

**VOLKSWAGEN'S EMISSIONS CHEATING  
ALLEGATIONS: INITIAL QUESTIONS**

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON OVERSIGHT AND  
INVESTIGATIONS  
OF THE  
COMMITTEE ON ENERGY AND  
COMMERCE  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

OCTOBER 8, 2015

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<sup>1</sup>Mr. Brooks did not make an oral statement for the record.

<sup>2</sup>Mr. Grundler and Mr. Brooks submitted a joint written statement for the record.

<sup>3</sup>The Environmental Protection Agency answered questions submitted to Mr. Grundler and Mr. Brooks.



## **VOLKSWAGEN'S EMISSIONS CHEATING ALLEGATIONS: INITIAL QUESTIONS**

**THURSDAY, OCTOBER 8, 2015**

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,  
COMMITTEE ON ENERGY AND COMMERCE,  
*Washington, DC.*

The subcommittee met, pursuant to call, at 10:01 a.m., in room 2123 Rayburn House Office Building, Hon. Tim Murphy (chairman of the subcommittee) presiding.

Members present: Representatives Murphy, McKinley, Barton, Burgess, Blackburn, Griffith, Bucshon, Flores, Brooks, Mullin, Collins, Upton (ex officio), DeGette, Schakowsky, Castor, Tonko, Yarmuth, Clarke, Kennedy, Green, Welch, and Pallone (ex officio).

Staff present: Gary Andres, Staff Director; Sean Bonyun, Communications Director; Leighton Brown, Press Assistant; Rebecca Card, Assistant Press Secretary; Karen Christian, General Counsel; James Decker, Policy Coordinator, Commerce, Manufacturing, and Trade; Andy Duberstein, Deputy Press Secretary; Brittany Havens, Legislative Associate, Oversight; Ben Liebman, Counsel, Energy and Power; Paul Nagle, Chief Counsel, Commerce, Manufacturing, and Trade; John Ohly, Professional Staff Member, Oversight and Investigations; Tim Pataki, Professional Staff Member; Mark Ratner, Policy Advisor to the Chairman; Chris Santini, Policy Coordinator, Oversight and Investigations; Dan Schneider, Press Secretary; Peter Spencer, Professional Staff Member, Oversight and Investigations; Dylan Vorbach, Staff Assistant; Greg Watson, Legislative Clerk; Christine Brennan, Democratic Press Secretary; Jeff Carroll, Democratic Staff Director; Tiffany Guarascio, Democratic Deputy Staff Director and Chief Health Advisor; Meredith Jones, Democratic Director of Communications, Member Services, and Outreach; Rick Kessler, Democratic Senior Advisor and Staff Director, Energy and Environment; Chris Knauer, Democratic Oversight Staff Director; Una Lee, Democratic Chief Oversight Counsel; Elizabeth Letter, Democratic Professional Staff Member; and Adam Lowenstein, Democratic Policy Analyst.

### **OPENING STATEMENT OF HON. TIM MURPHY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA**

Mr. MURPHY. Thank you, and good morning. We now convene this hearing of the Oversight and Investigations Subcommittee on Volkswagen Emissions Cheating Allegations: Initial Questions.

Let me start off by saying my first car was a Volkswagen. It was a 1976 Volkswagen Beetle. I learned a lot about cars and internal combustion engines. I could take that thing apart and put it back together, and it actually continued to work. I did all the maintenance myself, because the Beetle and the Volkswagen had a legacy as the people's car, to be people-friendly.

I loved that car, loved it a lot, not so much as to call it Brad, but I loved that car.

[Laughter.]

But I trusted the car to get me around, and I trusted that Volkswagen would continue to build a reliable car. That word "trust" alone, as you know, is a key factor in building customer loyalty, and that trust is what helped the Volkswagen because we believed this company looked out for customers first.

Then, just three weeks ago, car owners around the world were shocked to learn that Volkswagen AG, the world's largest automaker, admitted that it installed software for a number of years in millions of its diesel models that effectively defeated emissions controls during routine driving. This news followed the Environmental Protection Agency's public announcement on September 18th that it had sufficient evidence to support allegations that VW was cheating on its emissions tests.

As EPA reported at the time, when the cars were subject to emissions testing, the diesel vehicles switched into an operational mode designed specifically to pass the test and, then, switched back to a different mode during normal driving, a mode that emitted nitrogen oxides up to 10 and 40 times the Federal limits.

In the United States alone, some 482,000 Volkswagen and Audi models were affected by the cheating software. Worldwide the software was used in an estimated 11 million vehicles involving several VW lines.

In the wake of this apparently massive deception, the Energy and Commerce Committee opened a bipartisan investigation to get answers for the American public. This investigation will seek to understand the facts and circumstances surrounding the VW actions, the impact of its decisions, and related issues about emissions compliance generally.

At this morning's hearing we will receive testimony from the head of Volkswagen's American operations, Mr. Michael Horn, and from EPA officials tasked with ensuring the automobiles on American roads meet Federal environmental standards.

In addition, this subcommittee intends to pursue answers to critical initial questions concerning the troubling revelations about VW's actions, what happened, who was involved, and, most importantly, why.

Let me acknowledge that Mr. Horn is appearing before us voluntarily today, and I can say that I expect that he and the Volkswagen organization will continue to cooperate with our inquiry. This means providing documents and information to the committee as quickly as possible, including documents that have already been discussed publicly in connection with Volkswagen's various Board meetings in Germany.

As I said before, there are a number of core questions that we will begin to pursue today, both for Volkswagen and for the EPA,

most critically, what happened, who was involved, why were these actions taken. We also have a number of questions concerning the impact of these decisions on customers, family-owned dealerships, and the American public.

I hope today Mr. Horn can provide some important context for us and expand upon the facts he represents in his testimony. We will look to him to explain the current understanding of VW executives about what exactly was done to these engines and was it done to deliberately deceive Government regulations and regulators. And what is VW doing to fix the problem and make whole those who have been affected by the actions.

At some point prior to 2009, VW made a choice to move forward with engines that evidence now suggests were not compliant with U.S. emissions standards. The illegal software was initially deployed in the first generation of these diesel engines, which account for approximately 340,000 of the affected vehicles. However, despite apparent advancement in their emissions control systems in two future generations of these engines, the software remained in place. And if the technology was improving, what did the company understand about the software cheat and what does this mean for fixing these vehicles? Will some be easier than others?

Of course, for EPA, we have questions about its compliance and recall programs. I hope we can get some clear answers today from that agency. Why did EPA standard compliance tests and audits fail to detect problems, especially in older technology? What is EPA doing to ensure any fix it requires of the automaker does not negatively affect vehicle performance?

There is some need for a sense of proportion regarding this matter. The 480,000 or so VW vehicles implicated in this scandal represent only .2 percent of the cars and light trucks on the United States highways. And so far, we have no evidence that the software similar to what was used by VW is present in any other U.S. vehicles.

The EPA's ongoing testing will help address this question, but I hope our witnesses from VW and EPA can understand where confidence has been shaken. At root, the behavior to which VW admitted represents a fundamental violation of public trust, and reverberations of this violation can be seen across the United States and across the world, as people grapple with the implications.

We need to develop a clear understanding of the facts and circumstances surrounding this case, and this hearing will be a first important step towards that goal.

[The prepared statement of Mr. Murphy follows:]

#### PREPARED STATEMENT OF HON. TIM MURPHY

Just under three weeks ago, car owners around the world were shocked to learn that Volkswagen AG, the world's largest automaker, admitted that it had installed software for a number of years in millions of its diesel models that effectively defeated emissions controls during routine driving.

This news followed the Environmental Protection Agency's public announcement on September 18th that it had sufficient evidence to support allegations that VW was cheating on its emissions tests.

As EPA reported at the time, when the cars were subject to emissions testing, the diesel vehicles switched into an operational mode designed specifically to pass the tests, and then switched back to a different mode during normal driving—a mode that emitted nitrogen oxides up to 10 and 40 times the Federal limits.

In the United States alone, some 482,000 Volkswagen and Audi models were affected by the cheating software. Worldwide, the software was used in an estimated 11 million vehicles, involving several VW lines.

In the wake of this apparently massive deception, the Energy and Commerce Committee opened a bi-partisan investigation to get answers for the American public. This investigation will seek to understand the facts and circumstances surrounding VW's actions, the impact of its decisions, and related issues about emissions compliance generally.

At this morning's hearing we will receive testimony from the head of Volkswagen's American operations, Mr. Michael Horn, and from EPA officials tasked with ensuring the automobiles on American's roads meet Federal environmental standards. In addition, this subcommittee intends to pursue answers to critical initial questions concerning the troubling revelations about VW's actions-what happened; who was involved; and most important, why?

Let me acknowledge that Mr. Horn is appearing before us voluntarily today and say that I expect that he and the Volkswagen organization will continue to cooperate with our inquiry. This means providing documents and information to the committee as quickly as possible, including documents that have already been discussed publicly in connection with Volkswagen's various board meetings in Germany.

As I said before, there are a number of core questions we will begin to pursue today, both for Volkswagen and for EPA. Most critically: what happened; who was involved; and why were these deceptive actions taken? And we also have a number of questions concerning the impact of these decisions on customers, family-owned dealerships, and the American public.

I hope today Mr. Horn can provide some important context for us and expand upon the facts he represents in his testimony. We will look to him to explain the current understanding of VW executives about what exactly was done to these engines, and was it done to deliberately deceive the Government regulators? And what is VW doing to fix the problem and make whole those who have been affected by its actions?

At some point prior to 2009, VW made a choice to move forward with engines that evidence now suggests were not compliant with U.S. emissions standards. The illegal software was initially deployed in a first generation of these diesel engines which account for approximately 340,000 of the affected vehicles. However, despite apparent advancements in their emissions control systems in two future generations of these engines, the software remained in place. If the technology was improving, what did the company understand about the software cheat? And what does this mean for fixing these vehicles? Will some be easier than others?

