Tribal Allocation Subaccount may be committed during the sixth funding cycle. In the event uncommitted funds remain in the Tribal Allocation Subaccount or the Tribal Administration Subaccount after all funding requests have been approved or rejected during the sixth funding cycle, such funds shall be returned to the Trust Account and allocated among the non-tribal Beneficiaries, weighted in accordance with their allocation.

5.0.5.2.2 In the event that the total amount of the funding requests received on any submission deadline is less than the total amount of funds available to be committed during the corresponding funding cycle, the Trustee shall make no adjustments to the funding requests before approving approvable funding requests pursuant to subparagraph 5.2.15.

5.0.5.2.3 In the event that the total amount of the funding requests received on any submission deadline is more than the amount of funds available to be committed during the corresponding funding cycle, the Trustee shall not approve any funding requests pursuant to subparagraph 5.2.15, but rather shall: (i) allocate to each tribe that has been deemed a Beneficiary hereunder and has submitted a funding request during the funding cycle a share of the funds available during that funding cycle, weighted in accordance with the total population living within each tribe's tribal area according to the American Indian and Alaska Native areas of the 2010 Census (including reservations, off-reservation trust lands, and statistical areas); and (ii) publish on its public-facing website the tribal allocation and a notice that the deadline for that funding cycle shall be pushed forward by one year. In this event: (i) the one year delay of any particular funding cycle shall not impact the deadline for subsequent funding cycles; and (ii) such tribal allocation shall only apply to the over-subscribed funding cycle. To the extent a tribe has submitted a DERA notice of intent to participate, such notice shall be used to calculate the total amount of funds requested under this subparagraph.

5.0.5.3 Nothing herein precludes any Beneficiary from using any share of its allocation for Eligible Mitigation Projects on Indian land.

5.1 Eligible Mitigation Actions and Expenditures: The Trustee may only disburse funds for Eligible Mitigation Actions, and for the Eligible Mitigation Action Expenditures specified therein.

5.2 Funding Requests: Beneficiaries may submit requests for Eligible Mitigation Action funding at any time. Each request for Eligible Mitigation Action funding must be submitted to the Trustee in electronic and hard-copy format, and include:

5.2.1 An explanation of how the funding request fits into the Beneficiary's Mitigation Plan;

5.2.2 A detailed description of the proposed Eligible Mitigation Action, including its community and air quality benefits;

5.2.3 An estimate of the NOx reductions anticipated as a result of the proposed Eligible Mitigation Action;

5.2.4 A project management plan for the proposed Eligible Mitigation Action, including a detailed budget and an implementation and expenditure timeline;

5.2.5 A certification that all vendors were or will be selected in accordance with applicable state public contracting laws;

5.2.6 For each proposed expenditure exceeding \$25,000, detailed cost estimates from selected or potential vendors;

5.2.7 A detailed description of how the Beneficiary will oversee the proposed Eligible Mitigation Action, including but not limited to:

5.2.7.1 Identification of the specific governmental entity responsible for reviewing and auditing expenditures of Eligible Mitigation Action funds to ensure compliance with applicable law; and

5.2.7.2 A commitment by the Beneficiary to maintain and make publicly available all documentation submitted in support of the funding request and all records supporting all expenditures of Eligible Mitigation Action funds, subject to applicable laws governing the publication of confidential business information and personally identifiable information, together with an explanation of the procedures by which the Beneficiary shall make such documentation publicly available;

5.2.8 A description of any cost share requirement to be placed upon the owner of each NOx source proposed to be mitigated;

5.2.9 A description of how the Beneficiary complied with subparagraph 4.2.8;

5.2.10 A description of how the Eligible Mitigation Action mitigates the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions; and

5.2.11 A detailed plan for reporting on Eligible Mitigation Action implementation.

5.2.12 DERA Option. To the extent a Beneficiary intends to avail itself of the DERA Option described in Appendix D-2, that Beneficiary may use its DERA proposal as its funding request for those Eligible Mitigation Actions funded through the DERA Option.

5.2.13 Joint Application. Two or more Beneficiaries may submit a joint request for Eligible Mitigation Action funds. Joint applicants shall specify the amount of requested funding that shall be debited against each requesting Beneficiary's allocation.

5.2.14 Publication of Funding Requests. The Trustee shall post each funding request on the Trust's public-facing website upon receipt.

5.2.15 Approval of Funding Requests. The Trustee shall approve any funding request that meets the requirements of this Agreement and its Attachments, and furthers the purposes of this Trust. Within 60 Days after receipt of each Eligible Mitigation Action funding request, the Trustee shall transmit to the requesting Beneficiary and post on the Trust's public-facing website a written determination either: (i) approving the request; (ii) denying the request; (iii) requesting modifications to the request; or (iv) requesting further information. A Beneficiary may use such written determination as proof of funding for any DERA project application that requires a non-federal cost share. The Trustee shall respond to any modified or supplemental submission within 30 Days of receipt. Each written determination approving or denying an Eligible Mitigation Action funding request shall include an explanation of the reasons underlying the determination, including whether the proposed Eligible Mitigation Action meets the requirements set forth in Appendix D-2 and furthers the purposes of this Trust. The Trustee's decision to approve, deny, request modifications, or request further information related to a request shall be reviewable, upon petition of the United States or the submitting Beneficiary, by the Court.

5.2.15.1 Disbursement of Funds. The Trustee shall begin disbursing funds within 15 Days of approval of an Eligible Mitigation Action funding request according to the written instructions and schedule provided by the Beneficiary.

5.2.16 Unused Eligible Mitigation Action Funds. Upon the termination or completion of any Eligible Mitigation Action, any unused Eligible Mitigation Action funds shall be returned to the Trust and added back to the Beneficiary's allocation.

5.3 Beneficiary Reporting Obligations: For each Eligible Mitigation Action, no later than six months after receiving its first disbursement of Trust Assets, and thereafter no later than January 1 and July 1 of each year, each Beneficiary shall serve upon the Trustee, a semiannual report describing the progress implementing each Eligible Mitigation Action during the six-month period leading up to the reporting date (including a summary of all costs expended

on the Eligible Mitigation Action through the reporting date). Such reports shall include a complete description of the status (including actual or projected termination date), development, implementation, and any modification of each approved Eligible Mitigation Action. Beneficiaries may group multiple Eligible Mitigation Actions and multiple sub-beneficiaries into a single report. These reports shall be signed by an official with the authority to submit the report for the Beneficiary and must contain an attestation that the information is true and correct and that the submission is made under penalty of perjury. To the extent a Beneficiary avails itself of the DERA Option described in Appendix D-2, that Beneficiary may submit its DERA Quarterly Programmatic Reports in satisfaction of its obligations under this subparagraph as to those Eligible Mitigation Actions funded through the DERA Option. The Trustee shall post each semiannual report on the Trust's public-facing website upon receipt.

5.4 Supplemental Funding for Eligible Beneficiaries and Final Disposition of Trust Assets

5.4.1 Estimate of Remainder Balance. On the tenth anniversary of the Trust Effective Date, the Trustee shall file with the Court, deliver to the United States, by and through the EPA, and to each Beneficiary, and publish on its public website, an accounting of all Trust Assets that have not by that date been expended on or obligated to approved Eligible Mitigation Actions or prior Trust Administration Costs, together with an estimate of funding reasonably needed to cover the remaining Trust Administration Costs. The difference between these two amounts shall be referred to as the "Remainder Balance."

5.4.2 Application for Supplemental Funding Eligible Beneficiary Status. On the tenth anniversary of the Trust Effective Date, each Beneficiary may seek to supplement its remaining allocation by filing with the Court and delivering to the Trustee a written report demonstrating that it has by that date obligated at least eighty percent (80%) of the funds allocated to it pursuant to the Final Allocation Rates calculated pursuant to subparagraph 5.0.1 (as determined with specific reference to the reports submitted pursuant to subparagraph 5.3).

5.4.3 Publication of Remainder Balance and Supplemental Funding Eligible Beneficiary Status. Within 90 Days after the tenth anniversary of the Trust Effective Date, the Trustee shall file with the Court, notify the United States, by and through the EPA, and each Beneficiary, and publish on its website, a report indicating: (i) the Remainder Balance; and (ii) which of the Beneficiaries has demonstrated that it had in fact expended at least 80% of the funds allocated to it pursuant to the Final Allocation Rates calculated pursuant to subparagraph 5.0.1, each of which shall be deemed a "Supplemental Funding Eligible Beneficiary".

5.4.4 Distribution of Remainder Balance to Supplemental Funding Eligible Beneficiaries. On the later of (i) 180 Days after the tenth anniversary of the Trust Effective Date, or (ii) the resolution of any disputes arising from the Trustee's accountings or determinations pursuant to subparagraphs 5.4.1 or 5.4.3, the Remainder

Balance shall be divided among the Supplemental Funding Eligible Beneficiaries in accordance with their weighted share of the Final Allocation Rates.

5.4.5 Final Disposition of Trust Assets. Not later than the fifteenth anniversary of the Trust Effective Date, any unused funds held by any Beneficiary shall be returned to the Trust. After the fifteenth anniversary of the Trust Effective Date, any Trust Assets held in the Trust Account or any subaccount (including but not limited to the Trust Administration Cost Subaccount, Tribal Allocation Subaccount, and the Tribal Administration Cost Subaccount) that are not needed for final Trust Administration Costs shall be deemed to have been donated by the Trust to fund Eligible Mitigation Actions administered by Federal agencies that have custody, control or management of land in the United States that is impacted by excess NOx emissions (including but not limited to Clean Air Act Class I and II areas) and that have the legal authority to accept such funds, in accordance with instructions to be provided by the United States. If no such agencies exist, then such funds shall be applied as otherwise directed by the Court on motion by one or more of the remaining Beneficiaries, with notice to the United States, the Settling Defendants, and the other remaining Beneficiaries.

VI. MISCELLANEOUS PROVISIONS

6.0 Correspondence with Trust: [Insert instructions for transmitting certifications, funding requests, and other correspondence to Trustee]

6.1 **Jurisdiction:** The U.S. District Court for the Northern District of California shall be the sole and exclusive forum for the purposes of enforcing this Mitigation Trust and resolving disputes hereunder, including the obligations of the Trustee to perform its obligations hereunder, and each of the Consent Decree Parties, the Mitigation Trust, the Trustee, and each Beneficiary, expressly consents to such jurisdiction.

6.2 **Dispute Resolution:** Unless otherwise expressly provided for herein, the dispute resolution procedures of this Paragraph shall be the exclusive mechanism to resolve any dispute between or among the entities listed in Appendix D-1 hereto, the Consent Decree Parties, and the Trustee arising under or with respect to this Agreement.

6.2.1 Informal Dispute Resolution. Any dispute subject to Dispute Resolution under this Agreement shall first be the subject of informal negotiations. The dispute shall be considered to have arisen when the disputing party sends to the counterparty a written Notice of Dispute. Such Notice of Dispute shall state clearly the matter in dispute. The period of informal negotiations shall not exceed 30 Days from the date the dispute arises, unless that period is modified by written agreement. If the disputing parties cannot resolve the dispute by informal negotiations, then the disputing party may invoke formal dispute resolution procedures as set forth below.

6.2.2 Formal Dispute Resolution. The disputing party shall invoke formal dispute resolution procedures, within the time period provided in the preceding subparagraph, by serving on the counterparty a written Statement of Position regarding

the matter in dispute. The Statement of Position shall include, but need not be limited to, any factual data, analysis, or opinion supporting the disputing party's position and any supporting documentation and legal authorities relied upon by the disputing party. The counterparty shall serve its Statement of Position within 30 Days of receipt of the disputing party's Statement of Position, which shall also include, but need not be limited to, any factual data, analysis, or opinion supporting the counterparty's position and any supporting documentation and legal authorities relied upon by the counterparty. If the disputing parties are unable to consensually resolve the dispute within 30 Days after the counterparty serves its Statement of Position on the disputing party, the disputing party may file with the Court a motion for judicial review of the dispute in accordance with the following subparagraph.

6.2.3 Judicial Review. The disputing party may seek judicial review of the dispute by filing with the Court and serving on the counterparty and the United States, a motion requesting judicial resolution of the dispute. The motion must be filed within 45 Days of receipt of the counterparty's Statement of Position pursuant to the preceding subparagraph. The motion shall contain a written statement of disputing party's position on the matter in dispute, including any supporting factual data, analysis, opinion, documentation, and legal authorities, and shall set forth the relief requested and any schedule within which the dispute must be resolved for orderly administration of the Trust. The counterparty shall respond to the motion within the time period allowed by the Local Rules of the Court, and the disputing party may file a reply memorandum, to the extent permitted by the Local Rules.

6.3 Choice of Law: The validity, interpretation, and performance of this Mitigation Trust shall be governed by the laws of the State of [**California**] [**Delaware**] and the United States, without giving effect to the rules governing the conflicts of law that would require the application of the law of another jurisdiction. This Trust Agreement shall not be subject to any provisions of the Uniform Trust Code as adopted by any State, now or in the future. This Trust Agreement shall be interpreted in a manner that is consistent with the Consent Decree, provided, however, that in the event of a conflict between the Consent Decree and this Trust Agreement, this Trust Agreement shall control.

6.4 Modification: Material modifications to the Mitigation Trust or Appendix D-2 (Eligible Mitigation Actions) may be made only with the written consent of the United States and upon order of the Court, and only to the extent that such modification does not change or inhibit the purpose of this Mitigation Trust. Minor modifications or clarifying amendments to the Mitigation Trust or Appendix D-2 (Eligible Mitigation Actions) may be made upon written agreement between the United States and the Trustee, as necessary to enable the Trustee to effectuate the provisions of this Mitigation Trust, and shall be filed with the Court. To the extent the consent of the Settling Defendants is required to effectuate the modification or amendment, such consent shall not be unreasonably withheld. Notwithstanding the foregoing sentence, without the express written consent of the Settling Defendants, no modification shall: (i) require the Settling Defendants to make any payments to the Trust other than the Mitigation Trust Payments required by the Consent Decree; or (ii) impose any greater obligation on Settling Defendants than those set forth in the Trust Agreement that is being modified. The Trustee shall

provide to the Beneficiaries not less than 30 Days' notice of any proposed modification to the Mitigation Trust, whether material or minor, before such modification shall become effective.

6.5 Severability: If any provision of this Agreement or application thereof to any person or circumstance shall be finally determined by the Court to be invalid or unenforceable to any extent, the remainder of this Agreement, or the application of such provision to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected thereby, and such provision of this Agreement shall be valid and enforced to the fullest extent permitted by law.

6.6 Taxes: If the Trustee determines, upon the advice of qualified tax professionals, that this Trust is a qualified settlement fund ("QSF") pursuant to 26 C.F.R. § 1.468B-1, then the Trustee shall be the "administrator," within the meaning of Treasury Regulation Section 1.468B-2(k)(3), of this Trust. Subject to definitive guidance from the U.S. Internal Revenue Service or a judicial decision to the contrary, the Trustee shall file tax returns and pay applicable taxes with respect to the Trust in a manner consistent with the provisions of the QSF regulations. All such taxes shall be paid from the Trust Administration Cost Account.

6.7 Termination: After all funds have been expended pursuant to subparagraph 5.4.5, and final reports have been delivered pursuant to subparagraph 3.3 and 3.3.1, the Trustee may file a motion with the Court requesting an order terminating this Trust. The United States and the Beneficiaries shall be given not less than 60 Days to oppose such motion. This Trust shall terminate upon approval by the Court of the Trustee's motion to terminate (the "Termination Date").