Of course, for EPA we have questions about its compliance and recall programs. I hope we can get some clear answers today from that agency. Why did EPA's standard compliance tests and audits fail to detect problems, especially in the older technology? What is EPA doing to ensure any fix it requires of the automaker does not negatively affect vehicle performance?

There is some need for a sense of proportion regarding this matter. The four hundred eighty thousand or so VW vehicles implicated in this scandal represent only .2% of the cars and light trucks on U.S. highways and so far we have no evidence that software similar to what was used by VW is present in any other U.S. vehicles. EPA's ongoing testing will help address this question. But I hope our witnesses from VW and EPA can understand why our confidence has been shaken.

At root, the behavior to which VW admitted represents a fundamental violation of public trust. And the reverberations of this violation can be seen across the United States and across the world as people grapple with the implications. We need to develop a clear understanding of the facts and circumstances surrounding this case. And this hearing will be a first, important step towards that goal. I now recognize the ranking member of the subcommittee, Ms. DeGette, for 5 minutes.

Mr. MURPHY. I now recognize the ranking member of the subcommittee, Ms. DeGette, for 5 minutes.

**OPENING STATEMENT OF HON. DIANA DEGETTE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF COLORADO**

Ms. DEGETTE. Thank you, Mr. Chairman.

In the spirit of bipartisanship of this investigation, I will tell you my first car was also a Volkswagen. It was a 1960 VW Beetle with

a ragtop sunroof that I inherited from my grandmother. And I will tell you that that 1960 Beetle, I still miss that car. It didn't have any lines of computer code required to operate that vehicle.

In this situation, fast forward to today, we know some things, but we don't know enough. And that is why I am glad we are having this investigation.

We know that in May 2014 West Virginia University published a study commissioned by the International Council on Clean Transportation that found that on-road emissions from Volkswagen cars were well above VW standards. They also did not match the emissions outputs found under testing conditions.

We know that VW tried to justify this discrepancy to regulators with explanations of technical issues and unexpected in-use conditions. We know that in December 2014 VW initiated a voluntary recall of nearly half a million vehicles to resolve, among other things, the emissions issues. Yet, when the California Air Resources Board tested the fixed vehicles, they found that the emissions were still above the legal standards.

And we know that, by July of this year, the EPA and CARB told VW that they would not approve the company's 2016 model year diesel vehicles for sale unless the emissions could be explained. VW was essentially forced to come clean, and they ultimately confessed that they had installed a defeat device in their diesel cars designed to circumvent EPA emission standard for certain air pollutants.

We know that this defeat device sensed when the vehicles were undergoing emissions testing and ensured emissions control systems were operating to pass. And we know that during normal road use the emissions controls were reduced and the cars were producing up to 40 times more nitrogen oxide than is allowed by emissions standards. We know that almost half a million cars in the United States might be affected by this.

Now, Mr. Horn, I am glad you have come today to testify here because, while we know all of the things I just talked about, there are a lot more things we don't know and that we need answers for. For example, VW hasn't revealed how the defeat device affects the engine, why it was installed, and how it was able to evade emissions tests. You haven't revealed when and how the engines equipped with this defeat device will be fixed. You haven't told us whether this fix will affect fuel economy or performance of the vehicles.

You haven't revealed what Volkswagen told regulators over the last year, as EPA and the California Board were trying to figure out why the vehicles' emissions were out of compliance. You haven't revealed whether the voluntary recall that VW set in place in 2014 was just merely a ruse. Was the VW Group of America actually trying to find out what was wrong with the cars and fix them or did VW know that the cars had defeat devices on them and were only trying to buy time with the regulators?

You haven't revealed who is responsible for this scheme. We don't know if it came from Germany and who knew about it in the United States.

Now we have all seen the press reports, and we can all speculate about what happened here and why. But, until Volkswagen comes forward with some answers and provides some assurances that we

can trust about what they are saying, the American people, the regulators, and Congress are all left in the dark. So, I hope, Mr. Horn, that you come prepared to answer some of these questions, and I also hope that VW will be prepared to work with this committee as we move forward.

Hundreds of thousands of owners invested money and trust in VW. Many of them bought those cars specifically because they were seeking environmentally friendly vehicles. Now they are left with cars with much higher levels of pollution. They don't have any answers about when or how their car will be fixed or what kind of car they will be left with.

Earlier this week, I visited a Volkswagen dealership in Denver. I saw the pollution control equipment on VW diesel vehicles first-hand. These cars account for almost 25 percent of the sales at that particular dealership and a significant percentage of sales at VW dealerships in Colorado and across this country.

Now, because they can't sell them, these cars are just sitting on the lots, which is a scene that is being repeated across the country. So, as, Mr. Chairman, you say, it is a small percentage of all the cars on the road in the U.S., it is a tremendous economic impact to these dealers and, also, to the consumers who don't know what is going to happen to their cars. And so, that is perhaps the key answer that I am looking for today: what do we do moving forward?

Now, Mr. Chairman, this subcommittee has been here before. In the last 15 years, we have had Ford and Firestone, Toyota, GM, and Takata before this committee. We were able to get information from all these companies to help us understand what happened. But, most importantly, we have used this information to chart a path forward and to help the consumers affected by this event.

I hope that Volkswagen can similarly tell us today what is happening, and I hope that they will get beyond this series of terrible decisions and do something to restore the public trust.

Thank you, and I yield back.

[The prepared statement of Ms. DeGette follows:]

#### PREPARED STATEMENT OF HON. DIANA DEGETTE

Mr. Chairman, thank you for calling this important hearing.

Here is what we know so far:

We know that in May 2014, West Virginia University published a study commissioned by the International Council on Clean Transportation that found that the on-road emissions from Volkswagen's cars were well above EPA standards. They also did not match the emissions outputs found under testing conditions.

We know that VW tried to justify this discrepancy to regulators with explanations of technical issues and unexpected in-use conditions.

We know that in December 2014, VW initiated a voluntary recall of nearly 500,000 vehicles to resolve, among other things, the emissions issues. Yet, when the California Air Resources Board tested the "fixed" vehicles, they found that the emissions were still far above the legal standards.

We know that by July of this year, EPA and CARB told VW that they would not approve the company's 2016 model year diesel vehicles for sale unless these emissions issues could be explained.

VW was forced to come clean, and they ultimately confessed that they had installed a "defeat device" in their diesel cars designed to circumvent EPA emissions standards for certain air pollutants.

We know that this defeat device "sensed" when the vehicles were undergoing emissions testing and ensured emissions control systems were operating to pass. We know that during normal road use, the emissions controls were reduced and that

the cars were producing up to 40 times more nitrogen oxide than is allowed by emissions standards.

We know that almost half a million cars in the United States may be affected. VW hasn't revealed how the defeat device affects the engine, why it was installed, and how it was able to evade emissions tests.

You haven't revealed when and how the engines equipped with this defeat device will be fixed. And you haven't told us whether that fix will affect the fuel economy or performance of the vehicles.

You haven't revealed what Volkswagen told regulators over the last year as EPA and CARB were trying to figure out why these vehicle's emissions were out of compliance.

You haven't revealed whether the voluntary recall that VW set in place in 2014 was really a ruse. Was VW Group of America actually trying to find out what was wrong with the cars and fix them, or did VW know that the cars had defeat devices on them and were only trying to buy time with the regulators?

You haven't revealed who is responsible for this scheme. We don't know who knew about it in Germany and who knew about it in the United States.

We have all seen press reports and we can speculate about what happened here and why. But until Volkswagen comes forward with some answers—and provides some assurances that we can trust what they're saying—the American people, the regulators, and Congress are left in the dark. So Mr. Horn, I hope you have come prepared to answer some of these questions today.

Hundreds of thousands of owners invested money and trust in VW. Many bought them seeking environmentally friendly vehicles.

Now they are left with cars belching much higher levels of pollution. They don't have any answers about when or how their car will be fixed or what kind of car they will be left with.

Earlier this week, I visited a Volkswagen dealership in Denver. I saw the pollution control equipment on VW diesel vehicles firsthand. These cars account for a significant percentage of sales at VW dealerships in Colorado. Now, scores of these cars are just sitting on lots—a scene repeated across the country.

Mr. Horn, I hope you have answers for drivers and for dealers about what they should do with these cars moving forward.

Mr. Chairman, this subcommittee has been here before. In the last fifteen years, we have hauled Ford and Firestone, Toyota, GM, and Takata before this committee. We were able to get information from all those companies to help us understand what happened in their vehicles. But more importantly, we have used this information to chart a path forward and help the consumers affected by these events.

I hope that Volkswagen can similarly tell us today what is happening in their diesel cars and how they intend to fix it.

Volkswagen made a series of terrible decisions and has broken the public trust. Today, we need some answers so we can ensure that this will never happen again.

Mr. MURPHY. The gentlelady yields back.

I now recognize the chairman of the full committee, the gentleman from Michigan, Mr. Upton, for 5 minutes.

**OPENING STATEMENT OF HON. FRED UPTON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN**

Mr. UPTON. Good morning. Thank you, Mr. Chairman.

Fahrvergnügen, it makes a car a Volkswagen. That ad campaign swept the Nation in the '90s. VW has long enjoyed an almost cultish following, dating back to the Beetle, VW Van, and the Rabbit. But, through the years, something apparently became rotten in Wolfsburg, and cheating and betrayal became part of that game plan.

There is a lot that we don't know about VW's actions or their motivations in attempting to skirt emission standards. But, regardless of intent, they have betrayed the trust of regulators, dealers and suppliers, and, most important, the driving public.

Probably the most famous congressional hearing question is, "What did you know and when did you know it?", asked by Senator Howard Baker back in the seventies at Watergate. Now we learn

that you knew some 18 months ago. So, we add, what did you really do to fix it and come clean versus simply going along?