[Add Signatures for Settling Defendants and the Trustee]

APPENDIX D-1
Initial Allocation

APPENDIX D-1 - INITIAL ALLOCATION

INITIAL SUBACCOUNTS	INITIAL ALLOCATIONS (\$)	INITIAL ALLOCATIONS (%)
Puerto Rico	\$ 7,500,000.00	0.28%
North Dakota	\$ 7,500,000.00	0.28%
Hawaii	\$ 7,500,000.00	0.28%
South Dakota	\$ 7,500,000.00	0.28%
Alaska	\$ 7,500,000.00	0.28%
Wyoming	\$ 7,500,000.00	0.28%
District of Columbia	\$ 7,500,000.00	0.28%
Delaware	\$ 9,051,682.97	0.34%
Mississippi	\$ 9,249,413.91	0.34%
West Virginia	\$ 11,506,842.13	0.43%
Nebraska	\$ 11,528,812.23	0.43%
Montana	\$ 11,600,215.07	0.43%
Rhose Island	\$ 13,495,136.57	0.50%
Arkansas	\$ 13,951,016.23	0.52%
Kansas	\$ 14,791,372.72	0.55%
Idaho	\$ 16,246,892.13	0.60%
New Mexico	\$ 16,900,502.73	0.63%
Vermont	\$ 17,801,277.01	0.66%
Louisiana	\$ 18,009,993.00	0.67%
Kentucky	\$ 19,048,080.43	0.71%
Oklahoma	\$ 19,086,528.11	0.71%
Iowa	\$ 20,179,540.80	0.75%
Maine	\$ 20,256,436.17	0.75%
Nevada	\$ 22,255,715.66	0.82%
Alabama	\$ 24,084,726.84	0.89%
New Hampshire	\$ 29,544,297.76	1.09%
South Carolina	\$ 31,636,950.19	1.17%
Utah	\$ 32,356,471.11	1.20%
Indiana	\$ 38,920,039.77	1.44%
Missouri	\$ 39,084,815.55	1.45%
Tennessee	\$ 42,407,793.83	1.57%
Minnesota	\$ 43,638,119.67	1.62%
Connecticut	\$ 51,635,237.63	1.91%
Arizona	\$ 53,013,861.68	1.96%
Georgia	\$ 58,105,433.35	2.15%
Michigan	\$ 60,329,906.41	2.23%
Colorado	\$ 61,307,576.05	2.27%
Wisconsin	\$ 63,554,019.22	2.35%
New Jersey	\$ 65,328,105.14	2.42%
Oregon	\$ 68,239,143.96	2.53%
Massachusetts	\$ 69,074,007.92	2.56%
Maryland	\$ 71,045,824.78	2.63%
Ohio	\$ 71,419,316.56	2.65%
North Carolina	\$ 87,177,373.87	3.23%
Virginia	\$ 87,589,313.32	3.24%
Illinois	\$ 97,701,053.83	3.62%
Washington	\$ 103,957,041.03	3.85%
Pennsylvania	\$ 110,740,310.73	4.10%
New York	\$ 117,402,744.86	4.35%
Florida	\$ 152,379,150.91	5.64%
Texas	\$ 191,941,816.23	7.11%
California	\$ 381,280,175.09	14.12%
Tribal Allocation Subaccount	\$ 49,652,857.71	1.84%
Trust Administration Cost Subaccount	\$ 27,000,000.00	1.00%
Tribal Administration Cost Subaccount	\$ 993,057.15	0.04%
	\$ 2,700,000,000.00	100.00%

APPENDIX D-2
Eligible Mitigation Actions and Mitigation Action Expenditures

APPENDIX D-2

ELIGIBLE MITIGATION ACTIONS AND MITIGATION ACTION EXPENDITURES

1. Class 8 Local Freight Trucks and Port Drayage Trucks (Eligible Large Trucks)

- a. Eligible Large Trucks include 1992-2006 model year Class 8 Local Freight or Drayage. For Beneficiaries that have State regulations that already require upgrades to 1992-2006 model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Large Trucks shall also include 2007-2012 model year Class 8 Local Freight or Drayage.
- b. Eligible Large Trucks must be Scrapped.
- c. Eligible Large Trucks may be Repowered with any new diesel or Alternate Fueled engine or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the model year in which the Eligible Large Trucks Mitigation Action occurs.
- d. For Non-Government Owned Eligible Class 8 Local Freight Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. 25% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.
 3. 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Non-Government Owned Eligible Drayage Trucks, Beneficiaries may only draw funds from the Trust in the amount of:
 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. 50% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.

3. 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. 75% of the cost of a new all-electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- f. For Government Owned Eligible Class 8 Large Trucks, Beneficiaries may draw funds from the Trust in the amount of:
1. 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. 100% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.
 3. 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

2. Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Eligible Buses)

- a. Eligible Buses include 2006 model year or older class 4-8 school buses, shuttle buses, or transit buses. For Beneficiaries that have State regulations that already require upgrades to 1992-2006 model year buses at the time of the proposed Eligible Mitigation Action, Eligible Buses shall also include 2007-2012 model year class 4-8 school buses, shuttle buses, or transit buses.
- b. Eligible Buses must be Scrapped.
- c. Eligible Buses may be Repowered with any new diesel or Alternate Fueled or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the model year in which the Eligible Bus Mitigation Action occurs.
- d. For Non-Government Owned Buses, Beneficiaries may draw funds from the Trust in the amount of:
 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. 25% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.

3. 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Government Owned Eligible Buses, and Privately Owned School Buses Under Contract with a Public School District, Beneficiaries may draw funds from the Trust in the amount of:
1. 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 2. 100% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.
 3. 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 4. 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

3. Freight Switchers

- a. Eligible Freight Switchers include pre-Tier 4 switcher locomotives that operate 1000 or more hours per year.
- b. Eligible Freight Switchers must be Scrapped.
- c. Eligible Freight Switchers may be Repowered with any new diesel or Alternate Fueled or All-Electric engine(s) (including Generator Sets), or may be replaced with any new diesel or Alternate Fueled or All-Electric (including Generator Sets) Freight Switcher, that is certified to meet the applicable EPA emissions standards (or other more stringent equivalent State standard) as published in the CFR for the model year in which the Eligible Freight Switcher Mitigation Action occurs.
- d. For Non-Government Owned Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of :
 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).

2. 25% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) Freight Switcher.
 3. 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
 4. 75% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.
- e. For Government Owned Eligible Freight Switchers, Beneficiaries may draw funds from the Trust in the amount of:
1. 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine(s) or Generator Sets, including the costs of installation of such engine(s).
 2. 100% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) Freight Switcher.
 3. 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
 4. 100% of the cost of a new All-Electric Freight Switcher, including charging infrastructure associated with the new All-Electric Freight Switcher.

4. Ferries/Tugs

- a. Eligible Ferries and/or Tugs include unregulated, Tier 1, or Tier 2 marine engines.
- b. Eligible Ferries and/or Tugs must be Scrapped.
- c. Eligible Ferries and/or Tugs may be Repowered with any new Tier 3 or Tier 4 diesel or Alternate Fueled engines, or with All-Electric engines, or may be upgraded with an EPA Certified Remanufacture System or an EPA Verified Engine Upgrade.
- d. For Non-Government Owned Eligible Ferries and/or Tugs, Beneficiaries may only draw funds from the Trust in the amount of:
 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).

2. 75% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).
- e. For Government Owned Eligible Ferries and/or Tugs, Beneficiaries may draw funds from the Trust in the amount of:
1. 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine(s), including the costs of installation of such engine(s).
 2. 100% of the cost of a Repower with a new All-Electric engine(s), including the costs of installation of such engine(s), and charging infrastructure associated with the new All-Electric engine(s).

5. Ocean Going Vessels (OGV) Shorepower

- a. Eligible Marine Shorepower includes systems that enable a compatible vessel's main and auxiliary engines to remain off while the vessel is at berth. Components of such systems eligible for reimbursement are limited to cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution. Marine shore power systems must comply with international shore power design standards (ISO/IEC/IEEE 80005-1-2012 High Voltage Shore Connection Systems or the IEC/PAS 80005-3:2014 Low Voltage Shore Connection Systems) and should be supplied with power sourced from the local utility grid.
- b. For Non-Government Owned Marine Shorepower, Beneficiaries may only draw funds from the Trust in the amount of 25% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution components.
- c. For Government Owned Marine Shorepower, Beneficiaries may draw funds from the Trust in the amount of 100% for the costs associated with the shore-side system, including cables, cable management systems, shore power coupler systems, distribution control systems, and power distribution components.

6. Class 4-7 Local Freight Trucks (Medium Trucks)

- a. Eligible Medium Trucks include 1992-2006 model year class 4-7 Local Freight trucks, and for Beneficiaries that have State regulations that already require upgrades to 1992-2006 model year trucks at the time of the proposed Eligible Mitigation Action, Eligible Trucks shall also include 2007-2012 model year class 4-7 Local Freight trucks.

- b. Eligible Medium Trucks must be Scrapped.
- c. Eligible Medium Trucks may be Repowered with any new diesel or Alternate Fueled or All-Electric engine, or may be replaced with any new diesel or Alternate Fueled or All-Electric vehicle, with the model year in which the Eligible Medium Trucks Mitigation Action occurs.
- d. For Non-Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. 40% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 - 2. 25% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.
 - 3. 75% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 - 4. 75% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.
- e. For Government Owned Eligible Medium Trucks, Beneficiaries may draw funds from the Trust in the amount of:
 - 1. 100% of the cost of a Repower with a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) engine, including the costs of installation of such engine.
 - 2. 100% of the cost of a new diesel or Alternate Fueled (e.g. CNG, propane, Hybrid) vehicle.
 - 3. 100% of the cost of a Repower with a new All-Electric engine, including the costs of installation of such engine, and charging infrastructure associated with the new All-Electric engine.
 - 4. 100% of the cost of a new All-Electric vehicle, including charging infrastructure associated with the new All-Electric vehicle.

7. Airport Ground Support Equipment

- a. Eligible Airport Ground Support Equipment includes:
 - 1. Tier 0, Tier 1, or Tier 2 diesel powered airport ground support equipment; and

2. Uncertified, or certified to 3 g/bhp-hr or higher emissions, spark ignition engine powered airport ground support equipment.
- b. Eligible Airport Ground Support Equipment must be Scrapped.
- c. Eligible Airport Ground Support Equipment may be Repowered with an All-Electric engine, or may be replaced with the same Airport Ground Support Equipment in an All-Electric form.
- d. For Non-Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may only draw funds from the Trust in the amount of:
 1. 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 2. 75% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.
- e. For Government Owned Eligible Airport Ground Support Equipment, Beneficiaries may draw funds from the Trust in the amount of:
 1. 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 2. 100% of the cost of a new All-Electric Airport Ground Support Equipment, including charging infrastructure associated with such new All-Electric Airport Ground Support Equipment.

8. Forklifts

- a. Eligible Forklifts includes forklifts with greater than 8000 pounds lift capacity.
- b. Eligible Forklifts must be Scrapped.
- c. Eligible Forklifts may be Repowered with an All-Electric engine, or may be replaced with the same Forklifts in an All-Electric form.
- d. For Non-Government Owned Eligible Forklifts, Beneficiaries may draw funds from the Trust in the amount of:
 1. 75% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.

2. 75% of the cost of a new All-Electric Forklift, including charging infrastructure associated with such new All-Electric Forklift.
 - e. For Government Owned Eligible Forklifts, Beneficiaries may draw funds from the Trust in the amount of:
 1. 100% of the cost of a Repower with a new All-Electric engine, including costs of installation of such engine, and charging infrastructure associated with such new All-Electric engine.
 2. 100% of the cost of a new All-Electric Forklift, including charging infrastructure associated with such new All-Electric Forklift.
9. Light Duty Zero Emission Vehicle Supply Equipment. Each Beneficiary may use up to fifteen percent (15%) of its allocation of Trust Funds on the costs necessary for, and directly connected to, the acquisition, installation, operation and maintenance of new light duty zero emission vehicle supply equipment for projects as specified below. Provided, however, that Trust Funds shall not be made available or used to purchase or rent real-estate, other capital costs (e.g., construction of buildings, parking facilities, etc.) or general maintenance (i.e., maintenance other than of the Supply Equipment).
 - a. Light duty electric vehicle supply equipment includes Level 1, Level 2 or fast charging equipment (or analogous successor technologies) that is located in a public place, workplace, or multi-unit dwelling and is not consumer light duty electric vehicle supply equipment (i.e., not located at a private residential dwelling that is not a multi-unit dwelling).
 - b. Light duty hydrogen fuel cell vehicle supply equipment includes hydrogen dispensing equipment capable of dispensing hydrogen at a pressure of 70 megapascals (MPa) (or analogous successor technologies) that is located in a public place.
 - c. Subject to the 15% limitation above, each Beneficiary may draw funds from the Trust in the amount of:
 1. 100% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a Government Owned Property.
 2. 80% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that will be available to the public at a Non-Government Owned Property.
 3. 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a workplace but not to the general public.

4. 60% of the cost to purchase, install and maintain eligible light duty electric vehicle supply equipment that is available at a multi-unit dwelling but not to the general public.
 5. 33% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 250 kg/day, that will be available to the public.
 6. 25% of the cost to purchase, install and maintain eligible light duty hydrogen fuel cell vehicle supply equipment capable of dispensing at least 100 kg/day that will be available to the public.
10. Diesel Emission Reduction Act (DERA) Option. Beneficiaries may use Trust Funds for their non-federal match or overmatch pursuant to Title VII, Subtitle G, Section 793 of the DERA Program in the Energy Policy Act of 2005 (codified at 42 U.S.C. 16133), thereby allowing Beneficiaries to use such Trust Funds for actions not specifically enumerated in this Appendix D-2, but otherwise eligible under DERA pursuant to all DERA guidance documents available through the EPA.

Eligible Mitigation Action Expenditures

For any Eligible Mitigation Action, Beneficiaries may use Trust Funds for actual administrative expenditures (described below) associated with implementing such Eligible Mitigation Action, but not to exceed 10% of the total cost of such Eligible Mitigation Action.

1. Personnel includes costs of employee salaries and wages, but not consultants.
2. Fringe Benefits includes costs of employee fringe benefits such as health insurance, FICA, retirement, life insurance, and payroll taxes.
3. Travel includes costs of Mitigation Action-related travel by program staff, but does not include consultant travel.
4. Equipment includes an article of nonexpendable, tangible personal property (as opposed to land or buildings) having a useful life of more than one year and an acquisition cost that equals or exceeds \$5,000.
5. Supplies includes tangible property other than “Equipment” purchased in support of the Mitigation Action that will be expensed on the Statement of Activities, such as educational publications, office supplies, etc. Identify general categories of supplies and their Mitigation Actioned costs.
6. Contractual includes all contracted services and goods except for those charged under other categories such as equipment, construction, etc. Contracts for evaluation and consulting services and contracts with sub-recipient organizations are included.
7. Construction includes costs associated with ordinary or normal rearrangement and alteration of facilities.
8. Other costs include insurance, professional services, occupancy and equipment leases, printing and publication, training, and accounting.

Definitions/Glossary of Terms

“Airport Ground Support Equipment” shall mean vehicles and equipment used at an airport to service aircraft between flights.

“All-Electric” shall mean powered exclusively by electricity provided by a battery, fuel cell, or the grid.