Ultimately, this saying rings true: cheaters never prosper. And that is why we are here today. We have many questions about how we got here and the road ahead. Why would one of the world's largest automakers go to such lengths to avoid emissions requirements? Who was responsible for these decisions and why did they for years, even as the technology improved, continue that path?

If they were willing to cut corners here, what else have they done? How will you fix the flaw and when? Will the fix affect the performance of these vehicles? Unraveling these questions will take time, and I don't expect that we are going to discover all the answers today. But if VW is serious about rebuilding this broken trust, its leaders will need to demonstrate a serious commitment to answer these and many other questions prompted by its actions.

This requires transparency, cooperation, and clear, consistent communication not only with this committee, the EPA, and other ongoing investigations, but also with its customers, suppliers, dealers, and the general public. VW will inevitably pay a steep price for this dirty little secret. How it responds to the failure will go a long way to rebuilding or further eroding the public's trust.

VW must also consider what implications these actions have for the thousands of Americans that it employs, including their facility in Auburn Hills, Michigan. Every single one of us who has ties to Michigan is proud of our rich tradition that is so closely intertwined with the success of the automobile. In fact, Michigan is one of several States that have launched their own investigations. All automakers must advance by imagination and innovation, not by gaming the system and breaking the law.

We will get some additional insight today, but the committee's investigation is just beginning. This hearing is an important step. As we receive documents and information, new details are certain to emerge. I look forward to getting to the bottom of this issue as quickly as possible.

I take this very personally. As the author of the TREAD Act to protect the public, Congress was very clear in our work to protect consumers from abuses from automakers, which included steep fines and, yes, criminal prosecution.

VW has betrayed a nation, a nation of regulators, loyalists, suppliers, and innocent customers. It is time to clean it up or get off the road.

[The prepared statement of Mr. Upton follows:]

#### PREPARED STATEMENT OF HON. FRED UPTON

Fahrvergnügen—it's what makes a car a Volkswagen. That ad campaign swept the Nation in the 1990s. Volkswagen has long enjoyed an almost cultish following dating back to the Beetle, VW van, the Rabbit. But through the years something apparently became rotten in Wolfsburg, and cheating and betrayal became part of the VW game plan.

There is a lot we still do not know about Volkswagen's actions, or their motivations, in attempting to skirt emissions standards. But regardless of intent, they have betrayed the trust of regulators, dealers and, most importantly, the driving public.

The most famous congressional hearing question is: "what did you know and when did you know it?" asked by Senator Howard Baker. Now we learn you knew some 18 months ago. So we add: What did you really do to fix it and come clean versus

simply going along? But, ultimately, the saying rings true: cheaters never prosper. That's why we are here today.

We have many questions about how we got here, and the road ahead. Why would one of the world's largest automakers go to such lengths to avoid emissions requirements? Who was responsible for these decisions and why did they for years, even as the technology improved? If they were willing to cut corners here, what else have they done? How will you fix this flaw and when? Will the fix affect the performance of these vehicles?

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VW will inevitably pay a steep price for its dirty little secret. How it responds to this failure will go a long way to rebuilding, or further eroding, the public's trust. VW must also consider what implications these actions have for the thousands of Americans it employ, including at their facility in Auburn Hills, Michigan. Every single one of us who has ties to Michigan is proud of our rich tradition that is so closely intertwined with the success of the automobile. In fact, Michigan is one of several States that have launched their own investigations. Recent reports are sickening, and cannot be tolerated. All automakers must advance by imagination and innovation—not by gaming the system and breaking the law.

We will get some additional insight today but the committee's investigation is just beginning. This hearing is an important step. As we receive documents and information, new details are certain to emerge. I look forward to getting to the bottom of these issues as quickly as possible. I take this very personally. As the author of the TREAD Act to protect the public, Congress was clear in our work to protect consumers from abuses from automakers.

Volkswagen has betrayed a nation—a nation of regulators, loyalists, and innocent customers. Either clean it up, or get off the road.

Mr. UPTON. I yield the balance of my time to Marsha Blackburn, the vice chairman.

Mrs. BLACKBURN. Thank you, Mr. Chairman.

Mr. Horn, thank you for being here, and I think it is completely appropriate that you come before the committee, that you apologize for the actions, and that you and VW take full responsibility for what has transpired. It is disappointing.

I am fully aware that our Governor has been at the Chattanooga facility. And I know that the Governor, State legislators, the other members of the congressional delegation, and I are quite concerned about this. You have got a lot of hard-working, honest Tennesseans who were at that Chattanooga facility, and we are quite concerned about the actions of a few, a few VW employees, not Chattanoogaans and not Tennesseans.

We are going to be very precise with you and VW. It is, as the chairman said and as Chairman Murphy has said, it is basically the who, what, when, where, how, and why. Why you did it, how you did it, when you did it, when you knew, who carried this out. Where did this take place? Did it go across the brands? Was it pointed at EU regulations? Was it pointed at some of the climate regulations? Is the EPA to overburdened to have noticed this?

This is a systemic failure. And I will also point out some want to say it is a safety issue. No, sir, this is an issue of integrity.

So, we appreciate that you are here. We look forward to hearing from you.

And I want to yield the balance of my time to the vice chair of the subcommittee, Mr. McKinley.

Mr. MCKINLEY. Thank you.

And thank you, Mr. Chairman, for ordering this meeting. Others of you have talked about the car. My first was a 1957 Volkswagen. I think I have got everybody beat on that.

But, listen, there should be zero tolerance for this unethical behavior and flagrant disregard of the U.S. laws, public health, and the consumer. That is why this hearing is important to us today. The impaired people need to understand what happened, how it happened, and how it will be resolved.

And they feel in West Virginia that they have been deceived. So, on Monday there was action taken by the attorney general to file action against this.

I also just want to touch on the University. At West Virginia University they use a fraction of the money that we spend with EPA, just a fraction of the money, to make this discovery. And they found out, as you know, that one of the cars that they tested was 15 to 35 times more emissions than they were allowed. Another was 5 to 20 times more emissions.

So, Mr. Chairman, I want to touch on the fact that this opportunity about WVU and what its research, how research dollars can work. And this is what happened—not the EPA, but this was a university that was able to accomplish this.

So, I am looking forward to this hearing and getting some clarity as to what this is. I thank you very much for holding this session—

Mr. MURPHY. Thank you.

Mr. MCKINLEY [continuing]. And look forward to the conversation.

Mr. MURPHY. Thank you.

We now recognize the ranking member of the committee, Mr. Pallone, for 5 minutes.

**OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY**

Mr. PALLONE. Mr. Chairman, thank you for holding this hearing.

We are here today because Volkswagen lied. They lied to regulators, they lied to their customers, and they lied to the American people.

We all have many important questions that deserve answers. What did Volkswagen do to its cars? Why did they do it? And who knew this was happening, both in Germany and here in the United States?

This whole scheme makes me question how much we should trust Volkswagen. To be honest, this committee's investigations over the last 5 years make me question how much we should trust the auto industry in general.

Let me remind the committee of the difficult history the American driver has had with the auto industry in recent years.

In 2010, this committee investigated Toyota's recall of 9 million vehicles worldwide for unexplained cases of sudden unintended acceleration. Dozens of people died in accidents linked to runaway Toyota vehicles. Our committee held multiple hearings and, in the end, it was determined that Toyota knew about certain problems

with their vehicles that, if fixed early, would likely have saved lives.

In early 2014, we launched an investigation of General Motors' ignition switches that killed many people. Our committee's investigation found that individuals within GM knew about the deadly ignition defect for nearly a decade before the company initiated a recall.

Later in 2014, we learned of the exploding Takata airbags installed in vehicles made by at least 11 auto manufacturers. The recalls for airbag problems began as early as 2008. Yet, Takata and NHTSA continued to investigate whether additional recalls are still necessary, and Takata still has not determined the root cause of the defect, which has killed a number of people worldwide and injured hundreds more.

And now, we have Volkswagen, a company that told regulators that their vehicles met emission standards, but had actually installed defeat devices to bypass emission controls.

Over the past 5 years, the world's three largest automakers have come before this committee to admit that they have cheated the system and lied to American customers. This seems to be a pervasive culture of deception in the auto industry, and it has to stop now.

Mr. Chairman, the American people need to know that they are safe on our roads, and they need to know that when they decide to buy a car, they are actually getting what they paid for. The auto industry has deliberately chosen to perpetuate lies and mislead consumers, but the American public are not crash-test dummies and cannot be treated as such.

Mr. Horn, I understand that you won't have all the answers here today, but please don't hide behind an internal investigations excuse. It is time for Volkswagen to be forthcoming with its customers, regulators, and Congress about what you did to these cars and why. We deserve an explanation.

[The prepared statement of Mr. Pallone follows:]

#### PREPARED STATEMENT OF HON. FRANK PALLONE, JR.

Mr. Chairman, thank you for holding this hearing. We are here today because Volkswagen lied. They lied to regulators. They lied to their customers. And they lied to the American public.

We all have many important questions that deserve answers. What did Volkswagen do to its cars? Why did they do it? And who knew this was happening, both in Germany and here in the U.S.?

This whole scheme makes me question how much we should trust Volkswagen. And to be honest, this committee's investigations over the last 5 years make me question how much we should trust the auto industry.

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Mr. Horn, I understand that you won't have all the answers here today. But please don't hide behind an internal investigations excuse. It is time for Volkswagen to be forthcoming with its customers, regulators, and Congress about what you did to these cars and why. We deserve an explanation.

I yield my remaining time to Rep. Schakowsky.

Mr. PALLONE. And I would like to yield, Mr. Chairman, my remaining time to Ms. Schakowsky.

Ms. SCHAKOWSKY. Thank you for yielding, Mr. Ranking Member.