“Alternate Fueled” shall mean an engine, or a vehicle or piece of equipment which is powered by an engine, which uses a fuel different from or in addition to gasoline fuel or diesel fuel (e.g., CNG, propane, diesel-electric Hybrid).

“Certified Remanufacture System or Verified Engine Upgrade” shall mean engine upgrades certified or verified by EPA or CARB to achieve a reduction in emissions.

“Class 4-7 Local Freight Trucks (Medium Trucks)” shall mean trucks, including commercial trucks, used to deliver cargo and freight (e.g., courier services, delivery trucks, box trucks

moving freight, waste haulers, dump trucks, concrete mixers) with a Gross Vehicle Weight Rating (GVWR) between 14,001 and 33,000 lbs.

“Class 4-8 School Bus, Shuttle Bus, or Transit Bus (Buses)” shall mean vehicles with a Gross Vehicle Weight Rating (GVWR) greater than 14,001 lbs used for transporting people. See definition for School Bus below.

“Class 8 Local Freight, and Port Drayage Trucks (Eligible Large Trucks)” shall mean truck tractors with a Gross Vehicle Weight Rating (GVWR) greater than 33,000 lbs used for port drayage and/or freight/cargo delivery (including waste haulers, dump trucks, concrete mixers).

“CNG” shall mean Compressed Natural Gas.

“Drayage Trucks” shall mean trucks hauling cargo to and from ports and intermodal rail yards.

“Forklift” shall mean nonroad equipment used to lift and move materials short distances; generally includes tines to lift objects. Eligible types of forklifts include reach stackers.

“Freight Switcher” shall mean a locomotive that moves rail cars around a rail yard as compared to a line-haul engine that move freight long distances.

“Generator Set” shall mean a switcher locomotive equipped with multiple engines that can turn off one or more engines to reduce emissions and save fuel depending on the load it is moving.

“Government” shall mean a State agency, school district, municipality, city, county, tribal government or native village, or port authority that has jurisdiction over transportation and air quality. The term ‘State’ means the several States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the United States Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands.

“Gross Vehicle Weight Rating (GVWR)” shall mean the maximum weight of the vehicle, as specified by the manufacturer. GVWR includes total vehicle weight plus fluids, passengers, and cargo.

- Class 1: < 6000 lb
- Class 2: 6001-10,000 lb
- Class 3: 10,001-14,000 lb
- Class 4: 14,001-16,000 lb
- Class 5: 16,001-19,500 lb
- Class 6: 19,501-26,000 lb
- Class 7: 26,001-33,000 lb
- Class 8: > 33,001 lb

“Hybrid” shall mean a vehicle that combines an internal combustion engine with a battery and electric motor.

“Infrastructure” shall mean the equipment used to enable the use of electric powered vehicles (e.g., electric vehicle charging station).

“Intermodal Rail Yard” shall mean a rail facility in which cargo is transferred from drayage truck to train or vice-versa.

“Plug-in Hybrid Electric Vehicle (PHEV)” shall mean a vehicle that is similar to a Hybrid but is equipped with a larger, more advanced battery that allows the vehicle to be plugged in and recharged in addition to refueling with gasoline. This larger battery allows the car to be driven on a combination of electric and gasoline fuels.

“Repower” shall mean to replace an existing engine with a newer, cleaner engine or power source that is certified by EPA and, if applicable, CARB, to meet a more stringent set of engine emission standards. Repower includes, but is not limited to, diesel engine replacement with an engine certified for use with diesel or a clean alternate fuel, diesel engine replacement with an electric power source (grid, battery), diesel engine replacement with a fuel cell, and/or diesel engine replacement with an electric generator(s) (genset). All-Electric and fuel cell Repowers do not require EPA or CARB certification.

“School Bus” shall mean a Class 4-8 bus sold or introduced into interstate commerce for purposes that include carrying students to and from school or related events. May be Type A-D.

“Scrapped” shall mean to render inoperable and available for recycle, and, at a minimum, to specifically cut a 3-inch hole in the engine block for all engines. If any Eligible Vehicle will be replaced as part of an Eligible project, scrapped shall also include the disabling of the chassis by cutting the vehicle’s frame rails completely in half.

“Tier 0, 1, 2, 3, 4” shall refer to corresponding EPA engine emission classifications for nonroad, locomotive and marine engines.

“Zero Emission Vehicle (ZEV)” shall mean a vehicle that produces no emissions from the on-board source of power (e.g., All-Electric or hydrogen fuel cell vehicles).

APPENDIX D-3
Certification for Beneficiary Status
Under Environmental Mitigation Trust Agreement

In re Volkswagen “Clean Diesel” Marketing, Sales Practices and Products Liability Litigation, No. 15-md-2672 (CRB)(JSC) (N.D.Ca.)

APPENDIX D-3

**CERTIFICATION FOR BENEFICIARY STATUS
UNDER ENVIRONMENTAL MITIGATION TRUST AGREEMENT**

1. Identity of Lead Agency

_____ (“Beneficiary”), by and through the Office of the Governor (or, if not a State, the analogous Chief Executive) of the Appendix D-1 entity on whose behalf the Certification Form is submitted: (i) hereby identifies

_____ (“Lead Agency”) as the lead agency for purposes of the Beneficiary’s participation in the Environmental Mitigation Trust (“Trust”) as a Beneficiary; and (ii) hereby certifies that the Lead Agency has the delegated authority to act on behalf of and legally bind the Beneficiary for purposes of the Trust.

2. Submission to Jurisdiction

The Beneficiary expressly consents to the jurisdiction of the U.S. District Court for the Northern District of California for all matters concerning the interpretation or performance of, or any disputes arising under, the Trust and the Environmental Mitigation Trust Agreement (“Trust Agreement”). The Beneficiary’s agreement to federal jurisdiction for this purpose shall not be construed as consent to federal court jurisdiction for any other purpose.

3. Agreement to be Bound by the Trust Agreement and Consent to Trustee Authority

The Beneficiary agrees, without limitation, to be bound by the terms of the Trust Agreement, including the allocations of the Trust Assets set forth in Appendix D-1 to Appendix D of the Consent Decree, as such allocation may be adjusted in accordance with the Trust Agreement. The Beneficiary further agrees that the Trustee has the authorities set forth in the Trust Agreement, including but not limited to the authority: (i) to approve, deny, request modifications, or request further information related to any request for funds pursuant to the Trust Agreement; and (ii) to implement the Trust Agreement in accordance with its terms.

4. Certification of Legal Authority

The Beneficiary certifies that: (i) it has the authority to sign and be bound by this Certification Form; (ii) the Beneficiary’s laws do not prohibit it from being a Trust Beneficiary; (iii) either (a) the Beneficiary’s laws do not prohibit it from receiving or directing payment of funds from the Trust, or (b) if the Beneficiary does not have the authority to receive or direct payment of funds from the Trust, then prior to requesting any funds from the Trust, the Beneficiary shall obtain full legal authority to receive and/or direct payments of such funds within two years of submitting this Certification Form; and (iv) if the Beneficiary does not have the authority to receive or direct payment of funds from the Trust and fails to demonstrate that it has obtained such legal authority within two years of submitting this Certification Form, it shall become an Excluded Entity under

In re Volkswagen “Clean Diesel” Marketing, Sales Practices and Products Liability Litigation, No. 15-md-2672 (CRB)(JSC) (N.D.Ca.)

the Trust Agreement and its initial allocation shall be redistributed among the Beneficiaries pursuant to subparagraph 5.0.1 of the Trust Agreement.

5. Certification of Legal Compliance and Disposition of Unused Funds

The Beneficiary certifies and agrees that, in connection with all actions related to the Trust and the Trust Agreement, the Beneficiary has followed and will follow all applicable law and will assume full responsibility for its decisions in that regard. The Beneficiary further certifies that all funds received on account of any Eligible Mitigation Action request that are not used for the Eligible Mitigation Action shall be returned to the Trust for credit to the Beneficiary’s allocation.

6. Waiver of Claims for Injunctive Relief under Environmental or Common Laws

Upon becoming a Beneficiary, the Beneficiary, on behalf of itself and all of its agencies, departments, offices, and divisions, hereby expressly waives, in favor of the parties to the Consent Decree (including the Settling Defendants), all claims for injunctive relief to redress environmental injury caused by the 2.0 Liter Subject Vehicles, whether based on the environmental or common law within its jurisdiction. This waiver is binding on all agencies, departments, offices, and divisions of the Beneficiary asserting, purporting to assert, or capable of asserting such claims. This waiver does not waive, and the Beneficiary expressly reserves, its rights, if any, to seek fines or penalties.

7. Publicly Available Information

The Beneficiary certifies that it will maintain and make publicly available all documentation and records: (i) submitted by it in support of each funding request; and (ii) supporting all expenditures of Trust Funds by the Beneficiary, each until the Consent Decree Termination Date, unless the laws of the Beneficiary require a longer record retention period. Together herewith, the Beneficiary attaches an explanation of: (i) the procedures by which the records may be accessed, which shall be designed to support access and limit burden for the general public; (ii) for the Beneficiary Mitigation Plan required under Paragraph 4.1 of the Trust Agreement, the procedures by which public input will be solicited and considered; and (iii) a description of whether and the extent to which the certification in this Paragraph 7 is subject to the Beneficiary’s applicable laws governing the publication of confidential business information and personally identifiable information.

8. Notice of Availability of Mitigation Action Funds

The Beneficiary certifies that, not later than 30 Days after being deemed a Beneficiary pursuant to the Trust Agreement, the Beneficiary will provide a copy of the Trust Agreement with Attachments to the U.S. Department of the Interior, the U.S. Department of Agriculture, and any other Federal agency that has custody, control or management of land within or contiguous to the territorial boundaries of the Beneficiary and has by then notified the Beneficiary of its interest hereunder, explaining that the Beneficiary may request Eligible Mitigation Action funds for use on lands within that Federal agency’s custody, control or management (including but not limited

In re Volkswagen "Clean Diesel" Marketing, Sales Practices and Products Liability Litigation, No. 15-md-2672 (CRB)(JSC) (N.D.Ca.)

to Clean Air Act Class I and II areas), and setting forth the procedures by which the Beneficiary will review, consider, and make a written determination upon each such request.

9. Registration of 2.0 Liter Subject Vehicles

The Beneficiary certifies, for the benefit of the parties to the Consent Decree (including the Settling Defendants) and the owners from time-to-time of 2.0 Liter Subject Vehicles, that upon becoming a Beneficiary, the Beneficiary:

- (a) Shall not deny registration to any Subject Vehicle based solely on:
 - i. The presence of a defeat device or AECD covered by the resolution of claims in the Consent Decree; or
 - ii. Emissions resulting from such a defeat device or AECD; or
 - iii. The availability of an Approved Emissions Modification or the Buyback, Lease Termination, and Owner/Lessee Payment Program.
- (b) Shall not deny registration to any Subject Vehicle that has received an Approved Emissions Modification based solely on:
 - i. The fact that the vehicle received the Approved Emissions Modification; or
 - ii. Emissions resulting from the modification (including but not limited to the anticipated emissions described in Appendix B to the Consent Decree); or
 - iii. Other emissions-related vehicle characteristics that result from the modification; or
 - iv. The availability of an Approved Emissions Modification or the Buyback, Lease Termination, and Owner/Lessee Payment Program.
- (c) May identify 2.0 Liter Subject Vehicles as having received, or not received, the Approved Emissions Modification on the basis of VIN-specific information provided to the Beneficiary by the Settling Defendants.
- (d) Notwithstanding the foregoing, the Beneficiary may deny registration to any Subject Vehicle on the basis that the Subject Vehicle fails to meet EPA's or the Beneficiary's failure criteria for the onboard diagnostic (OBD) inspection; or on other grounds authorized or required under applicable federal regulations (including an approved State Implementation Plan) or under Section 209 or 177 of the Clean Air Act and not explicitly excluded in subparagraphs 9(a)-(b).

In re Volkswagen "Clean Diesel" Marketing, Sales Practices and Products Liability Litigation, No. 15-md-2672 (CRB)(JSC) (N.D.Ca.)

FOR THE GOVERNOR (or, if not a State, the analogous Chief Executive):

Signature: _____

Name: _____

Title: _____

Date: _____

Location: _____

[FOR OTHER REQUIRED SIGNATORIES]:

Signature: _____

Name: _____

Title: _____

Date: _____

Location: _____

[FOR OTHER REQUIRED SIGNATORIES]:

Signature: _____

Name: _____

Title: _____

Date: _____

Location: _____

Tab 10

(footnote 19)

VOLKSWAGEN

GROUP OF AMERICA

National ZEV Investment Plan: Cycle 1

Public version

April 9, 2017

Contents

1. Executive Summary	3
2. National ZEV Investment Plan	16
2.1. Overview	16
2.2. Investment types and descriptions	18
2.2.1. Infrastructure	18
2.2.2. Public education	30
2.2.3. Public access initiatives	32
2.3. Anticipated Creditable Costs	33
2.4. Advancement of ZEV technology in the United States	33
2.5. Certification of activities	34
2.6. Supporting literature	34
2.7. ZEV charging infrastructure glossary	39

1. Executive Summary

As required by Appendix C to the 2.0-Liter Partial Consent Decree entered by the U.S. District Court for the Northern District of California on October 25, 2016, Volkswagen Group of America is investing \$1.2 billion over the next 10 years in zero emission vehicle (ZEV) infrastructure, education, and access outside California to support the increased adoption of ZEV technology in the United States, representing the largest commitment of its kind to date. Based on figures from the Council of Economic Advisors and U.S. Department of Transportation related to highway and transit investments, the \$1.2 billion being spent here is estimated to support up to 15,000 jobs throughout the United States over the 10 year course of the investment [*Dept. of Transportation, Council of Economic Advisors*].¹ The first cycle of a separate investment of \$800 million in California is the subject of the California ZEV Investment Plan, which was submitted to the California Air Resources Board on March 8.

Volkswagen Group of America has created Electrify America LLC, a wholly-owned subsidiary headquartered in Reston, Virginia, to fulfill its Appendix C commitments.

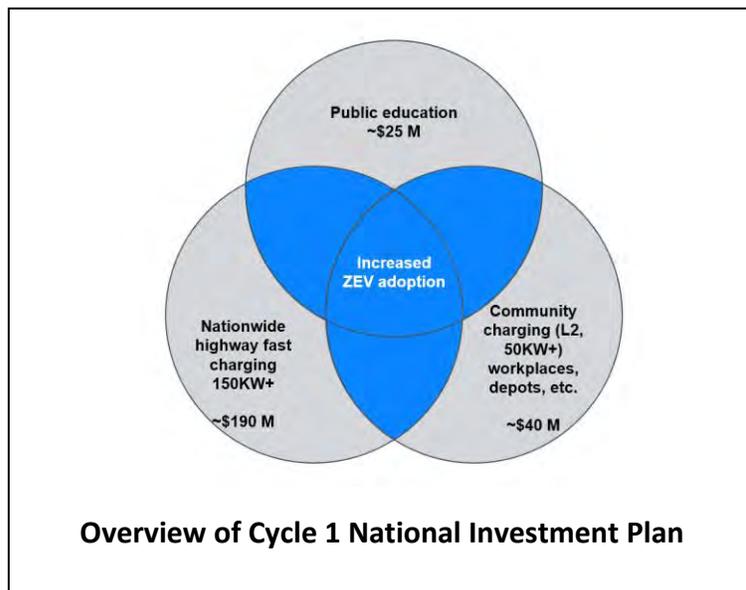
The investment: The \$1.2 billion commitment will be spent in \$300 million increments over four 30-month cycles. This report describes the \$300 million in investments that will be made in the first 30-month cycle, which runs from Q1 2017 through Q2 2019, to meet this goal.