We will hear a lot from Volkswagen today. We will hear apologies, I'm sure, for Volkswagen's deliberate deception of the American people and Federal and State public health agencies. We will hear a pledge to get to the bottom of this issue without delay and to fully cooperate with investigators. We will hear how the use of so-called defeat devices is incompatible with Volkswagen's corporate culture. And I want to tell you, Mr. Horn, I don't buy it.

The American people, the EPA, and their counterparts around the world have been defrauded by Volkswagen. The company's word isn't worth a dime.

The only thing I want to hear today is exactly how will Volkswagen make this right by consumers. Saying it will take time to design and implement a fix is insufficient and I think unacceptable. People shouldn't have to wait to get the fuel economy, the low emissions, and performance that they already paid for. If they wanted, every Volkswagen clean diesel vehicle owner should be able to get their money back, all of it.

The American people deserve answers. Yes, there are a lot of questions, but there are also thousands of owners of clean diesel Volkswagens out there, and what they are wanting to know is what are you going to do for them and when. And I say now. So, I expect those answers to be provided today.

And I yield back to the ranking member of the full committee.

Mr. PALLONE. Thank you, Mr. Chairman.

Unless anyone else on this side would like the time, I am going to yield back. I yield back, Mr. Chairman.

Mr. MURPHY. Thank you. The gentleman yields back.

I also ask unanimous consent that the written opening statements by other members of the committee be introduced into the record, and without objection, the documents will be entered into the record.

You are aware that the committee is holding an investigative hearing, and when doing so, has the practice of taking testimony

under oath, Mr. Horn. Do you have any objections to testifying under oath?

Mr. HORN. No.

Mr. MURPHY. Thank you.

The Chair then advises you that, under the rules of the House and the rules of the committee, you are entitled to be advised by counsel. Do you desire to be advised by counsel during your testimony today?

Mr. HORN. No.

Mr. MURPHY. Then, in that case, will you please raise your right hand and I will swear you in? Stand and raise your hand.

[Witness sworn.]

Mr. MURPHY. Thank you.

Let the record show the witness answered yes. You are now under oath and subject to the penalties set forth in Title 18, Section 1011 of the United States Code.

You may now give a 5-minute summary of your written statement. If you will please make sure your microphone is on and pull it close to you, so we can hear you? You have to press the button. Is it on?

**STATEMENT OF MICHAEL HORN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, VOLKSWAGEN GROUP OF AMERICA**

Mr. HORN. Thank you very much, Chairman Upton, Chairman Murphy, Ranking Member Pallone, Ranking Member DeGette, other members of the committee. Thank you for inviting me here today to testify before the committee.

My name is Michael Horn, and I am president and CEO of Volkswagen Group of America, a subsidiary of Volkswagen AG, headquartered in Germany, in Wolfsburg.

I volunteered to come here before this committee at the very outset of these inquiries in an effort to show our commitment to cooperation. We have not had the opportunity to review all aspects of this matter. Indeed, the investigation is just beginning. Therefore, my testimony and my answers to your questions will, by necessity, have to be considered preliminary and based on my best current recollection and information.

On behalf of our company and my colleagues in Germany and me personally, I would like to offer a sincere apology, sincere apology for Volkswagen's use of a software program that served to defeat the regular emissions testing regime.

In the spring of 2014, when the West Virginia University study was published, I was told that there was a possible emissions non-compliance that could be remedied. I was informed that EPA regulations included various penalties for noncompliance with the emissions standards and, also, that the agency could conduct engineering tests on their own which could include analysis on defeat devices or other auxiliary equipment.

Let me be very clear about this: While I was told about the EPA process, I was not then told, nor did I have any reason to suspect or to believe, that our vehicles included such a device.

I was also informed that the company engineers would work with the agencies to resolve the issue. Later in 2014, I was informed that the technical teams had a specific plan for remedies to bring

the vehicle into compliance and that they were engaged with the agencies about the process. And you mentioned this, also, in your statements.

On September 3rd, 2015, Volkswagen AG disclosed at a meeting with the California Air Resources Board and the U.S. Environmental Protection Agency that emission software in four-cylinder diesel vehicles for model years 2009 until 2015 contained a defeat device in the form of hidden software that could recognize whether a vehicle was being operated in a test laboratory or on the road. The software made those vehicles emit high levels of nitrogen oxides when the vehicles were driven in actual road use rather than laboratory testing.

In Volkswagen's recent, ongoing discussions with the regulators, we described to the EPA and CARB that our emissions control strategy also included a software feature that should be disclosed to and approved by them as an Auxiliary Emissions Control Device, which is also called AECD, in connection with the certification process. As a result, in order to show that we acted immediately, we have withdrawn the application for certification for all model year 2016 vehicles and we are now working with the agencies to continue the certification process.

These events—and I fully agree on this—are deeply troubling. I did not think that something like this was possible at the Volkswagen Group. We have broken the trust of our customers, dealerships, employees, as well as the public and the regulators. And let me be very clear. We at Volkswagen take full responsibility for our actions and we are working with all the relevant authorities in a cooperative way.

I am here to offer the commitment of Volkswagen AG to work with this committee to understand what happened and how we will move forward. EPA, CARB, the U.S. Department of Justice, State attorneys general, as well as other authorities are fulfilling their duties to investigate this matter, and we are determined to make things right.

This includes accepting the consequences of our acts, providing a remedy, and beginning to restore the trust of our customers, dealerships, employees, the regulators, and the American public. We will rebuild the reputation of a company that more than 2 million people worldwide, including dealers and suppliers, rely upon for their livelihoods.

Our immediate goal is to develop a remedy for our customers. While much work is still to be done, I would like to talk today about how we get from where we are now to that goal.

First, we are conducting investigations on a worldwide scale on how these matters could have happened. Responsible parties will be identified and held accountable. Thorough investigations have already begun, but any information development at this stage is preliminary. We ask for your understanding as we complete this work.

Second, it is important for the public to know that, as the EPA has said, these vehicles do not present a safety hazard and remain safe and legal to drive.

Third, technical teams are working tirelessly to develop remedies for each of the affected group of vehicles. These solutions will be

tested and validated and, then, shared with the responsible authorities for approval.

There are three groups of vehicles involved, each containing one of the three generations of the two-liter diesel engine. Each will require a different remedy, but these remedies can only be our first step to our customers.

Fourth, we will examine our compliance processes and standards at Volkswagen and adopt measures to make certain that something like this cannot happen again.

Fifth, we commit to regular and open communication with our customers, dealers, employees, and the public as we move forward. And as first steps, we have set up a designated service line, Web site, micro-site, to be a channel for this communication. And I have sent a personal letter to every affected customer.

I can offer today this outline of a path forward towards the goal of making things right. Nevertheless, Volkswagen knows that we will be judged not by our words, but clearly by our actions over the coming weeks and months.

These events are fundamentally contrary to Volkswagen's core principles of providing value to our customers, innovation, and responsibility to our communities and our environment. They do not reflect the company that I know and to which I have dedicated 25 years of my life. It is inconsistent that this company involved in this emissions issue is also a company that has invested in environmental efforts to reduce the carbon footprint in our factories around the world, where our plant in Tennessee is the best factory in this respect.

In closing, again, I apologize on behalf of everyone at Volkswagen. We will fully cooperate with the responsible authorities. We will find remedies for our customers and we will work to ensure that this will never happen again.

Thank you again for allowing me to testify today, and I look forward to your questions. Thank you.

[The prepared statement of Mr. Horn follows:]

**Testimony of Michael Horn, President and CEO of Volkswagen Group of America, Inc.  
Before the House Committee on Energy and Commerce  
Subcommittee on Oversight and Investigations  
October 8, 2015**

Chairman Upton, Chairman Murphy, Ranking Member Pallone, Ranking Member DeGette, other Members of the Committee, thank you for inviting me to testify before the Committee today.

My name is Michael Horn, and I am the President and CEO of Volkswagen Group of America, a subsidiary of Volkswagen AG, headquartered in Wolfsburg, Germany. I have volunteered to come before this Committee at the very outset of these inquiries in an effort to show our commitment to cooperation. We have not had the opportunity to review all aspects of this matter, indeed the investigation is just beginning. Therefore, my testimony and my answers to your questions will, by necessity, have to be considered preliminary and based on my best current recollection and information.

On behalf of our company, and my colleagues in Germany, I would like to offer a sincere apology for Volkswagen's use of a software program that served to defeat the regular emissions testing regime.

In the spring of 2014 when the West Virginia University study was published, I was told that there was a possible emissions non-compliance that could be remedied. I was informed that EPA regulations included various penalties for non-compliance with the emissions standards and that the agencies can conduct engineering tests which could include "defeat device" testing or analysis. I was also informed that the company engineers would work with the agencies to resolve the issue. Later in 2014, I was informed that the technical teams had a specific plan for remedies to bring the vehicles into compliance and that they were engaged with the agencies about the process.

On September 3, 2015, Volkswagen AG disclosed at a meeting with the California Air Resources Board ("CARB") and the U.S. Environmental Protection Agency ("EPA") that emissions software in four cylinder diesel vehicles from model years 2009-2015 contained a "defeat device" in the form of hidden software that could recognize whether a vehicle was being operated in a test laboratory or on the road. The software made those emit higher levels of nitrogen oxides when the vehicles were driven in actual road use than during laboratory testing.

In Volkswagen's recent ongoing discussions with the regulators, we described to the EPA and CARB that our emissions control strategy also included a software feature that should be disclosed to and approved by them as an auxiliary emissions control device ("AEC") in connection with the certification process. As a result, we have withdrawn the application for

certification of our model year 2016 vehicles. We are working with the agencies to continue the certification process.

These events are deeply troubling. I did not think that something like this was possible at the Volkswagen Group. We have broken the trust of our customers, dealerships, and employees, as well as the public and regulators.