Cycle 1 (Q1 2017 – Q2 2019)	Cycle 2 (Q3 2019 - Q4 2021)	Cycle 3 (Q1 2022 – Q2 2024)	Cycle 4 (Q3 2024 – Q4 2026)	Full 10 years
\$300M	\$300M	\$300M	\$300M	\$1,200M

This investment will make it easier for millions of Americans to charge their electric vehicles. In addition, Electrify America will broadly promote the benefits of ZEVs to consumers through education campaigns.

¹ The Council of Economic Advisors estimates that every \$1 billion in federal highway and transit investment would support 13,000 jobs. This total count includes direct, indirect, and induced jobs. Note that the estimate here is for the number of jobs across the entire 10-year, \$1.2 billion investment, and not just the first investment cycle, and assumes that spend on charging infrastructure will create a similar number of job-hours per dollar spent as highway and transit investments.

The Cycle 1 plan: In the first ZEV investment cycle, Electrify America will focus on three activities aimed at increasing the use of ZEVs and showing more Americans that going electric is possible and beneficial today. (1) Installing charging infrastructure (approximately \$250 million), (2) Public Education initiatives (approximately \$25 million), (3) ZEV access initiatives (under development), and an additional approximately \$25 million spent on the operational costs of running Electrify America (e.g., personnel, other business expenses).



INSTALLING CHARGING INFRASTRUCTURE (~\$250 million)

Electrify America plans to build charging infrastructure that will primarily consist of (1) community charging and (2) a long distance highway network. In addition, other use cases/technologies are also under consideration including targeted battery storage to manage peak demand and ease grid loads, etc.

A series of guiding principles were applied to identify appropriate infrastructure investments:

- Focus on accessible locations where utilization is expected to be high for ZEV drivers
- Focus on a variety of use cases based on the anticipated charging behaviors of ZEV drivers
- Incorporate anticipated changes in the ZEV industry to maximize usefulness of stations in the medium-to-long term
- Consideration for long term sustainability of the network

Charging stations will be located first in the areas with the highest anticipated ZEV demand; this is based on the forecast penetration rates of ZEVs in each region and the estimated gap between the supply and demand of charging infrastructure in those regions. In aggregate, the Electrify America first cycle investment will aim to establish a network of approximately 2500+ non-proprietary chargers across 450+ individual stations. Note that, in addition to the capital spend numbers shared below, there is an additional approximately \$20 million associated with creditable station operating expenses (e.g., fixed costs).

Electrify America stations will be designed to provide access by supporting multiple non-proprietary and interoperable charging technologies to meet different needs. Level 2 AC charging (L2) with universally accepted J1772 connectors will serve charging at long dwell-time locations. 50+ kW Direct Current (DC) fast charging will serve ZEV needs in shorter dwell time situations and along highway corridors, utilizing non-proprietary charging standards (CCS and CHAdeMO). Electrify America will also support open protocols including Open Charge Point Protocol (OCPP) that allow more standardized communication between different chargers and networks.

To simplify the consumer experience, Electrify America will seek access agreements with owners of other charging networks to make it easy for as many ZEV drivers as possible to move more seamlessly between different charging networks.

Community charging (approximately \$40 million in capex)

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

Electrify America has selected 11 metropolitan areas for Cycle 1 investment: New York City, Washington D.C., Chicago, Portland (OR), Boston, Seattle, Philadelphia, Denver, Houston, Miami, and Raleigh. Government agencies from ten of these metro areas submitted proposals to Electrify America, some of which were the most comprehensive proposals received. Electrify America notes that it was not able to select every metropolitan area that submitted a strong proposal, but it intends to expand its Community Charging investments into metro areas with supportive government policies and strong utility integration in future investment cycles.

Within selected metros, Electrify America plans to build 300+ stations across five major use cases (multi-family homes, workplace, commercial/retail, community, and municipal lots/garages). In order to maximize the effectiveness of the network, it is important to focus on a variety of use cases. According to an NREL report from Jan. 2017, workplace and public charging have both been shown to significantly increase fleet-wide electric vehicle miles traveled [Wood *et al.*, 2017], consistent with the overall goals of Electrify America. A deployment mix of AC L2, DC 50 kW, and DC 150+ kW chargers will be offered across these use

cases to help best meet the anticipated needs of ZEV drivers. Reasoning behind the metro area selection is provided in Section 2.2.1.2.1.

A high-speed highway network (approximately \$190 million in capex)

In recent years, a consensus around the value of a national network of extremely high speed ZEV charging equipment along our nation’s highways has been emerging. In 2013, western states coordinated with industry to establish the West Coast Electric Highway, which has “successfully enabled significant range extension” for ZEVs and led to “a considerable amount of long distance travel” by ZEV drivers according to Idaho National Laboratory research [*INL 2015b*].

In 2015, Congress required the Federal government to designate national electric vehicle charging corridors and established an aspirational goal of deploying charging infrastructure along the full nationwide network by 2020 [*FAST Act*]. In 2016, the Department of Energy and the Department of Transportation agreed to jointly develop a 2020 vision for that network incorporating DC fast charging at power levels up to 350 kW. Upon designation of the corridors in 2016, 28 states, utilities, vehicle manufactures, and suppliers – such as New York, General Motors, and General Electric – committed to help accelerate ZEV charging infrastructure deployment along these corridors [*Laign*].

The comments, recommendations and proposals submitted to Electrify America through the National Outreach Plan process articulated overwhelming support for investment in a nationwide network of high speed ZEV charging infrastructure along our nation’s highways. More than 100 comments and proposals called for investment in DC fast charging corridors, and approximately 20 specifically called for deploying a network with faster, higher-powered charging than is available today. For example, nine states listed DC fast charging corridors as their number one investment priority.

Electrify America will build a long distance high speed highway network consisting of charging stations along high-traffic corridors between metropolitan areas and across the country, with an initial target of approximately 240 highway sites installed or under development by the end of the first cycle, more than 150 of which are expected to be completed. These highway sites will be present in 39 U.S. states with higher anticipated ZEV average annual daily traffic (AADT, a Department of Transportation measure of road traffic density on an annual basis) by 2020. The sites will be located on prominent U.S. interstates and highways, and they have high correlation with the recently-announced EV Charging Corridors [*Alternative Fuels Corridors 2017*]. Sites will be, on average, about 66 miles apart, with no more than 120 miles between stations, meaning many shorter range ZEVs available today will be able to use this network. Also, note that we accounted for existing infrastructure on targeted

highways in our methodology to ensure that the network will supplement, not duplicate, investments already made (see Section 2.2.1.2.2.).

More than 25 comments to Electrify America – especially from ZEV drivers – emphasized the importance of placing stations in locations with sufficient amenities and proper signage. A “user-centric experience” along EV charging corridors is also an aspirational goal established by the Department of Transportation [FHWA, 2017]. Electrify America’s goal is to locate the charging sites within easy access of the interstate in locations that provide ample parking spaces for charging, ensure customer safety, and offer access to retail and service establishments like restaurants, coffee houses, and retail and convenience stores that provide customers with options during the typical charging time period of up to 30 minutes. The average station will be able to charge five vehicles at once, with station capacity ranging from no less than four and up to ten vehicles charging at a time.

In order to accommodate the call for faster charging reflected in public comments, the chargers deployed will represent state-of-the-art technology with the fastest charging speeds available. Stations will focus on 150 kW and some 320 kW DC fast chargers, which will also be capable of charging 50 kW capable vehicles at a lower power level.² Most currently installed non-proprietary DC fast chargers are in the 25-50 kW range; a 50 kW charger can supply about 3 miles of ZEV range per minute of charging. Electrify America’s 150 kW DC fast charging stations will provide about 9 miles of ZEV range per minute of charging, while 320 kW DC fast chargers will provide about 19 miles of range per minute. These faster charging speeds are necessary to refuel the next generation of larger battery capacity ZEVs with all-electric ranges above 200 miles. According to Navigant Research projections, these vehicles will represent 84 percent of battery-electric vehicle sales by 2020. By 2025, 39 different models of 200+ mile battery-electric vehicles are projected to represent 87 percent of sales [Navigant, 2016b]. Electrify America’s network is being designed to charge this next generation of ZEVs.

Industry input received during the Outreach Plan provides Electrify America with confidence that one or more vehicle manufacturers plan to sell 320 kW capable ZEVs by 2020. Electrify America will carefully evaluate the ratio of 150/320 kW chargers at these sites for maximum customer convenience and optimal budgeting, but it plans to “future proof” these investments by designing most stations to be cost-effectively converted from 150 kW to 320 kW charging by the end of the 4th cycle (e.g., by installing appropriately-powered utility connections capable of handling 320 kW chargers), as recommended by Idaho National Lab. Electrify America will also maintain open discussions with OEMs to track progress towards 320

² Idaho National Lab, DOE, and DOT refer to power levels of 350 kW because the limit of the standard is currently 350 amps multiplied by 1000 volts, or 350kW. However, comments from OEMs and experts during the Outreach Plan process have led Electrify America to believe that the next generation of vehicles will be designed to go up to 920V, not 1000V. Electrify America refers to 320 kW charging to reflect the result of 350A x 920V.”

kW-capable vehicles, understanding that there are still technical, cost, and code and standard setting challenges associated with this new technology [Carson, 2016].

Building the infrastructure

In constructing and operating a charging network, Electrify America, which is headquartered in Reston, Virginia, will rely on an extensive group of third-party suppliers and vendors in the charging infrastructure space, most of whom are based in the United States. As such, these partnerships will mean that jobs are created and many existing companies will grow as a result of Electrify America’s \$250 million Cycle 1 investment across the nation and its additional \$120 million investment in California. Electrify America has already begun formal discussions with suppliers, through both a Request for Information (RFI) sent to potential suppliers in December 2016 and through the formal issuance of Requests for Proposals (RFPs), the first of which was issued in March 2017. Over 80% of the suppliers issued the RFI were companies based in the United States.

Preliminary milestones for the network construction progress are shown in Table 1. Site development for the first Electrify America stations will begin in Q2 2017, with development initiated for all stations by Q2 2018. These first stations are expected to be completed and operational for local community charging in Q3 2017 and for highway charging in Q2 2018. Given long lead times in terms of site acquisition and permitting processes, the majority of the stations are expected to be completed near the end of the 30 month cycle, from fewer than approximately 150-200 operational stations in Q2 2018 to 450+ stations by the end of Q2 2019.

	National ZEV infrastructure		
	Pre-site selection	In development	Operational
Q2 2017	350-400	100-150	0
Q4 2017	150-200	200-250	50-100
Q2 2018	0-50	300-350	150-200
Q4 2018	0	150-200	250-300
Q2 2019	0	0-50	450+

TABLE 1: PRELIMINARY MILESTONES FOR NETWORK CONSTRUCTION FOR THE NATIONAL INFRASTRUCTURE PLAN

Much of this proposed schedule is determined by the lead times associated with various pre-installation tasks, including finding and acquiring sites, permitting, and securing available hardware (especially for new high-speed charging systems), each of which can vary considerably based on local factors. Much of the uncertainty around timelines is associated with (1) the site acquisition and design process, which requires contract negotiations with property owners/developers, customization of engineering drawings for specific sites, and the need to identify approximately five sites for each final location due to uncertainties through the implementation cycle; and (2) the permitting/approval process, which can take anywhere from

3 to 9 months depending on the permits required at the various levels of government (e.g., local vs. state).

BRAND-NEUTRAL PUBLIC EDUCATION AND AWARENESS ACTIVITIES (\$25 million)

Electrify America received nearly 150 submissions through the National Outreach Plan process that expressed support for investments that will increase public awareness of ZEVs' attributes and benefits. As one Western state explained, "Without a significant investment in highway corridor charging infrastructure, paired with a dynamic advertising and marketing campaign to spread the awareness of the emerging technology and associated infrastructure available to travelers, the ability of the EV market to expand eastward across the country will be stymied." Likewise, a Northeastern state commented: "A major brand-neutral marketing campaign would have the potential to raise awareness and acceptance of EVs broadly."

In order to inform the public education campaign, Electrify America has performed a segmentation analysis of the general car-buying population to evaluate the penetration of ZEVs in various car-buying population segments and regions, the positioning of zero-emission vehicles relative to competition, the barriers to adoption of ZEVs by population segment, and the key messages to communicate to the general population in order to improve penetration of ZEVs. Based on this analysis and analysis of consumer media consumption habits, Electrify America is developing a comprehensive educational campaign that will simultaneously communicate the benefits of ZEVs (performance, acceleration, quietness, comfort, and the overall enjoyment of the ride) and address barriers to adoption (range anxiety, "golf cart" misperception, charger availability).

Media will be used to put ZEVs on the "big stage" in order to help consumers understand that ZEVs not only meet the majority of their needs today, but even more so as the charging infrastructure network grows. The messaging will be split across traditional advertising channels such as television and targeted digital (including digital radio and social media). In order to quickly maximize messaging presence, a coordinated national/local media strategy was developed. This allows for quick ramp-up across the country, followed by sustained messaging in top, high-potential ZEV markets.

The nearly 150 comments received by Electrify America made it clear that extensive ZEV Education and Outreach efforts are ongoing, and Electrify America intends its investment to leverage and reinforce these ongoing efforts. Through the National Outreach Plan process, we have already begun conversations with a number of potential partners on educational initiatives, including ZEV advocacy organizations, school education curriculum developers, OEMs, and state agencies. We will continue to provide updates on these activities as they develop.

Electrify America’s creative agency continues to refine the creative content based on the segmentation analysis (highlighting the most impactful benefits of ZEVs), and creative concepts should be finalized in Q2 of 2017, followed by finalization of media planning by summer. Media will begin towards the end of Q3 of 2017.

ZEV ACCESS INITIATIVES

Numerous government agencies and other stakeholders proposed ZEV access programs in their comments to Electrify America. A program of experiential initiatives like ride-and-drive events are being developed to help increase ZEV access and exposure for as many Americans as possible.³ The purpose of these activities is to increase the public’s awareness of and access to ZEVs and allow them to experience ZEVs without having to purchase a vehicle.

³ Electrify America will seek written approval for access programs or projects from EPA before Electrify America makes these investments, as required by Appendix C.

1.2 Summary of Public Comments and Other Input

1.2.1. Summary of public comments

As part of the National Outreach Plan, Electrify America solicited proposals and recommendations from outside parties to help substantiate and improve this plan. Electrify America notified stakeholders identified in Appendix C (i.e., states, municipal governments, federally-recognized Indian tribes, and federal agencies) of the proposal submission period, which was open from December 9, 2016 to January 16, 2017. Further detail on outreach efforts can be found in the National Outreach Plan submitted to EPA on November 9, 2016. Electrify America will continue to consider input from stakeholders over the 10-year life of Appendix C.

For the first 30-month investment cycle, Electrify America allowed a 3-week grace period and considered submissions received through February 6, 2017. A total of 484 submissions were received as of February 6, 2017. Figure 1 provides an overview of the proposals by topic and by type of submitter.