Let me be clear, we at Volkswagen take full responsibility for our actions and we are working with all relevant authorities in a cooperative way. I am here to offer the commitment of Volkswagen AG to work with this Committee to understand what happened, and how we will move forward. EPA, CARB, the U.S. Department of Justice, State Attorneys General, as well as other authorities, are fulfilling their duties to investigate this matter.

We are determined to make things right. This includes accepting the consequences of our acts, providing a remedy, and beginning to restore the trust of our customers, dealerships, employees, the regulators, and the American public. We will rebuild the reputation of a company that more than two million people worldwide, including dealers and suppliers, rely upon for their livelihoods.

Our immediate goal is to develop a remedy for our customers. While much work is still to be done, I'd like to talk today about how we get from where we are now to that goal.

**First**, we are conducting investigations on a world-wide scale into how these matters happened. Responsible parties will be identified and held accountable. Thorough investigations have already begun, but any information developed at this stage is preliminary. We ask for your understanding as we complete this work.

**Second**, it is important for the public to know that, as the EPA has said, these vehicles do not present a safety hazard and remain safe and legal to drive.

**Third**, technical teams are working tirelessly to develop remedies for each of the affected groups of vehicles. These solutions will be tested and validated, and then shared with the responsible authorities for approval. There are three groups of vehicles involved, each containing one of the three generations of the 2.0L diesel engine. Each will require a different remedy, but these remedies can only be our first step for our customers.

**Fourth**, we will examine our compliance, processes, and standards at Volkswagen and adopt measures to make certain that something like this cannot happen again.

**Fifth**, we commit to regular and open communication with our customers, dealers, employees, and the public as we move forward. As first steps, we have set up a designated service line and website to be a channel for this communication, and I have sent a letter to every affected customer.

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Volkswagen Group has a deep commitment to preserving our environment. As one of the world's largest automobile manufacturers, our commitment to the environment extends throughout every aspect of our business in the more than 150 countries in which we operate. For example, here in the United States, Volkswagen's manufacturing facility in Chattanooga, Tennessee serves as a model for Volkswagen plants around the world for increasing energy efficiency and reducing emissions, water, and materials usage and waste. In recognition of the plant's efficiency, Volkswagen Chattanooga received a platinum certification from the U.S. Green Building Council's Leadership in Energy and Environmental Design ("LEED") program. The facility is the first and only automotive manufacturing plant in the world to receive the Platinum Certification. As environmental protection and sustainability are central to Volkswagen's core values, these events have been particularly troubling. Our conduct in the events that bring us here today belittle the efforts of Volkswagen to lead in environmental responsibility.

Over the 60 years Volkswagen has been in the United States, it has become part of the American culture. There are more than 6,000 Americans employed directly by Volkswagen Group of America in its 60 facilities across the United States: from a customer relations center in Auburn Hills, Michigan and a testing lab in Golden, Colorado, to a parts distribution center in Haslet, Texas, and our state-of-the-art manufacturing facility in Chattanooga, Tennessee. That factory, alone, employs more than 2,200 people and is expanding. We are part of communities all across the country. Thousands more hardworking men and women are employed at our parts suppliers and the network of about 1,000 dealerships across the United States.

In closing, I again apologize on behalf of everyone at Volkswagen. We will fully cooperate with all responsible authorities. We will find remedies for our customers, and we will work to ensure that this will never happen again.

Thank you again for allowing me to testify today, and I look forward to your questions.

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Mr. MURPHY. Thank you, Mr. Horn.

I now recognize myself for 5 minutes of questioning.

On September 3rd, 2015, VW admitted to CARB and EPA that it had installed defeat devices in certain model year 2009 and model year 2015 vehicles. To the best of your knowledge, did VW install this software for the express purpose of defeating emissions controls?

Mr. HORN. To our understanding—and this is also part of the investigation—it was installed to this purpose, yes, for this purpose.

Mr. MURPHY. Now in your written testimony you noted that you were made aware of potential emissions compliances in the spring of 2014.

Mr. HORN. Uh-hum.

Mr. MURPHY. You also noted discussions at the time about penalties for noncompliance and the EPA's ability to test for defeat devices. At that time were you aware or informed that these vehicles contained defeat devices?

Mr. HORN. No.

Mr. MURPHY. When did you first learn, then, that VW vehicles contained a defeat device?

Mr. HORN. Around the September 3rd meeting, a couple of days before.

Mr. MURPHY. And then, why were you having discussions about defeat devices in the spring of 2014, then, if there was no knowledge or at least a concern that these vehicles contained a defeat device?

Mr. HORN. So, the University of West Virginia made the study. There was a Jetta and Passat in there and another off-road vehicle. I don't want to name the brand now. And the results were communicated. In this context, I was told by our experts in the Auburn Hills office—and it was also, you know, just four months into this market—that, of course, you know, not complying with emission standards is relating to fines, and hefty fines, specifically here in the U.S., and that those experts, including the German Technology Department, will check on the study and the study results.

As you also mentioned, it was a small team. Results have been published with all the emissions, which went overboard, and that they will check this, point 1.

Point 2 is they would also look with all the responsible departments, and there was a number of experts at the Department in Germany, and then, how to possibly fix this. And then, there was the notion in this communication that, also, the EPA or the agencies could check also on their own, which to my degree is normally around the world that agencies check once in a while on their own, for auxiliary devices, including defeat devices.

At that point of time, I had no understanding what a defeat device was and I had no indication whatsoever that a defeat device could have been in our cars.

Mr. MURPHY. So, let me go back. Mr. Horn, the new Chief Executive, Volkswagen, Mr. Mueller, has been quoted in media reports this morning saying that only a few people were involved with the deception. Now I have to say that I don't take much comfort in that, especially knowing that Volkswagen has been known for superb engineers and mechanics, who I wonder shouldn't they have

picked up on this. But isn't it true that the technology was installed in the automobiles at least initially because the cars could not meet the new, more stringent emissions standards for diesel engines?

Mr. HORN. Yes, to your last question, this appears to be this way, and to newspaper articles about possible quotes of Mr. Mueller, I don't want to quote this.

As I said, also, the investigations are preliminary. One week our group revision did the investigation from September 22nd to October 1st. And then, the entire investigations on this matter is turned over to an external agency, a law firm called Jones Day, an American company, which is now going through the systems, outside advice, outside counsel.

Mr. MURPHY. I think what we find amazing is that West Virginia University discovered this, and your army of brilliant engineers and talented mechanics didn't know something was amiss. And I am sure we will have more questions about that.

But I want to ask you this: in terms of VW's status for remedying these defeat devices, who is responsible for developing and testing the solution?

Mr. HORN. The responsibility for developing and testing the engine and drivetrain software lies within the Engine and Drivetrain Division in Germany, in Wolfsburg, for the two-cylinder, for the four-cylinder TDI engines.

Mr. MURPHY. Now will this require a software patch or changes to the actual vehicle's architecture and hardware?

Mr. HORN. Yes, thank you for this question. I think we have to do a different change now into the three groups of cars. You've mentioned that roughly 500,000 cars are affected. Out of those, round about 430,000 cars are the Gen 1 vehicles, which were the very early vehicles, started here in 2009. For those cars, we believe that a software-only solution will not be possible because, also, to be quite frank and logic, you know, if it would have been possible, they would have done it in the first place.

So, for those cars, we are working on both software and hardware solutions, and there are different strategies about an additional NOx catalytic converter as well as an SCR Urea Tank. But this is something which is hardware engineering, which is a little bit—it's complex and it takes time to develop and to test this. This is one of the strategies.

The Generation 2 vehicles, which is just the Passat model, I feel there are 90,000 cars here in the U.S. This will be most probably a software solution. This is tested now, and could involve one or the other, let's say, sensor. But whatever I explain to you now, anyway, this is being discussed in a timely manner now in the next couple of weeks with the California Air Resources Board and the CARB.

For the Generation 3 vehicles, so the actual—

Mr. MURPHY. Can I ask, because I have gone way over time—

Mr. HORN. Sure, sure.

Mr. MURPHY. I am sure other colleagues are going to be asking some more detailed questions that we will get today.

Mr. HORN. OK.

Mr. MURPHY. But I now need to yield 5 minutes. I recognize Ms. DeGette for 5 minutes.

Ms. DEGETTE. Thank you, Mr. Chairman.

Now, Mr. Horn, your company acknowledged that it installed these defeat devices on a number of models dating back to 2009, correct?

Mr. HORN. Sorry, I have a problem understanding with all this noise stuff.

Ms. DEGETTE. Oh, Mr. Chairman, Mr. Chairman, can you please have quiet in the room, so Mr. Horn can understand me?

Mr. MURPHY. Yes. Thank you.

The room will please be quiet, especially upfront. Thank you. So, you are not distracted. Thank you.

Ms. DEGETTE. All right. I will ask that again. And if I can have the clock reset to 5 minutes?

Mr. Horn, your company has acknowledged that it installed these defeat devices on a number of models back to 2009, yes or no?

Mr. HORN. Yes.

Ms. DEGETTE. And do you know how the various defeat devices installed in the cars actually work at this point?

Mr. HORN. Personally, no, I'm not an engineer.

Ms. DEGETTE. Does someone at VW know how these defeat devices work?

Mr. HORN. I believe this is also within the investigations, and I believe that—

Ms. DEGETTE. Can you please give us the information when you find out?

Mr. HORN. We will. We will if we have it.

Ms. DEGETTE. Thank you very much.

Now you mentioned this West Virginia University study that was conducted in May of 2014 which found that there real NOx submissions on several Volkswagen vehicles exceeded EPA standards by as much as 35 times. Following publication of that study, VW represented to the California Air Resources Board, or CARB, and to the EPA that the increased emissions were due to technical issues and unexpected in-use conditions. Correct?