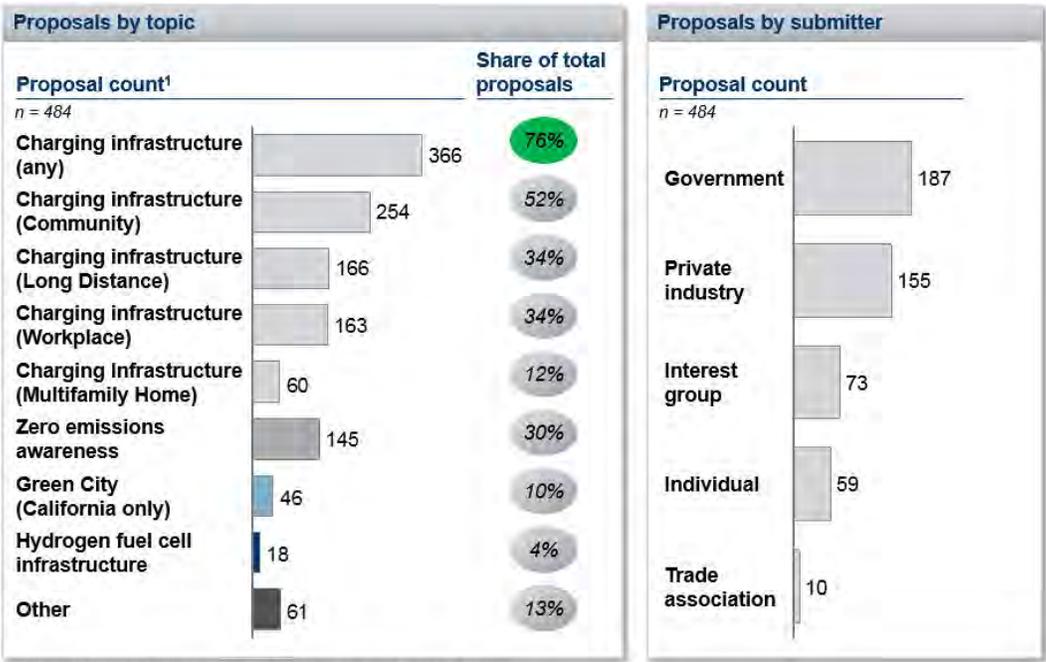


FIGURE 1: SUBMISSIONS BY TOPIC AND SOURCE, OTHER METRICS

Submissions were received from entities in all but four states, and two Native American tribes submitted proposals. The largest number of submissions originated from California (194 submissions), while 49 proposals and recommendations were received from representatives of a city, county, coalition, transit organization or air quality association outside of California.

About 29,000 unique visitors viewed the website, and 121,000 total website hits were recorded by February 6, 2017.

1.2.2. Consideration of comments

Proposals were initially evaluated across a variety of factors including, but not limited to, submission source, speed of implementation, likely charger utilization, and development synergies. Following the initial evaluation, proposals are being categorized based on actionability and sent for thorough professional review and sorting to the appropriate internal working teams at Electrify America. Starting March 13, working teams began to follow up with proposal and recommendation submitters to clarify submissions, discuss specific ideas, and incorporate some or all of the ideas into Electrify America’s plans. There is high likelihood that Electrify America will act on proposals that overlap with or optimize priorities identified by Electrify America in the first cycle. Note that *Electrify America intends to respond to everyone who submitted a proposal*. An overview of this process is shown in Figure 2.

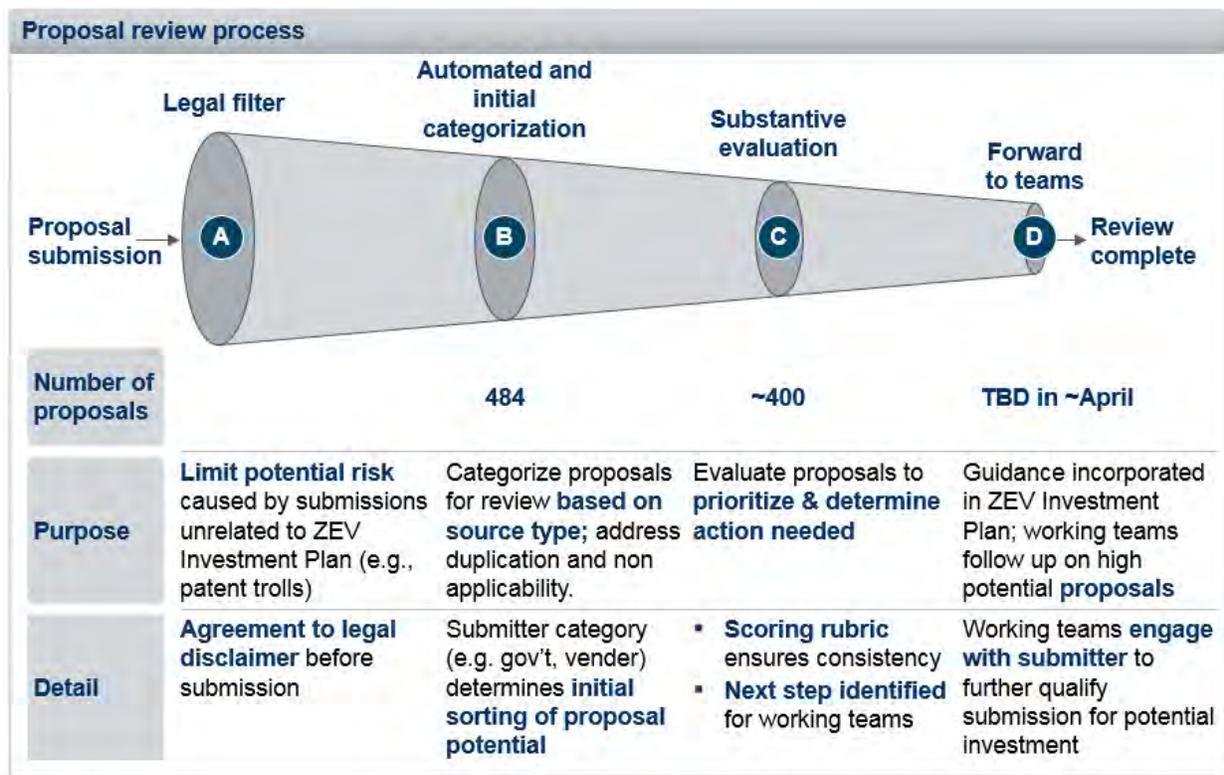


FIGURE 2: OVERVIEW OF PROCESS FOR CONSIDERATION OF PUBLIC COMMENTS

1.2.3. Samples of submitted proposals and recommendations

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

- **Charging Infrastructure Needs:** The overwhelming majority of comments supported and, in many cases, prioritized, ZEV charging infrastructure deployment investments. This was true across the full spectrum of commenters, from comprehensive proposals from State governments to requests from small towns and 'mom-and-pop' stores for a single charger. Commenters highlighted that charging infrastructure investments meet an identified need and a recognized ZEV deployment barrier. Consistent with this feedback, Electrify America is maximizing infrastructure investment in this plan in ways consistent with the requirements of Appendix C.
- **DC Fast Charging along Highway Corridors:** More than 100 comments and proposals focused on the importance of and execution of a highway network, and nine states and numerous other submissions explicitly urged Electrify America to prioritize investment in highway charging as its highest investment priority. Electrify America intends to focus nearly two-thirds of its national investment in this area, consistent with this recommendation.
- **ZEV charging depots:** Numerous submissions, especially from cities, proposed charging depots in urban centers, consistent with our strategy to incorporate this use case in metro areas. For example, in one Northeastern city, a consortium of parties including the local utility is seeking to install a 100% renewables-powered charging hub in its downtown.
- **Coordinated Planning with State and Regional Government:** Many submissions, especially from state agencies and regional coordinating entities, emphasized the benefits of coordinating infrastructure investments with ongoing state activities. For example, two Western states submitted a consolidated proposal to increase charging infrastructure through workplace charging, park-and-ride transit hub charging, and charging along key interstate corridors. These submissions have highlighted the value of coordinating with state agencies, and Electrify America has already initiated coordination as part of its outreach effort, as described below.
- **Workplace Charging:** Electrify America received more than 150 submissions supporting investment in workplace charging, which is an additional validation of the importance of this use case. Many comments from businesses and government agencies recommended specific sites. Electrify America will closely consider each site identified in a target metro area.

- **Multifamily Dwellings:** More than 50 submissions proposed investment in the multifamily and residential use case, affirming the importance of this use case.
- **Destination Charging:** A small number of commenters suggested that Electrify America invest in destination charging. This use case will receive more consideration from Electrify America given that some proposals had this focus, including some compelling destinations, such as national parks and monuments.
- **Airports:** Submissions from 20 airports and federal agencies proposed charging infrastructure investment at airports. These proposals are being evaluated and may be a further extension of longer dwell time parking applications. The fact that these typically preferentially-located chargers would be seen by non-EV drivers using those airports may help further build charging infrastructure awareness.
- **Experiential Projects:** Electrify America received more than 50 suggestions and proposals to provide experiential access to ZEVs, including ride and drives, ZEV taxis and car sharing, and brand-neutral ZEV showrooms. Electrify America plans to explore some of these concepts in its California Green City.
- **Other Recommendations Out of Scope:** Electrify America also received comments and proposals that it is not able to act upon in Cycle 1, either due to restrictions on investment in Appendix C, or because the investments would be outside of this investment plan's focus on foundational infrastructure to serve ZEV driver needs. For example, some cities and other entities requested that Electrify America supply them with ZEVs of various size classes, which would not qualify as a priority investment at this time. Additional proposals also recommended Electrify America investment in Level 1 charging, bicycle programs, and research and development projects, which are not creditable cost investments under Appendix C. While these submissions did not fit within the scope or timetable of the Cycle 1 ZEV Investment Plan, promising creditable ZEV initiatives will be considered in later investment cycles.

1.2.4. Other Input

Throughout development of this plan, Electrify America consulted knowledgeable experts in the ZEV space with extensive automaker, utility, infrastructure, policy, communications, technology, and consumer advocacy backgrounds.

Electrify America met with a number of utilities and utility groups to explore utility infrastructure investment approaches and synergies. We also spoke with state level officials and their associations to understand state-level infrastructure priorities, charging site opportunities, and potential partnership plans.

Electrify America met with Federal agency experts, who provided detailed information on the Federal government's Smart City effort, their process for designating EV charging

corridors along highways under the FAST Act, lessons learned from the EV Project and the Workplace Charging Challenge, and ongoing work to support deployment of non-proprietary DC fast charging at power levels up to 350 kW.

Additionally, major automotive original equipment manufacturers (OEMs) were consulted to understand their interest and expectations about a new, comprehensive charging network that would best suit future ZEV customers. Consumer, environmental, and EV driver groups were also consulted to gain their public interest viewpoints.

2. National ZEV Investment Plan

2.1. Overview

Over the course of the first 30-month investment cycle, Electrify America will invest \$300 million nationwide (excluding California, which is detailed in the California ZEV Investment Plan) across three primary areas:

1. ZEV charging infrastructure
2. ZEV public education campaign
3. ZEV access initiatives (under development)

Approximately \$250 million will be spent on charging infrastructure, at least \$25 million on public education investments, and the remainder (approximately \$25 million) on other operational expenses for Electrify America. Spend related to ZEV access initiatives has not yet been estimated. Note that all numbers and activities referenced in this investment plan refer to National spend (i.e., excludes spend under the California ZEV Investment Plan) unless otherwise indicated.

Figure 3 provides an overview of these planned costs.

Cost category	1 st cycle costs, \$M		
	National	California	Total
Electrify America operations / org	25	16	41
ZEV Infrastructure	250	164	~415
ZEV Education	25	21	43-50
Total	300	200	500

FIGURE 3: OVERVIEW OF COSTS ACROSS CATEGORIES

An overview of the three main investment categories is provided below:

1. **ZEV charging infrastructure:** Electrify America will focus on two primary areas for infrastructure investment: long-distance highway chargers and community-based metropolitan chargers. An overview of these investments is provided in Table 2.

	Long-distance highway network	Community-based metro network
Number of stations	240*	300+
Primary technologies	320 kW and 150 kW	150 kW, 50 kW, and L2
Number of highways/metros	~35 highways across the US	11 metro areas across the US
Approximate spend	\$190 million	\$40 million

*Stations built or under development.

TABLE 2: OVERVIEW OF LONG-DISTANCE HIGHWAY AND COMMUNITY-BASED LOCAL NETWORKS (EXCLUDING CALIFORNIA)

In developing this plan, we drew on a number of sources from academia, industry, and government (see Section 2.6. Supporting literature) to ensure investments are focused on high-priority areas where there is clear need for investment in ZEV infrastructure and where likelihood of utilization is highest. Details of the station location methodology is described in the following sections of this plan. Note that approximate spend on the highway network is \$190 million, the community-based network is \$40 million, and there are an additional \$15-20 million in creditable expenses associated with station operations (e.g. fixed costs around maintenance and networking).

2. **Public education campaigns:** The purpose of these campaigns is to develop a portfolio of brand-neutral media that increases the number of people aware of and willing to consider ZEVs.
3. **ZEV access initiatives:** Various experiential initiatives like ride and drive events are being considered to further increase ZEV access.

Overhead and other costs are expected to account for approximately \$25 million of Electrify America’s spend in the first 30-month investment cycle. The majority of this spend (approximately \$20 million) will be attributable to operating the business (e.g., personnel).

2.2. Investment types and descriptions

2.2.1. Infrastructure

2.2.1.1. Guiding principles

Electrify America's mission is to establish one of the largest, most technically advanced and customer-friendly charging networks in the U.S. to promote and support the increased adoption of ZEVs. Key guiding principles used to design the network include the following:

- **Focus on locations where access and utilization is expected to be highest:** investments target highways and metropolitan areas with high current and projected concentrations of ZEV drivers to maximize potential network utilization.
- **Focus on a variety of use cases based on anticipated charging behaviors of ZEV drivers:** Electrify America will build chargers to cater to drivers on highways, in public areas (commercial/retail locations, parking garages), in workplaces and multi-family dwellings, and in other viable use cases where appropriate.
- **Incorporate anticipated changes in the ZEV industry by 'future-proofing' stations to maximize their usefulness in the medium-to-long term:** investment will include the latest technology (from L2s up to 320 kW DC fast charging) and operate across different charging standards (CCS and CHAdeMO) to maximize access and help ensure future compatibility in a rapidly evolving industry. Electrify America will also continually look for new technologies, including wireless charging, and work to incorporate them in future investment cycles. Wireless charging will likely occur no earlier than cycle 2 as even the most credible wireless charging proposal we received acknowledged that the bulk of wireless charging investment might not be viable until after 2020. By focusing on open standards and cross-platform compatibility in the first 30-month cycle, Electrify America will be well positioned to adopt new technologies.
- **Focus on a sustainable business model:** the Electrify America network is being designed to ensure that the network is economically viable and can be operated and maintained for the long term.
- **Focus on interoperability and suitable signage:** the Electrify America network will represent an advanced business-to-business (B2B) platform to support other stakeholders who wish to manage the customer relationship themselves as well as business-to-consumer (B2C) capabilities for customer management by Electrify America. Where possible, agreements will be created with the owners/operators of other charging networks to simplify and improve ZEV charging for all drivers on multiple networks. Both Electrify America and available state and federal signage resources will

be used to the extent possible to further resolve consumer lack of awareness of existing charging infrastructure (Figure 4) [Singer 2016].

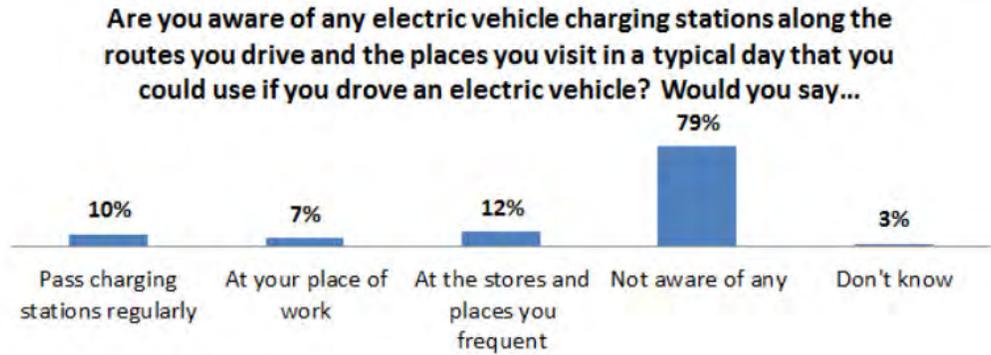


FIGURE 4: CONSUMER VIEWS ON PLUG-IN ELECTRIC VEHICLES

2.2.1.2. Investment selection methodology

The ZEV infrastructure investment plan includes two key components: (1) community-based charging stations in 11 major metropolitan areas and (2) a high-speed nationwide network to facilitate highway travel between major metropolitan areas and across the country with higher and faster DC charging power to reduce waiting times. For both components, the following three factors were used to determine the required investment: (a) locations with the highest ZEV demand; (b) the gap between the existing charging infrastructure supply and projected demand at each location; and (c) the charger count and type needed to meet the excess charging demand at each location. By adopting this methodology, Electrify America is well positioned to install charging stations where they are most needed, as Appendix C requires, and most likely to be used. Note that, throughout this process, Electrify America utilized academic, government, and industry reports on ZEV charging infrastructure investment, advertising, and projections to develop this plan. Electrify America used peer-reviewed reports to the extent they were available. The reports reviewed are reflected in the sources listed at the conclusion of this report.

2.2.1.2.1. Community-based local network investment selection methodology

The first step in the selection process was to determine the list of metropolitan areas to prioritize for investment. An overview of the process can be seen in Figure 5 and comprised two key steps:

1. Narrowing down the list from approximately 100 metropolitan areas to 25 based on key demographic factors and current hybrid and forecast ZEV sales.

- Further prioritizing this list to 11 metropolitan areas based on the extent of local government interest, incentives, and regulation; local awareness of ZEVs; feedback from utilities and other stakeholders; and quality of fit with the long-distance highway plan.

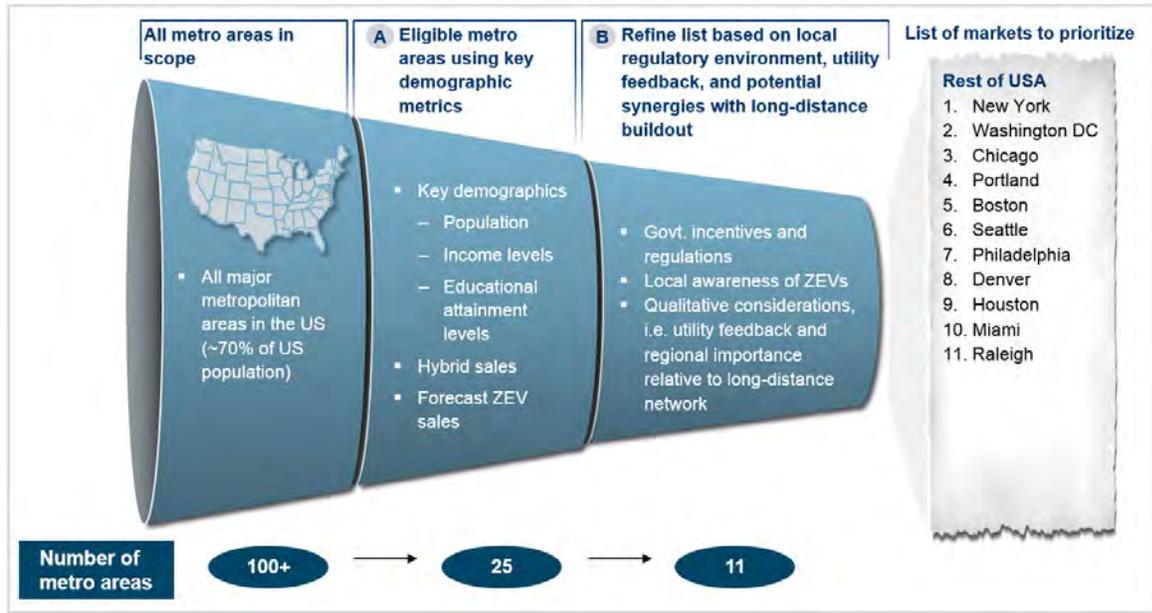


FIGURE 5: OVERVIEW OF METROPOLITAN AREA SELECTION METHODOLOGY

By adopting the methodology shown in Figure 5, a shortlist of priority National metros was developed: New York City, Washington D.C., Chicago, Portland, Boston, Seattle, Philadelphia, Denver, Houston, Miami, and Raleigh. Electrify America notes that it was not able to select every metropolitan area that submitted a strong proposal, but it intends to expand its Community Charging investments into metro areas with supportive government policies and strong utility integration in future investment cycles, and Electrify America will continue to refine its methodology as the industry develops.

Within each priority metro area identified, Electrify America calculated the gap between projected demand for charging power needed from future infrastructure to support projected higher EV market share and the power delivered from infrastructure today. Specifically, infrastructure demand outside the residence was estimated based on a calculation of the projected total ZEV vehicle miles traveled (VMT) in each of the metropolitan areas in 2020. ZEV VMT represents the anticipated ZEV drivers' commuting behavior and is the product of the average commute length [Kneebone and Holmes], the number of commuting vehicles, and the ZEV penetration rate [Navigant Research, 2016]. Calculated ZEV VMT (in miles) is converted to an expected energy demand using an average energy efficiency of 0.35 kWh/mile. This calculation generates the expected energy demand (in kWh) for charging infrastructure outside the residence within particular metropolitan areas.

Electrify America’s approximately \$40 million investment in local community-based charging is estimated to fill approximately 10-15% of the projected supply-demand gap in these metropolitan areas through the construction of 300+ stations built in the first 30-month investment cycle. Accordingly, Electrify America investment in infrastructure is only a starting point to closing these considerable charging power gaps; as such, other private and public investment will continue to be needed, especially from utilities who are increasingly acting to provide more charging infrastructure in their service areas.

2.2.1.2.2. Long-distance highway network investment selection methodology

In recent years, consensus around the need for a national network of extremely high speed ZEV charging equipment along our nation’s highways has been emerging. In 2015, Congress required the Department of Transportation to designate national electric vehicle charging corridors, and established an aspirational goal of deploying charging infrastructure along the nationwide network by 2020 [*FAST Act*]. In 2016, the Department of Energy and the Department of Transportation agreed to jointly develop a 2020 vision for that network incorporating DC fast charging at power levels up to 350 kW. And when the Department of Transportation designated specific EV charging corridors later that year, a coalition of 28 states, utilities, vehicle manufactures, and other stakeholders committed to help accelerate the deployment of electric vehicle charging infrastructure along the identified routes [*Laign*].

The comments, recommendations, and proposals submitted to Electrify America through the National Outreach Plan also supported investment in a nationwide network of high speed ZEV charging infrastructure along our nation’s highways. More than 100 comments and proposals called for investment in fast charging corridors, and approximately 20 specifically called for deploying a network with faster, higher-powered charging than is available today. Commenters – especially EV drivers – also emphasized the importance of placing stations in locations with sufficient amenities and proper signage.

Electrify America has designed a nationwide highway network to place high-speed charging stations along the long-distance routes with the highest estimated ZEV traffic as well as to link prioritized metro areas from the prior section in order to form a cohesive nationwide network. At a high level, ZEV traffic was estimated along every major route in the U.S., and, after taking into account existing charging infrastructure supply along those routes to assure that new investment supplements existing investment, the estimated ‘supply-demand gap’ for charging stations along each route was calculated using an approach similar to what was used to determine the metropolitan area charging supply-demand gap, but which relied on average annual daily traffic data from the Federal Highway Administration to establish demand. This allowed us to determine which routes have the highest need for new infrastructure investment.

Key sources of data used to complete this analysis include the following: ZEV penetration rates by census bureau statistical area (CBSA) [Navigant, 2016; Experian], number of long-distance trips between metro areas from the FHWA Traveler Analysis Framework [Federal Highway Administration framework], and existing charging infrastructure levels [EERE]. An overview of targeted highways and estimated station counts is shown in Table 3.

Prioritized highway	Estimated station count
I-95	15+
I-75	10+
I-10	10+
I-80	10+
I-5	10+
I-90	5-9
I-70	5-9
I-40	5-9
I-15	5-9
I-30	5-9
I-85	5-9
I-44	5-9
I-35	5-9
I-65	5-9
I-45	2-4
I-91	2-4
I-84	2-4
I-25	2-4
I-81	2-4
I-20	2-4
I-24	2-4
I-94	2-4
I-87	<2
I-71	<2
I-64	<2
I-17	<2
I-39	<2
I-8	<2
I-26	<2
US-3	<2
US-1	<2
I-12	<2
I-295	<2
I-76	<2
I-55	<2

TABLE 3: OVERVIEW OF NATIONAL HIGHWAYS TARGETED FOR INVESTMENT IN FIRST 30-MONTH CYCLE (ONLY INCLUDING STATIONS EXPECTED TO BE COMPLETED IN FIRST CYCLE)

As described more fully in 2.2.1.3 below, in order to obtain rights to a particular charging site, Electrify America must identify suitable site locations and complete the process of negotiating with landowners, utilities, and other entities before any chargers can be installed.

Given the uncertainty inherent in this process, and the risks of premature disclosure of Electrify America’s site selection, Electrify America will provide further detail concerning the location and type of charging infrastructure as those plans are finalized. At this time, Electrify America does not know the precise location of the chargers it will be installing during the first 30-month cycle.

2.2.1.3. Specific description of investments

This section provides an overview of: (1) the quantities and locations of charging stations, (2) the chargers and type/number of connectors per station, (3) the informational basis for calculating charger investment costs, and (4) Electrify America’s plan to invest in the existing ZEV infrastructure industry’s capabilities and expertise.

2.2.1.3.1. COMMUNITY-BASED LOCAL NETWORK

Five priority use cases will be supported in the local community-based network in the first investment cycle. In future investment cycles, Electrify America may increase the number of use cases supported. An overview of the major use cases and how charging behavior varies between them is shown in Figure 6.



FIGURE 6: OVERVIEW OF MAJOR USE CASES TO BE PRIORITIZED IN FIRST CYCLE

At a high level, use cases with longer expected dwell times (e.g., workplace and multi-family homes), will have a higher ratio of L2 chargers, while use cases with shorter dwell times (e.g., commercial/retail) will have a higher ratio of DC 50+ kW chargers. This is consistent with expected driver behavior across the use cases, where, for example, drivers park their cars at home or work for 6-8+ hours at a time (allowing sufficient time for ~200 miles of charge to be added to the battery with an L2 charger), while drivers park at grocery stores or malls for considerably shorter periods of time (2-4 hours, where a 50 kW DCFC would be needed to add 200 miles of charge in that time period) [Chehab 2017].

Across use cases, a majority of spend will be devoted to public use cases (commercial/retail centers, community depots, and municipal parking lots/garages), approximately one-third to workplaces, and the remainder to multi-family dwellings. However, considerations within individual metros, like corporate campus and multi-unit dwelling density, could alter these ratios. In addition to these use cases, there are other programs/technologies under consideration, including targeted battery storage.

2.2.1.3.2. LONG-DISTANCE HIGHWAY NETWORK

Electrify America will build a long distance high speed highway network consisting of charging stations along high-traffic corridors between metropolitan areas, with an initial target of approximately 240 highway sites installed or under development by the end of the first cycle, more than 150 of which are expected to be completed. Sites will be, on average, about 66 miles apart, with no more than 120 miles between stations, meaning many shorter range ZEVs available today will be able to use this network. An overview of the highway network is shown in Table 3 above.

Electrify America's goal is to locate the charging sites within easy access of the interstate in locations that provide ample parking spaces for charging, ensure customer safety, and offer access to retail and service establishments like restaurants, coffee houses, and retail and convenience stores to provide customers with options during the typical charging time period of up to 30 minutes. The average station will be able to charge five vehicles at once, with station capacity ranging from no less than four and up to ten vehicles charging at a time.

The chargers deployed will represent state-of-the-art technology with the fastest charging speeds available. Stations will focus on 150 kW and some 320 kW DC fast chargers, which will also be capable of charging 50 kW capable vehicles at a lower power level. Most currently installed non-proprietary DC fast chargers are in the 25-50 kW range; a 50 kW charger can supply about 3 miles of ZEV range per minute of charging. Electrify America's 150 kW DC fast charging stations will provide about 9 miles of ZEV range per minute of charging, while 320 kW DC fast chargers will provide about 19 miles of range per minute. These faster charging

speeds are necessary to refuel the next generation of larger battery capacity ZEVs with all-electric ranges above 200 miles.

Precise address locations or GPS coordinates for these highway corridor stations will be developed during our site identification, validation, and acquisition stage that begins in the second quarter 2017. These target locations will be considered confidential business information to ensure optimal lease terms during site negotiations.

2.2.1.3.3. INFRASTRUCTURE INVESTMENT TIMELINE AND MILESTONES

The estimated development schedules for both the highway and local community networks are shown in Table 4. The end-to-end process from site development is a lengthy process with multiple steps and includes the following:

- Ordering equipment
- Development of new property leads
- Signing of lease agreements (or, where appropriate, purchasing property)
- Development of permitting/pre-construction packages
- Filing permits
- Warehousing equipment and Quality Assurance/Quality Control
- Permit approval
- Site preparation
- Equipment delivery to site
- Completion of site construction
- Landscaping
- Utility connection to the grid/inspection and any additional utility preparation including new transformers or upgraded substations
- Commissioning

The length of time needed to complete each step can vary considerably across use cases as well as across geographies (e.g., permit approval timelines can differ substantially from city-to-city and state-to-state). Electrify America has already begun engaging key stakeholders and partners to begin implementation planning. As these relationships develop further, Electrify America will be able to start identifying and acquiring specific locations for chargers.

Development of the first metro community station is expected to begin in Q2 2017, with the first local community and highway charging stations expected to be operational in Q3 2017 and Q2 2018, respectively. The process is expected to take longer for the highway charging stations due to the higher charging power hardware and more complex technical, real estate, and utility requirements involved. Interim milestones for each six month period for the pace of

network construction for both the highway and local community charging stations are shown in Table 4.

	Community-based local network			Long-distance highway network		
	Pre-site selection	In development	Operational	Pre-site selection	In development	Operational
Q2 2017	200-250	50-100	0	100-150	0-50	0
Q4 2017	100-150	150-200	50-100	50-100	50-100	0
Q2 2018	0	150-200	100-150	0-50	150+	0-50
Q4 2018	0	0-50	250-300	0	100-150	0-50
Q2 2019	0	0	300+	0	0-50	150+

TABLE 4: INTERIM INFRASTRUCTURE DEVELOPMENT MILESTONES (NUMBER OF STATIONS) DURING THE FIRST INVESTMENT CYCLE

2.2.1.3.4. CHARGING STATION COST ESTIMATES

To derive an accurate budget estimate for the cost to construct the community-based and long distance charging infrastructure proposed for cycle 1, including all land acquisition, equipment procurement, installation, network and maintenance costs, Electrify America relied on several sources. Published cost estimates, such as those published by the National Academy of Sciences, and competitive benchmarking reports, were reviewed [NAS, 2015]. Electrify America drew on previous experience and expertise with currently available charging hardware, network, installation and operating costs, as well as typical vendor costs in procuring sites. Finally, Electrify America engaged in robust dialogue with industry partners (described in section 2.2.1.3.5.) to understand the costs associated with building stations equipped with a new generation of 150 kW and 320 kW DC fast chargers.