Mr. HORN. I'm sorry, you guys cough here all the time, and I have trouble—

Ms. DEGETTE. All right. I will ask the question again.

Mr. HORN. Thank you.

Ms. DEGETTE. After that study by West Virginia University, isn't it true that VW told the EPA and the California Board that the increased emissions were due to technical issues and unexpected—

Mr. HORN. Yes.

Ms. DEGETTE [continuing]. In-use conditions?

Mr. HORN. Yes.

Ms. DEGETTE. Yes.

Mr. HORN. True.

Ms. DEGETTE. And those representations at that time were, in fact, incorrect and false, weren't they, sir?

Mr. HORN. Yes.

Ms. DEGETTE. Yes, they were.

Now, to your knowledge, did anybody at the Volkswagen Group of America know at that time that, in fact, those discrepancies

were due to these defeat devices when they made those representations to the regulators?

Mr. HORN. To my knowledge at this point of time, no.

Ms. DEGETTE. No one in the U.S. did?

Mr. HORN. No.

Ms. DEGETTE. OK. Now, in December 2014, VW proposed a recall of 500,000 vehicles to resolve the, quote, “technical issues”. Is that correct?

Mr. HORN. Uh-hum.

Ms. DEGETTE. And, in fact, a number of those vehicles were recalled. Is that correct?

Mr. HORN. Yes, most of them.

Ms. DEGETTE. But, after they were recalled, the California regulator still said that that fix did not work, isn’t that correct?

Mr. HORN. That is correct.

Ms. DEGETTE. Now, to your knowledge, did anyone at the Volkswagen Group of America know about the existence of these defeat devices when the company announced that recall in December of 2014?

Mr. HORN. To my best knowledge today, no.

Ms. DEGETTE. Mr. Horn, when did you personally learn of the defeat device and under what circumstances?

Mr. HORN. Around the meeting on September 3rd with CARB and EPA.

Ms. DEGETTE. OK. Now you talked, when the chairman asked you about these cars—I am concerned about what we are going to do about the 500,000 cars we have on the road in the U.S. And the first thing is, as you just testified, about 430,000 of those cars cannot be fixed by a software-only solution. Is that correct?

Mr. HORN. Yes.

Ms. DEGETTE. And that is because of the way that the engine is designed in these vehicles. Correct?

Mr. HORN. I would say not the engine is designed, but all the after-treatment systems.

Ms. DEGETTE. Right. And I have got to say, I have got to acknowledge my wonderful dealer Fred Emich, who is here today. And he let me come and talk to his wonderful mechanics on Monday. They gave me this chart right here. I tried to take the card itself, but it was too heavy and they told me I would have to probably pay them \$2,000 if I lost it. So, I decided to take the chart instead.

This is the chart of the exhaust on these 430,000 cars. And as I could clearly see, you can’t do a minor little fix to fix this problem. So, what is VW going to do for these 430,000 cars, so that the users can use them and so that they can pass the emissions test?

Mr. HORN. So, from this distance, I can’t see the chart, but I believe it is maybe something out of our service literature or customer literature.

Ms. DEGETTE. It is the exhaust system for these cars.

Mr. HORN. Yes, but—

Ms. DEGETTE. What can be done to fix that?

Mr. HORN. There’s two scenarios next to the software adjustments and one scenario—

Ms. DEGETTE. But these are for the cars that can't have, that the software adjustments will not work.

Mr. HORN. We are talking now about Generation 1 cars, the 430,000 cars.

Ms. DEGETTE. That's right.

Mr. HORN. The picture you have shown and the treatment, software alone doesn't work because, otherwise, they would have done it right in the first place.

Ms. DEGETTE. Right. So, what are you going to do for those cars?

Mr. HORN. Two technical scenarios. Either a Urea Tank, SCR Tank, to put, add glue in there, or a specific catalyzer for the NOx. Two technical scenarios.

Ms. DEGETTE. OK, but those cars don't have the Urea Tank right now?

Mr. HORN. No. That's why it has to—

Ms. DEGETTE. So, this would be a major fix, correct?

Mr. HORN. Yes, ma'am.

Ms. DEGETTE. Now what is the timeframe VW has set for that fix?

Mr. HORN. We are still working on the timeframe, and it's too early to say when this fix exactly is going to take place.

Ms. DEGETTE. When are these dealers going to be allowed to sell these cars?

Mr. HORN. The dealers, the issue with the dealers, as Fred Emich told you, is that we have not the model year '16 certified and we have stopped sale on our own, on our own—

Ms. DEGETTE. Right. When is that going to be fixed?

Mr. HORN. The model year '15—

Ms. DEGETTE. So you are going to be able to sell those cars?

Mr. HORN. There are two scenarios. A scenario, we are now trying to get a conditional approval with the EPA until we have the final software fix beginning of next year.

Ms. DEGETTE. The beginning of next year? And in the meantime, what are the dealers and the customers supposed to do, the ones who have these cars?

Mr. HORN. Well, in the meantime, no customer can buy a car because it's not available for them. And with the dealers, we have very early started a program to work with them to also help them financially and to communicate with them—

Ms. DEGETTE. OK, but the 430,000 cars that are already on the road, what are those customers supposed to do? Their cars cannot pass the emissions test.

Mr. HORN. The EPA has said, and they have repeated this also in their statement, that these cars are legal and safe to drive.

Mr. MURPHY. Thank you.

Mr. HORN. Until now, there's no indication that they didn't pass any emissions test.

Mr. MURPHY. Thank you. The gentlelady's time has expired.

Now we need to recognize the chairman of the full committee, Mr. Upton of Michigan, for 5 minutes.

Mr. UPTON. Thank you, Mr. Chairman.

I want to go back to the specifics of the defeat device. So, I live in Michigan. Where I live we don't need to test our cars for emis-

sions on an annual basis, as many States require. Certainly, in this region here in DC I know they do.

So, how is this defeat device actually set up, so that it was different when an individual drove it down the road versus taking it to a service station and getting the emissions sticker that is often required in the States that require such?

Mr. HORN. So, I'm—

Mr. UPTON. I've been told a couple of things, but I just want to know if you can walk—

Mr. HORN. I can't tell you—

Mr. UPTON [continuing]. Me through how that could change the emissions system. What happens?

Mr. HORN. I can share my best knowledge, but I'm not an engineer, neither a software engineer.

Mr. UPTON. Well, I—

Mr. HORN. But let me try to explain. Let me try to explain. My understanding at this point of time is that the software was designed that the vehicle or the software could detect whether it was on a dyno, in a testing laboratory environment, or whether it was on the street.

And one example of this, as experts have explained to me, is that the software could detect whether the steering wheel made an angle. So, there might have been and there will be other parameters, like maybe speed and, then, change of speed and those things.

Mr. UPTON. Maybe the weight of the driver in the driver's seat?

Mr. HORN. I don't think so, but maybe. I don't know.

Mr. UPTON. So, wouldn't it be easy to develop the software that would just remove that?

Mr. HORN. Yes. This will be, this software will be ready—

Mr. UPTON. But, of course, when that happens, the car isn't going to meet the emissions test.

Mr. HORN. Regarding the model year '16 and '15, which were the Generation 3 cars, which we are discussing right now with the agencies, the defeat device will be either switched off, and from January onwards will be completely taken out of the car. And those cars will pass the emissions test.

Mr. UPTON. So, how many vehicles will not pass the emissions test, or the ones that you have identified?

Mr. HORN. Now, I mean, my question—

Mr. UPTON. So, you will be able to do that with the later versions, right?

Mr. HORN. We have—

Mr. UPTON. But not the earlier versions of the vehicle? They won't be able to pass? By turning off the device, the defeat device, there will be a number of cars that, in fact, will not meet the current standards. And that is your big goal.

Mr. HORN. The burn standards, yes, you're right.

Mr. UPTON. And how many of those vehicles are there on the road?

Mr. HORN. Well, we have a total of 500,000: 430,000 Generation 1 vehicles, 95,000 Generation 2 vehicles, and then, it's around 70,000 Generation 1 vehicles. And so, you know, all of these cars are out of the legal compliance, clearly. But, as EPA has said, all

these cars are legal and safe to drive for the owners. So, we are not selling the cars, but the owners can legally drive and safely drive their cars.

Mr. UPTON. So, your dealers across the country, they have their finance plans, where they have quite an inventory, I would guess, of cars that they are now unable to sell. They have paid in advance for those under the financing plan that dealers have, and they are not going to be able to sell them for a number of months, perhaps even as long as six months at a minimum, until the fixes can be done.

What type of remedies are you offering the dealers in terms of financial incentives, knowing that they have paid for these cars and, frankly, lost a boatload, I would imagine?

Mr. HORN. Yes, and this is also—

Mr. UPTON. That inventory has got to be a pretty big loss.

Mr. HORN. This is also one of the things which troubles me personally very much because the last one, yes, we've worked very hard and we've brought profitability up and all of those things.

But I'll tell you exactly. On Friday, the 18th, the Notice of Violation was communicated. We had a call with the National Dealer Counsel. Some of the folks are sitting behind me. On Monday, we issued our first financial relief aid. So, we put all the TDIs, used cars, CPO cars, and new cars on free flooring. We took all the bonus thresholds out for car sales. So, we paid maximum bonus for each car sold, and we took also out the customer satisfaction targets objectives and we paid maximum customer satisfaction bonus on those cars. And this is more than \$1,000, \$1,500 per car.

Coming towards October now, we provided every dealer around the U.S. with a discretionary fund, with a discretionary fund which was explained to them through the District Managers, the Sales Operations Managers, and which was wired to the dealers on October 1st.

I don't want to call out the number, but it is a significant amount of money in order for them to have flexibility. So, no accountability towards us; flexibility to solve the most urgent customer cases or to invest or to put the money where they think it would be fit.