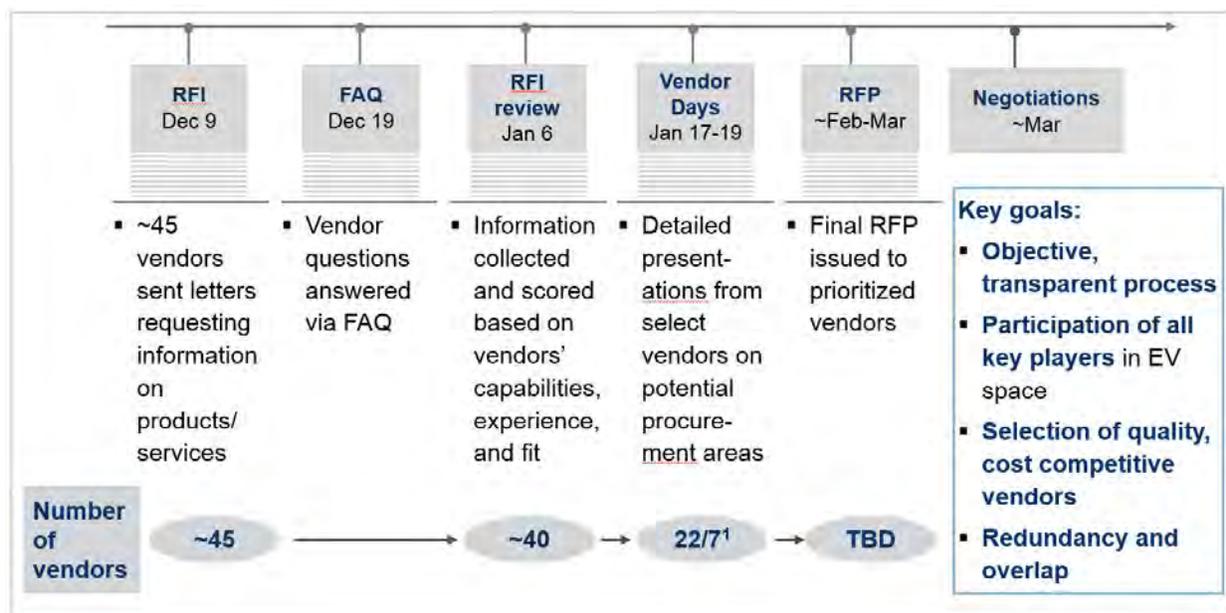
2.2.1.3.5. INDUSTRY PARTNERSHIP ENGAGEMENT

Electrify America will need the help of an extensive group of experienced suppliers in the charging infrastructure space to plan and implement this community and highway network, most of which are expected to be U.S. based firms. As such, Electrify America’s \$250M investment in infrastructure implementation and maintenance across the nation, and \$120M investment in California, is expected to create opportunity for the existing American charging industry and employment in many American communities.

Electrify America has made significant progress in selecting vendors to meet these ambitious infrastructure build-out schedules. To date, Electrify America has solicited cost and technical information through an Request for Information (RFI), it has met with a large number of vendors across the charging space in a series of “Vendor Days,” it has received numerous vender proposals through its National Outreach Plan Process, it has prioritized several vendors across key procurement categories from site identification and acquisition to site maintenance,

and it has initiated a series of Requests for Proposals (RFPs). Note that the RFI process is not limiting in that potential partners who did not participate in the RFI process may still be a part of the implementation moving forward when appropriate, and Electrify America will welcome such participation. An overview of the process is shown in Figure 7. Key steps included the following:

- **RFI issuance (Dec. 9th):** 45+ vendors across the ZEV space (80+ percent U.S. based) sent letters requesting information (capabilities across the value chain, relevant experiences, and product/service offerings).
- **FAQ issuance (Dec. 19th):** Vendor questions answered to clarify RFI where needed.
- **RFI response review (Jan. 6th):** Information collected and scored based on vendors' capabilities, experience, and fit with Electrify America's overall mission. This process followed a rigorous, objective scoring methodology to best identify vendors positioned to help Electrify America.
- **Vendor Days (Jan. 17th-19th):** Detailed presentations were given by approximately 30 vendors across procurement categories to provide qualitative highlights of their capabilities and future plans that Electrify America should consider in its forward planning.
- **RFP issuance (March onwards):** For priority procurement areas, RFPs began to be issued March 9, beginning with one for site identification, validation and acquisition. The highway network hardware RFP was also issued in March 2017.



¹ 22 standup meetings during Vendor Days; 7 additional conference calls outside of that.

FIGURE 7: OVERVIEW OF RFI/RFP PROCESS

2.2.1.4. Maintenance plan for ZEV infrastructure

Electrify America will issue RFPs to external vendors to ensure that periodic maintenance will be available across the network for 10 years after the Effective Date to enable the hardware to remain operational over the entire 10 year period. Furthermore, contract terms negotiated after completion of the RFP process will ensure that the charging equipment is marked with a toll-free customer service hotline available 24/7 and that this number will be answered by a live operator if any maintenance issue should arise. Additionally, service response time metrics will be tracked.

2.2.1.5. Interoperability and open access

In order to maximize public access to its charging network, infrastructure built by Electrify America will have the ability to service plug-in ZEVs using a mix of non-proprietary connectors, which can be built by multiple suppliers to a commonly developed specification and can charge electric vehicles produced by multiple automakers. Level 2 AC charging will utilize universally accepted J1772 connectors, while every DC fast charging station will utilize both non-proprietary charging standards (CCS and CHAdeMO) in the first cycle in order to maximize access.

Through the National Outreach Plan process conducted during the development of this plan, Electrify America confirmed that the field of vehicle charging is rapidly evolving, especially regarding charging speed and non-proprietary connectors and protocols. We will continue to evaluate which chargers and non-proprietary connectors should be deployed as the technology and industry evolves.

Electrify America will also support open protocols including Open Charge Point Protocol (OCPP) that allow more standardized communication between different chargers and networks. Electrify America will also work to maintain OCPP compliance and other measures to help maximize interoperability, a term that describes the ease of communication between the charger and the network it is on. A highly interoperable charger network is one that is able to communicate easily with other chargers and networks, much like cellphones that have roaming capabilities today or highway toll transponders that work across multiple toll systems.

Infrastructure will also have the ability to accept multiple payment methods (e.g., subscriptions, mobile pay, RFID, credit cards, and “Plug-and-Charge” standardized in IEC/ISO 15118) to simplify usage as much as possible across a range of buyers. This will be consistent with the Federal Highway Administration’s recent call for a consistent and convenient charging experience along charging corridors, especially with regard to payment methods [FHWA, 2017]. In particular, a key part of the business model will be providing true ‘pay-as-you-go’ access to

potential customers, who will be able to use a credit card or other potential payment methods to recharge their vehicles without having a pre-existing relationship with a charging network operator. Note that there is also a disproportionate focus on publicly-accessible infrastructure (e.g., highway chargers, community depots, municipal parking lots and garages) to maximize access as well as promote exposure as broadly as possible.

Through the support of multiple charging standards, the ability to accept multiple payment methods, and a strong focus on publicly-accessible infrastructure, Electrify America will be building a highly interoperable network that provides access to as many consumers as possible. This is consistent with Electrify America's vision to promote 'universal access' as much as possible, well beyond the standards of many current players in the industry.

2.2.2. Public education

2.2.2.1. Guiding principles

The National Academy of Sciences' landmark 2013 report, *Overcoming Barriers to Electric Vehicle Deployment*, found that "...most potential PEV customers have little knowledge of PEVs and almost no experience with them. Lack of familiarity with the vehicles and their operation and maintenance creates a substantial barrier to widespread PEV deployment." The principles of the education campaigns, which can help to address the above finding, begin with an understanding of the current adoption rates of ZEVs.

2.2.2.2. Investment selection methodology

Total spend allocation within the first 30-month investment cycle for education will be \$43-50 million across the entire United States (with at least \$25 million of this spend outside of California). This spend will be allocated across multiple media channels to reach consumers at critical touchpoints based on their consumption habits, as shown in Figure 8.

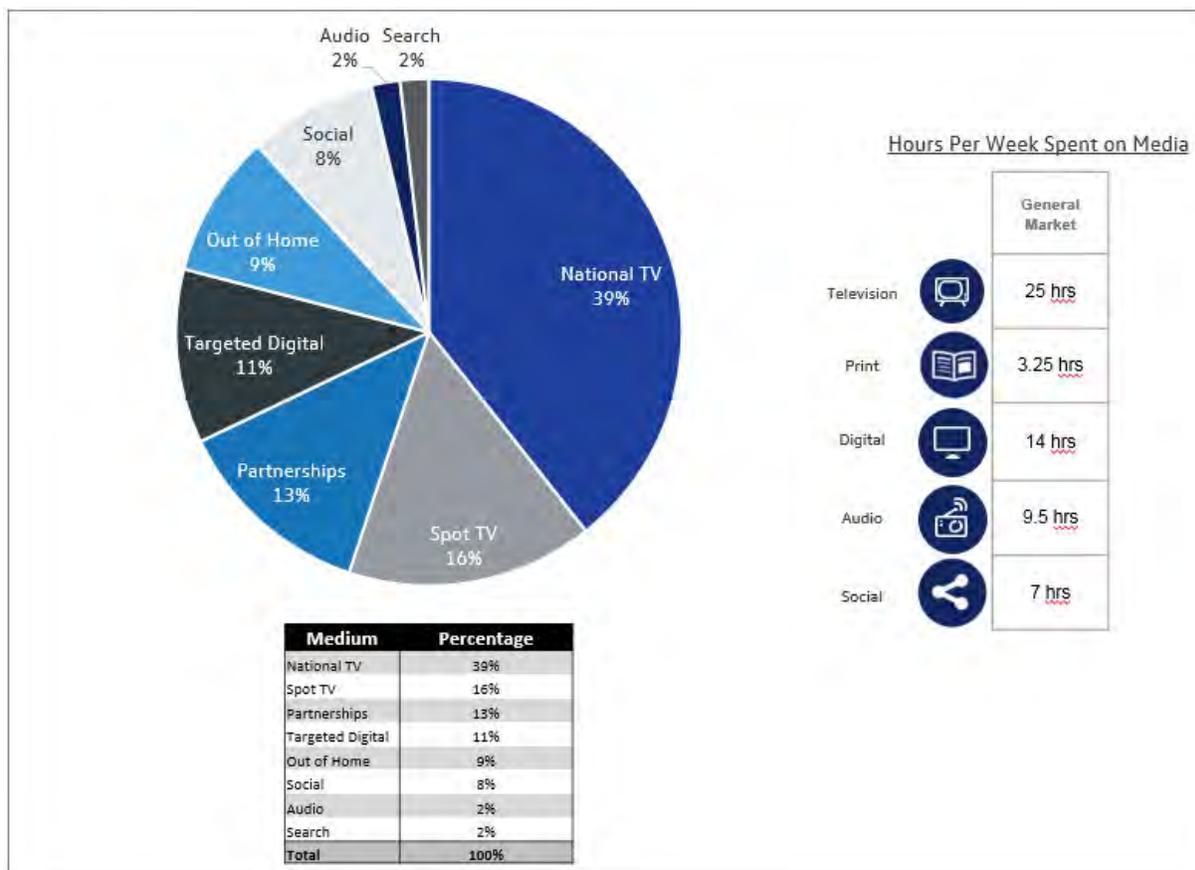


FIGURE 8: OVERVIEW OF GENERAL MEDIA CONSUMPTION HABITS

2.2.2.3. Specific description of investments

Based on segmentation analysis and consumer media consumption habits, we have developed a comprehensive plan to deliver messaging about both ZEV benefits and overcoming barriers to ZEV adoption. Media will be used to put ZEVs on the “big stage” in order to help consumers see that ZEVs not only meet the majority of their needs today, but also, as infrastructure networks grow further, adoption barriers continue to be reduced.

A preliminary illustration of this 360 degree messaging is summarized in Figure 9. A more detailed view of this is still under development by the creative and media agencies, but the messaging will be split across traditional advertising channels like TV, targeted digital advertising channels including digital radio, social media, websites, as well as partnerships with various platforms to further spread messaging.



FIGURE 9: PRELIMINARY MULTI-CHANNEL APPROACH TO REACH CONSUMERS AT CRITICAL TOUCHPOINTS⁴

In order to quickly maximize messaging presence, a coordinated National/Local media strategy was developed. This allows for a quick ramp-up across the country, followed by

⁴ The experiential programs, if considered access or exposure activities under Appendix C, are subject to written pre-approval by EPA before they may be considered creditable costs.

sustained messaging in top high potential ZEV markets. An overview of these planning principles can be seen in Figure 10.

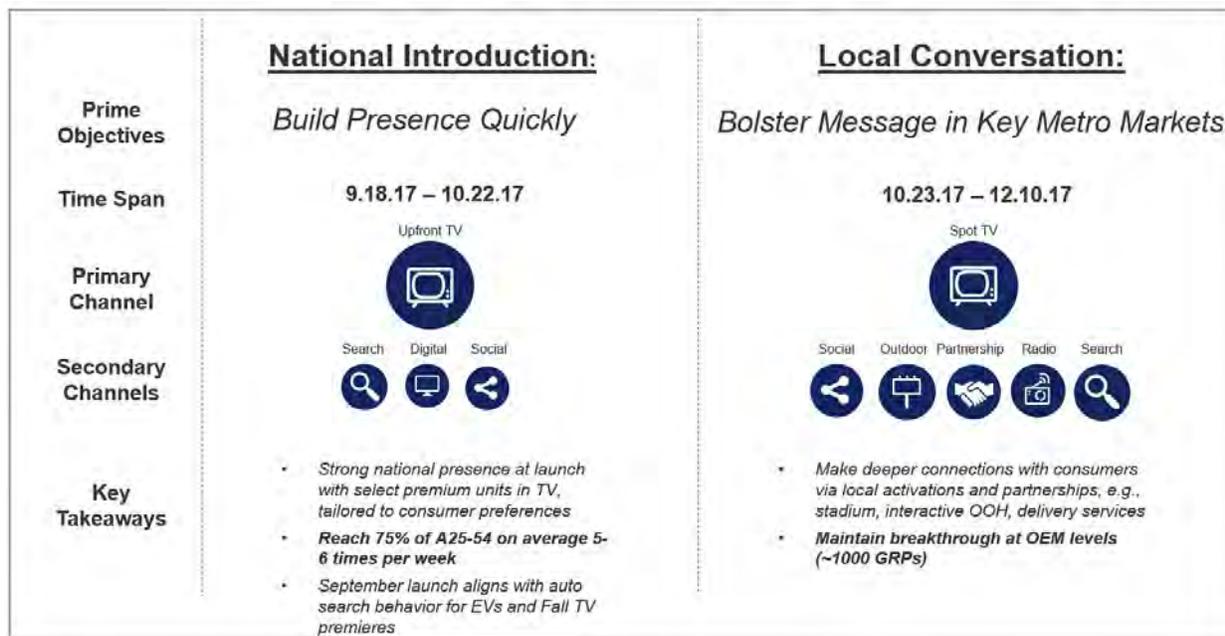


FIGURE 10: PRELIMINARY NATIONAL AND LOCAL MEDIA PLANNING PRINCIPLES

2.2.2.4. Public education timeline and milestones

Electrify America’s creative agency continues to refine the creative content based on the segmentation analysis (highlighting the most impactful benefits of ZEVs), and creative concepts should be finalized in the next month, followed by finalization of media planning by summer.

2.2.3. Public access initiatives

Experiential initiatives like ride-and-drive events are being planned to help increase ZEV access and exposure for as many Americans as possible. The purpose of these activities is to increase the public’s awareness of and access to ZEVs and allow them to experience ZEVs without having to purchase a vehicle. Options here are currently being explored, and updates will be provided in future reporting cycles. Electrify America will seek written approval for its access program from EPA before making these investments, as required by Appendix C.

2.3. Anticipated Creditable Costs

Creditable costs for the first 30-month investment cycle have been identified across the twelve categories specified in §2.5.3 of Appendix C. The creditable costs reflect Electrify America's current perspective and best estimate of anticipated costs, but are subject to change as the business continues to develop (e.g., vendors identified, full organization hired, office lease signed) and actual costs are incurred. Which costs incurred by Electrify America are creditable costs is determined by the Final Creditable Cost Guidance approved by EPA in March 2017.

Specific creditable costs that fall within the taxes and governmental fees line item have not yet been identified and will be detailed in future Annual ZEV Investment Reports. Services provided through SLAs (Service Level Agreements) between Electrify America and other Volkswagen group companies include finance, tax, treasury, human resources, legal, and purchasing. As the vast majority of creditable costs are driven by goods and services obtained pursuant to third-party contracts, additional detail has been provided for major investment categories (i.e., Infrastructure, Green City, Education/Access, Outreach, other Overhead).

2.4. Advancement of ZEV technology in the United States

The activities described in the National ZEV Investment Plan are designed to promote and support the increased use of ZEVs in a number of ways:

- The ZEV infrastructure plan is designed to **increase the use of ZEVs in the US**. The support of multiple use cases in the local community network and the spatial coverage of the highway network are intended to reduce range anxiety, which is cited as a primary barrier to ZEV adoption by prospective buyers.
- The gap between the current existing energy supplied by charging infrastructure and the projected demand calculated in the ZEV infrastructure investment selection methodology (section 2.2.1.2) illustrates **there is a clearly existing present and projected need for the additional ZEV charging infrastructure** that the Electrify America network will help satisfy.
- Electrify America will build charging stations in the areas of highest ZEV demand (section 2.2.1.2), where there is the **highest likelihood of utilization and provides accessibility/availability where most needed and most likely to be regularly used**.

- The ZEV infrastructure is intended for, and compatible with ZEV technologies **that are not limited to ones supported by VW group brands. Instead, the goal is to promote universal access.** In particular, multiple technologies (L2, DCFC) and **multiple non-proprietary connectors and charging protocols** (e.g., CHAdeMO, CCS) will be offered to maximize public access to Electrify America’s charging infrastructure.
- The combination of the above factors will help to **support and/or advance the market penetration of ZEVs in the US and help to build positive awareness of ZEVs.**

2.5. Certification of activities

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

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

2.6. Supporting literature

In developing the methodology for the National ZEV Investment Plan, a number of sources from peer-reviewed academic literature, government, and industry were used. Important data and information from these sources was used to ensure that, in developing our plan, the investments have the highest likelihood of increasing the use of ZEVs in the U.S., address a clearly existing need, have a high likelihood of utilization and provide accessibility where most needed, support the market penetration of ZEVs, and help build positive awareness for ZEVs. For example, in developing our local community-based charger plan, a number of sources providing information on major U.S. metropolitan areas were used to determine the suitability of investment needed across metro areas, allowing us to select metros with the most significant need for investment in ZEV infrastructure.

A selection of key sources used is included below:

1. Alternative Fuels Corridors. Advancing America's 21st century transportation network. Jan. 2017. https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/
2. Carson, Barney (2016). DC Fast Charging Infrastructure: 50 kW to 350 kW. Idaho National Laboratory. https://avt.inl.gov/sites/default/files/pdf/presentations/INL_DCFastChargerInfrastructure.pdf
3. California Center for Sustainable Energy (2013). California plug-in electric vehicle driver survey results.
4. Chehab, Nay (2017). Pump up the charge with extreme fast charging. Office of Energy Efficiency and Renewable Energy. Jan. 2017. <https://energy.gov/eere/articles/pump-charge-extreme-fast-charging>
5. Clark-Sutton, Kyle; Siddiki, Saba; Carley, Sanya; Wanner, Celeste; Rupp, John; and Graham, John D. (2016). Plug-in electric vehicle readiness: Rating cities in the United States. The Electricity Journal, 29, 1, 30-40.
6. Council of Economic Advisors (2009). Estimates of job creation from the American Recovery and Reinvestment Act of 2009. <https://obamawhitehouse.archives.gov/administration/eop/cea/Estimate-of-Job-Creation/>
7. Dale Kardos and Associates. EV incentives by state Q2 2016 update.
8. Edison Electric Institute (EEI) (2016). EV market assessment and survey narrative summary.
9. EERE (Office of Energy Efficiency and Renewable Energy). Alternative Fuel Data Center. U.S. Department of Energy. <http://www.afdc.energy.gov/>
10. Esri street data. Esri GIS mapping software.
11. Experian (estimated 2020 total vehicles by CBSA). <http://www.experian.com/automotive/auto-vehicle-data.html>
12. Factiva press search or market reports on ZEV incentives / regulations. <http://global.factiva.com>
13. "FAST Act" or the "Fixing America's Surface Transportation Act." Public Law 114-94, enacted December 4, 2015.

14. Federal Highway Administration (FHWA) (2017). National Electric Vehicle Charging and Hydrogen, Propane, and Natural Gas Fueling Corridors. https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/resources/section_1413_report/fhwahep170.pdf
15. FHWA (annual miles driven), <https://www.fhwa.dot.gov/ohim/onh00/bar8.htm>
16. FHWA Traveler Analysis Framework (high traffic long-distance routes between CBSAs), <https://www.fhwa.dot.gov/policyinformation/analysisframework/01.cfm>
17. Friedman, David (2017). Public Plug-in Electric Vehicle Charging Infrastructure Guiding Principles. U.S. Department of Energy. <https://energy.gov/eere/articles/public-plug-electric-vehicle-charging-infrastructure-guiding-principles>
18. Idaho National Laboratory (2015). Plugged in: How Americans Charge their Electric Vehicles – Findings from the Largest Plug-in Electric Vehicle Infrastructure Demonstration in the World. <https://avt.inl.gov/sites/default/files/pdf/arra/SummaryReport.pdf>
19. Idaho National Laboratory (2015b). DC Fast Charger Usage in the Pacific Northwest. https://avt.inl.gov/sites/default/files/pdf/evse/INL_WCEH_DCFCUsage.pdf
20. IHS Markit (2016). “Alternative powertrain forecasts: USA market framework factors impacting electrification.” Prepared for VW AG – K – GVS – V3.
21. Kneebone, Elizabeth, & Holmes, Natalie (2015). The growing distance between people and jobs in metropolitan America. Washington D.C.: Brookings Institute, Metropolitan Policy Program.
22. Kwan, Irene; Lutsey, Nic; Slowik, Peter; & Lingzhi, Jin (2016). Identifying the leading regional electric vehicle markets in the United States. International Council on Clean Transportation, working paper 2016-20.
23. Laign, Keith. “Feds Move to Boost Electric Car Use.” *Detroit News*. Nov. 3, 2016.
24. Lutsey, Nic; Searle, Stephanie; Chambliss, Sarah; & Bandivadekar, Anup (2015). Assessment of leading electric vehicle promotion activities in United States cities. International Council on Clean Transportation, white paper.

25. Melaina, Marc, & Helwig, Michael (2014). California statewide plug-in electric vehicle infrastructure assessment. Golden: National Renewable Energy Laboratory, Alternative and renewable fuel and vehicle technology program final project report.
26. Morsy, Salim (2016). Peak demand charges and DC fast charging – cost structures and commercial viability. Bloomberg New Energy Finance.
27. National Academy of Sciences (2015). Overcoming Barriers to Deployment of Plug-in Electric Vehicles.
28. National Academy of Sciences (2013). Overcoming Barriers to Electric Vehicle Deployment – Interim Report.
29. Neubauer, J.S. and Wood, E. (2015). Will your Battery Survive a World with Fast Chargers? <http://www.nrel.gov/docs/fy15osti/63531.pdf>
30. Plugshare (existing charger locations and counts), <http://www.plugshare.com/>
31. Searle, Stephanie; Pavlenko, Nikita; & Lutsey, Nic (2016). Leading edge of electric vehicle market development in the United States: an analysis of California cities. International Council on Clean Transportation, white paper.
32. Shepard, Scott, & Jerram, Lisa (2016). Electric vehicle geographic forecasts – battery and plug-in hybrid electric vehicle sales and populations in North America. Boulder: Navigant Research.
33. Shepard, Scott; Jerram, Lisa; Gartner, John; & Brown, David (2016b). Distribution of BEVs by Range and Class, United States 2016-2025. Boulder: Navigant Research.
34. Singer, Mark (2016). Consumer Views on Plug-In Electric Vehicles, National Benchmark Report. National Renewable Energy Laboratory. http://www.afdc.energy.gov/uploads/publication/consumer_views_pev_benchmark_2nd_ed.pdf
35. Strategic Vision (2016). New Vehicle Experience Survey.
36. Supercharge.info (location of fast charger stations), <https://supercharge.info/>
37. US Census Bureau (population statistics), <https://www.census.gov/>

38. US Department of Energy (2015). Workplace Charging Challenge – mid-program review: Employees Plug-in. https://energy.gov/sites/prod/files/2015/12/f27/105313-5400-BR-0-EERE%20Charging%20Challenge-FINAL_0.pdf
39. US Energy Information Administration (nationwide electricity prices), <http://www.eia.gov/electricity/data/browser/>
40. US Department of Transportation (2014). “GROW AMERICA Act: Creating a pathway to transportation careers.” https://www.transportation.gov/sites/dot.gov/files/docs/Workforce_DOT_Reuth_FINAL_2014.pdf
41. US Department of Transportation (2003). NHTS 2001 Highlights Report. Washington D.C.: Bureau of Transportation Statistics.
42. US Department of Transportation (2011). Summary of travel trends – 2009 national household travel survey. Washington D.C.: Federal Highway Administration.
43. US Utility Rate Database (URDB; utility rate plan information), http://en.openei.org/wiki/Utility_Rate_Database
44. Wood, E. et al. (2017). Regional Charging Infrastructure for Plug-in Electric Vehicles: A case study of Massachusetts. <http://www.nrel.gov/docs/fy17osti/67436.pdf>

2.7. ZEV charging infrastructure glossary

AC Charging

The majority of ZEV charging is done with AC voltage at Level 1 (120 volts or normal household current) or Level 2 (240 volts or an electric dryer power equivalent). AC charging is typically more cost effective for the equipment and installation and takes advantage of longer dwell times to provide lower power to a ZEV over a longer period of time. AC charging is an excellent solution for residential, workplace, multi-unit dwelling and other longer-term parking situations like hotels and municipal or airport parking garages.

DC Fast Charging

Direct current charging for electric vehicles allows for higher charging speeds, as DC current can be supplied directly to the electric vehicle's battery at power levels normally higher than AC charging. The higher the DC power supplied, the faster the electric vehicle can be charged, provided the vehicle is designed to handle such power. A common DC power is 50 kW, which is the upper limit of all the current vehicles which support SAE CCS today, while the CHAdeMO DC standard will accept up to 62.5 kW power. The proprietary Tesla Supercharger technology can charge up to 140 kW and is currently the most powerful charging available. By 2019, it is expected that 150+ kW DC fast charging will be available on a number of vehicles, and speeds of up to 320 kW (at 350 amps of current at 200V to 920V power source) will be available on a limited basis. To illustrate the charging power difference between Level 2 AC and DC fast charging, a Level 2 7.2 kW AC charger will deliver about 27 miles of ZEV range per hour of charging, whereas a 50 kW DC fast charger will deliver well over 100 miles of range per hour.

CHAdeMO

A DC fast charging standard first developed in Japan for the Japanese market and capable in the U.S. of charging the Nissan Leaf, Kia Soul and Mitsubishi iMiEV.

CCS (Combined Charging System)

CCS is a DC fast charging protocol that is SAE certified and featured on vehicles produced by GM, BMW, Volkswagen Group, Ford and a number of other automakers headquartered in Europe and the United States. The "combined" term designates the CCS capability to incorporate the level 2 (J1772 standard) plug and DC fast charging connector into the same larger plug.

Dwell Time

The term for the amount of time a ZEV is parked in a location. The longer the "dwell" time, the longer it is parked.

Higher Power DC Fast Charging

New technology developments will feature 150 kW to 320 kW of charging power, capable of adding electricity to a new generation of longer-range ZEVs at a rate of between 9 and 19 miles per minute. The new chargers designed under CCS protocol will

be available in 2018, utilizing primarily “kiosk” designs, meaning the power electronics and other important components are housed outside the charger itself in an easier-to-service box in a separate location. Not only will these new chargers deliver higher charging power, the 350 amps of current they use will necessitate the use of liquid-cooled charging cables to present an easier-to-handle, thinner cable with which customers will be able to charge their vehicles. The CHAdeMO Association is also working to complete a 150 kW charging protocol by 2017.

OCCP

The Open Charge Alliance (OCA) is a global consortium of public and private electric vehicle (EV) infrastructure leaders that have come together to promote open standards. OCCP is the protocol they have developed to provide powerful, open, and interoperable communication between the different ZEV charging infrastructure companies, hardware and network.

Plug-and-charge

Plug-and-charge is part of the latest revision of the CCS combo standard, featuring the IEC/ISO 15118 standard which prescribes the means by which a charger and network can identify and authenticate a specific vehicle to allow for a charging session automatically, by simply “plugging in”, without the need for supplemental membership cards or fobs.

Proprietary/Non-Proprietary Charging Connector and Protocol

A non-proprietary connector is not privately-owned or controlled and is thus easily available as a standard and does not require extensive development to be ready for application. Both CHAdeMO and CCS combo are non-proprietary DC fast charging protocols. A proprietary charging connector is a connector and charging network that is exclusively accessible to one brand of vehicle or type of user.

Zero Emission Vehicle (ZEV)

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

1. An on-road passenger car or light duty vehicle, light duty truck, medium duty vehicle, or heavy duty vehicle that produces zero exhaust emissions of all of the following pollutants: non-methane organic gases, carbon monoxide, particulate matter, carbon dioxide, methane, formaldehyde, oxides of nitrogen, or nitrous oxide, including, but not limited to, battery electric vehicles (“BEV”) and fuel cell vehicles (“FEV”);
2. An on-road plug-in hybrid electric vehicle (“PHEV”) with zero emission range greater than 35 miles as measured on the federal Urban Dynamometer Driving Schedule (“UDDS”) in the case of passenger cars, light duty vehicles and light duty trucks, and 10 miles as measured on the federal UDDS in the case of medium- and heavy-duty vehicles; or
3. An on-road heavy-duty vehicle with an electric powered takeoff.

ZEVs do not include: zero emission off-road equipment and vehicles; zero emission light rail; additions to transit bus fleets utilizing existing catenary electric power; or any vehicle not capable of being licensed for use on public roads.