And now, when I come out of this congressional hearing, on Friday we look at the next programs in order how can we help the dealers with the cashflow of their cars, for the cash position. Because one thing is very, very clear—and I'm damned sincere about this—the dealer profitability of this country is my first objective. And I said this on January 1st and I continue to say this. So, this is one part.

And also, on Friday we look very intensively into the customer remedies and what we need to do to the customers. And there will be the first scenarios on the table.

Mr. MURPHY. All right. Thank you. The gentleman's time has expired.

I now recognize the ranking member of the full committee, Mr. Pallone, for 5 minutes.

Mr. PALLONE. Thank you, Mr. Chairman.

Mr. Horn, your statements so far don't give me much confidence that we are ever going to see a fix for these vehicles that are impacted. You know, you say that you can't be fixed by a software-

only solution. You don't have the necessary timetable as to when the fix is going to begin.

Have you been given enough information about how the defeat device affects the engine to actually make informed judgments on whether the fix will actually work? I mean, how do we know that what you are proposing to do is actually going to work?

Mr. HORN. Whatever I tell you here today is agreed and is coming from the Technical Engineering Department in Wolfsburg. And alongside our actions in Europe, we have to have our actions in the U.S. And the technical—

Mr. PALLONE. No, I understand, but is it fair to say that you really don't know whether you can fix these vehicles to achieve the emissions standards?

Mr. HORN. We know that we can fix these vehicles to achieve emission standards.

Mr. PALLONE. All right. But, then, what happens with regard to other things like fuel economy, engine performance? You know, people bought these vehicles thinking that they were going to meet the emissions standards. They were going to have good fuel economy. They were going to have good engine performance. Can you guarantee that any fix you make to the vehicles doesn't affect fuel economy or engine performance or both?

Mr. HORN. At this point of time, my understanding is, if we correct the nitrogen oxide emissions to the emissions standards, the customer will get the MPG on the Monroney label. That's my current understanding. Whether the full performance of the car—and this is something also our chairman, Matthias Mueller, or CEO, Matthias Mueller, said in Germany—maybe on top speed they might be, 1 or 2 miles per hour might be missing, but this is, of course, something which we will share with the agencies. But current understanding is that the customer will keep the Monroney label miles per gallon.

Mr. PALLONE. I mean, the concern I have is, you know, when you buy one of these cars, you are relying on not only the emissions standards, but the fuel economy is good and the performance is good. I think you get to the issue of damages here. In other words, if I am an owner and the fix doesn't achieve good performance, good fuel mileage, then I am going to expect to be compensated in some way if that is not the case.

And I just remain concerned that any fix is going to substantially change the cars and that it is unfair to the consumers who bought the cars and relied on them because they expected them to perform a certain way. But you are telling me that the fix will guarantee good performance and will guarantee good fuel economy?

Mr. HORN. I said, to my current understanding, in achieving the emissions standards, the Monroney label miles per gallon will be achieved. There might be a slight impact on the performance. And this is naturally not only the discussions with the agencies, but, of course, we will look into compensating our customers. And, of course, if there would be significant differences, this would be part of the discussion.

Mr. PALLONE. Well, let me get to another issue. What about the impact on clean air? I mean, we know that there's all kinds of health impacts, asthma, other respiratory illnesses that can seri-

ously affect people, send them to the hospital that get sick because of NOx and these other problems. I mean, you obviously agree that NOx pollution can result in serious health and environmental effects. I would assume you would agree with that.

Mr. HORN. I have also read the EPA statement, that in general, and not specifically to Volkswagen, they have indicated that there might be respiratory problems which could also lead—I mean, I am quoting yesterday, basically—to hospital visits.

Mr. PALLONE. Well, what are you going to do to rectify that? How do you plan to mitigate the harm caused by this excess pollution emitted into the air over the last 7 years? My understanding is that the NOx emissions from the affected vehicles are up to 40 times the allowable limit. So, what are you going to do with regard to this excess pollution and the impact it may have had?

Mr. HORN. I think there's, first of all, many different studies. And so, I would like to go back to the EPA yesterday, of what they said. I think it will be part of the discussion.

But I would also like to point out that, if you look at 100 percent of nitrogen oxide emissions in the U.S., the car and truck industry is having 5 percent. Our group here in the U.S. has 4 percent of the 5 percent, which is .2 percent. And of this, 20 percent is TDI, which is .05. And now, we can multiply this, which is not belittling this and it's clearly unacceptable. But, within this context, clearly, the discussion will come up and needs to be addressed.

Mr. PALLONE. All right. Thank you.

Thank you, Mr. Chairman.

Mr. MURPHY. I now recognize Ms. Blackburn for 5 minutes.

Mrs. BLACKBURN. Thank you, Mr. Chairman.

Mr. Horn, you said profitability is your top priority when you were speaking of the dealers and—

Mr. HORN. For the dealers, yes.

Mrs. BLACKBURN. Yes. I would hope that safety, quality, integrity are top priorities, and profitability comes along there as a part of that picture.

Let me ask you about this. Are you going to buy back the inventory that the dealers have?

Mr. HORN. No, our plan is not to buy back—

Mrs. BLACKBURN. No?

Mr. HORN [continuing]. The inventory.

Mrs. BLACKBURN. Not to buy back? OK.

Mr. HORN. Our plan is to fix the cars.

Mrs. BLACKBURN. OK. Let me move on with you. Have you identified the individual or group of individuals that are responsible for the defeat device?

Mr. HORN. These investigations are ongoing.

Mrs. BLACKBURN. You have known about this since the spring of 2014, a year and a half.

Mr. HORN. We know about this since September 3rd, that the violation is there. And since this time and since the September 18th Notice of Violation, the Board has acted and has asked Jones Day to investigate.

Mrs. BLACKBURN. But you have known that there was some activity around this defeat device since the spring of 2014, correct?

Mr. HORN. No, I did not know. As I have said—

Mrs. BLACKBURN. OK. So, you did not know it in the spring—

Mr. HORN. No.

Mrs. BLACKBURN [continuing]. Of 2014?

Mr. HORN. No, again.

Mrs. BLACKBURN. So, you just learned about it September 3rd, 2015?

Mr. HORN. Around the September 3rd events, yes.

Mrs. BLACKBURN. OK. All right. Let's go to your six-point remedy plan. You have talked some about point 3, which is that they are developing remedies. And I would assume, if this landed on your plate September 3rd, that you all have put all efforts and energy into this plan, correct, into the remedies?

Mr. HORN. Yes, correct.

Mrs. BLACKBURN. Very good.

All right. Then, let's go to point No. 1. You state that Volkswagen will examine its compliance processes and standards and adopt measures to make certain that something like this cannot happen again.

Mr. HORN. Uh-hum.

Mrs. BLACKBURN. So, why don't you give us a little bit of specificity on that and what, if any, steps are currently underway to handle these compliance issues? What did you start as of September 3rd, 2015 and what is your timeline? How long is it going to take you to bring this into compliance?

Mr. HORN. So, as I am the CEO of Volkswagen Group of America, I can only report to you on what is managed by Volkswagen headquarters worldwide at this point of time. And as I've said, it's Jones Day. They manage all the investigations in terms of who did what, when, how, and why, and what do we need to do in order to rectify this for the future in terms of process adjustments and compliance adjustments.

Mrs. BLACKBURN. So, then, you are saying that, as of now, you do not have a plan?

Mr. HORN. As of now, we are still in the investigation phase.

Mrs. BLACKBURN. OK. When can we expect you to have a plan to handle compliance, to make the owners of your vehicles whole, if you will, to make the dealers that have trusted in you, to make them whole? Also, the individuals that are employed by your facilities, when are they going to have some certainty as it relates to the jobs?

So, you all say you are still investigating. So, on your timeline, when do you expect that you are going to be able to say this is the way forward?

Mr. HORN. You mentioned six points, and we started with the first point, compliance. I don't have a timeline for this yet.

Mrs. BLACKBURN. OK.

Mr. HORN. We are working instantaneously with the dealers and developing plans by the week as we go, as we go. And you can ask those folks behind me on whether this works or not.

And for the customer, it depends on the technical remedies. So, again, this is Generation 3. January this year, January next year—sorry—we will start to give the software to the agencies. Generation 2, the middle of the year. Most probably, Generation 3, due to the technical complexity, will be a little bit later. So, there's dif-

ferent timings, and I apologize not for having a full-fledged plan of the Board by Volkswagen company right now here in my pocket.

Mrs. BLACKBURN. So, you are certain it is going to be a multiyear plan?

Mr. HORN. Excuse me?

Mrs. BLACKBURN. You are certain the remedy will end up being a multiyear approach?

Mr. HORN. Yes. If you look alone at 430,000 cars and the repairs might take 5 to 10 hours even in order to fix this, you know, technical fixes, and if you look at your recall history in this market, also with NHTSA, then these actions take, you know, 1 or 2 years minimum—minimum—when the fix is available for everybody, including parts and discussed with the agencies and agreed to.

Mrs. BLACKBURN. OK. Let's see, my time has expired.

I do have one other question about point 2 in your remedy plan. Mr. Chairman, I will submit that and yield back the time.

Mr. MURPHY. Thank you. Thank you very much.

Now I recognize Ms. Castor for 5 minutes.

Ms. CASTOR. Well, thank you, Mr. Chairman, for calling the hearing.

Mr. Horn, according to reports, VW's defeat device is found in nearly 500,000 vehicles. Are you confident in that number? Could it be more? Could it be less?

Mr. HORN. We are very confident in this number.

Ms. CASTOR. Pardon me?

Mr. HORN. We are very confident in this number.

Ms. CASTOR. OK. Have you calculated the loss in value to customers, car owners?

Mr. HORN. No, not yet. That's a matter of not only the investigations, but the calculations are ongoing. And on Friday, we will look at the first scenarios.

Ms. CASTOR. OK. You have called your investigation preliminary, but you have known about this for a year and a half. The problems first came to light in May 2014, is that correct?

Mr. HORN. No, this is not correct. As I explained, the study was published, and I had no reason to believe that there was a defeat device in those cars.

Ms. CASTOR. Well, you found out, according to reports, in 2014 that there was an issue, isn't that correct?

Mr. HORN. An emissions issue, yes, that's correct.

Ms. CASTOR. So, what did you do at that point in time?

Mr. HORN. At that point of time, a plan was asked for from the engineers. And in July 2014, middle of the year, they presented a plan to me which was—and this is very important also—which was agreed and discussed with the Product Safety Committee worldwide. And these are those guys who manage all the recalls, all the service actions worldwide, including technical, procurement, legal, service, and those things.

They came back with a plan, first of all, acknowledging that those results were correct and, secondly, with a clear timing on when those cars would get a software fix, which was also mentioned in one of the opening statements, as of the end of last year.

Ms. CASTOR. Do you feel like you have been personally deceived now, after you found out subsequently that the defeat devices—

Mr. HORN. Yes. Yes, and—

Ms. CASTOR. Explain that.

Mr. HORN. Look, I worked 25 years for this company. And beyond my personal objective of dealer profitability, integrity, quality, you know, and not cheating, was always for me a given for this company.

Ms. CASTOR. And another—

Mr. HORN. When I learned this, I am as touched and moved—sorry—as my employees and as my—

Ms. CASTOR. Another group feeling the effects of the VW defeat device defrauding are the VW dealers and their hard-working employees all across this country, in addition to consumers. A recent Associated Press article noted that dealers are facing, quote, “a lot of angry calls, emails, et cetera, from Volkswagen owners” who feel betrayed because they believed they had bought a car that polluted less without sacrificing all the good gas mileage and the performance that comes with a diesel engine.

Mr. Horn, how many VW dealerships are there in the U.S.?

Mr. HORN. We have round about 650 VW dealers and 350 Audi dealers.

Ms. CASTOR. And on average, how much of a VW’s business do these diesel models—

Mr. HORN. Twenty-five percent.

Ms. CASTOR. And these dealers are now the frontline—

Mr. HORN. Yes.

Ms. CASTOR [continuing]. For unhappy customers who feel betrayed by the Volkswagen brand. And a media account yesterday quoted one dealer as saying, “This is the biggest fraud I’ve ever seen.” What do you have to say in response to that? What do you tell these business owners and their employees whose livelihoods depend on—

Mr. HORN. I went immediately out with the Dealer Counsel on a call. I made a dealer video which was sent out, and the dealers even showed it to their children, and their families, and their employees, because they said that’s the right thing on what we are approaching this.

Ms. CASTOR. So, detail for us how VW is informing dealers about the defeat devices and the solutions to fix cars that feature these defeat devices.

Mr. HORN. As soon as we have the information necessary already and have discussed this with EPA and CARB about the timing or alongside, the dealers will be naturally informed.

Ms. CASTOR. They are not getting any information right now?

Mr. HORN. No, of course, they get information.

Ms. CASTOR. So, detail that for us.

Mr. HORN. First of all, they get the information that we financially help them through this crisis. Secondly, the first thing is we took the bonus thresholds out. They have free flooring. They got the discretionary fund. We have increased the incentives by \$2,000 for a loyal customer, for loyal Volkswagen customers, you know, a loyalty program.

Ms. CASTOR. What does that mean?

Mr. HORN. That means we get them started and don’t let them dry out in the field.

Ms. CASTOR. Is that a direct payment to customers or to dealers?

Mr. HORN. The first two points, the bonus payments and the floor plan, is directly to the dealers. The discretionary funds is directly to the dealers. And the incentives are, for them, this is a certain cash incentive that they can manage to bring loyal customers in, whether that is a TDI customer or a gas customer.

Ms. CASTOR. So, is the intention there for the dealers, then, to contact customers who have purchased cars since the model year 2009?

Mr. HORN. Yes, as one of the possibilities, sure, yes.

Ms. CASTOR. Well, VW is not giving any direction to dealers and their employees on contacting customers at this point in time?

Mr. HORN. No, of course, we are having—we have set up frequently asked questions. We are guiding the dealers with real-time the same information we have, and which goes to all call centers as well, because those, you know, I have visited the call center in Auburn Hills. Those people are also frontline. They need the same information, and as soon as we have it, the other people get it as well.

Ms. CASTOR. All right. What has VW told dealers about how existing Volkswagen models will be affected, cars that dealers have already sold and cars that are now sitting on the lots?

Mr. HORN. We've informed the dealers directly on September 18 in a call to the National Dealer Counsel. We followed up with letters and videos to do this.

Mr. MURPHY. Thank you.

Ms. CASTOR. OK, I am out of time.

Mr. MURPHY. The gentlelady's time has expired.

I now recognize Mr. Barton for 5 minutes, from Texas.

Mr. BARTON. Thank you, Mr. Chairman. And thank you and Ms. DeGette for organizing this hearing.

I am not a Registered Professional Engineer anymore, but at one time I was. I still am an engineer by training. My daughter drives a Volkswagen Beetle. My former stepdaughter drives a Volkswagen Jetta. I don't think they are diesel. I think they are gasoline-powered, but they are both Volkswagens.

I have always had the highest respect for Volkswagen. I think it is a fine company engineering-wise, you know, product-wise. But I must tell you, sir, that it is extremely disappointing to look at the—I don't know the right word to use—immorality of the corporate decision to knowingly and willfully cheat on U.S. emissions standards.

I mean, Volkswagen is one of the premiere name brands of auto manufacturing in the world, and it is a reputation that has been gained over the last 50 or 60 years. And to have a company of your stature knowingly and willfully make a decision at the highest levels of the company to put a software program in your products that are meant intentionally to deceive or to cheat on U.S. emission standards, to me, I wouldn't have believed it if it wasn't factually proven.

So, my first question to you is, I am told that this was a decision made in Germany at the corporate level. Is that correct?

Mr. HORN. Two answers to this. First of all, the investigations are ongoing, but this was not a corporate decision, from my point

of view. To my best knowledge today, the corporation in no Board meeting or no Supervisory Board meeting has authorized this, but this was a couple of software engineers who put this in, for whatever reasons. And I would also like to find out, and I fully agree to your other statement.

Mr. BARTON. And this is an oversight hearing, so I assume that you are testifying under oath, is that correct?

Mr. HORN. I am under oath. I understand this, sir.

Mr. BARTON. OK. So, what you are saying is that the senior, the president of Volkswagen International did not know about this when it happened?

Mr. HORN. What I said was, to my understanding, this was not a corporate decision. This was something individuals did.

Mr. BARTON. OK. Now that is not what I was led to believe, but I take you at your word. So, I will ask the second question.

When did senior management, i.e., the president of Volkswagen International, the executive vice president, whoever your senior day-to-day corporate officers are, when did they learn of this action?

Mr. HORN. To my understanding, also around the September 3rd notification of the agencies.

Mr. BARTON. But it occurred years ago.

Mr. HORN. Yes, sir.

Mr. BARTON. Do you really believe, as good, as well-run as Volkswagen has always been reported to be, that senior-level corporate managers/administrators had no knowledge for years and years?

Mr. HORN. I agree it's very hard to believe.

Mr. BARTON. Yes.

Mr. HORN. And personally, I struggle as well, yes.

Mr. BARTON. That is an honest answer. I appreciate that.

Well, I don't know what to do, but I do know that you can have an honorable disagreement about emissions standards, and we have had that on this committee. But, as somebody who voted for the Clean Air Act Amendments and as a conservative who believes that, if it is the law, it should be implemented, and corporate, especially international corporations should honor those laws, your company has not. I don't know what the penalty should be, but it should be more than just a slap on the wrist.

I mean, I am going to listen to the rest of the testimony and the questions and the staff recommendations, but in every other case since I have been a Congressman, when we have had problems with manufacturers, automobile manufacturers, in every case it has been something happened that was really a mistake, an accident, that they just didn't foresee it. That is not the case here.

Mr. HORN. Yes.

Mr. BARTON. There was a knowingly and willful decision to deceive in one of the most important markets in the world, and that, sir, is just wrong.

And with that, I—

Mr. HORN. We agree.

Mr. BARTON. Thank you, sir.

Mr. MURPHY. Thank you.

I now recognize Mr. Kennedy for 5 minutes.

Mr. KENNEDY. Thank you, Mr. Chairman.

Mr. Horn, thank you for being here today.

I understand you have said several times your testimony is preliminary and there are investigations ongoing. So, I appreciate that and I recognize that.

I do want to go back to what a number of my colleagues has gone to with regard to the timeline here. My understanding, and from your testimony, was that in the spring, I think specifically May of 2014, was when Volkswagen became aware that there was some issue with regard to emissions, is that right?

Mr. HORN. Yes.

Mr. KENNEDY. And then, it was from May to December that CARB and EPA launched investigations into those, the emissions, and the company itself, VW, started an investigation as to what led to the oddities, if you will, with regard to the emissions testing, right?

Mr. HORN. I can't answer this really. I mean, I know that the actions to remedy these findings were discussed with CARB and EPA. Whether they have undergone their own investigations between May 2014 and December 2014, I don't know. I know they did this afterwards, when we started to flesh the cars with the new software.

Mr. KENNEDY. So, oK. If I tell you that EPA and CARB continued an investigation after that preliminary report from May and they continued their investigations, then December 2nd, 2014, VW shared test results with EPA and CARB and proposed a recalibration fix, is that accurate?

Mr. HORN. Yes.

Mr. KENNEDY. And then, VW initiated a voluntary recall of approximately 500,000 vehicles to try to deal with that recalibration issue. In May, CARB commenced testing, May 6th, I believe, 2015, CARB commenced testing to discern whether the fix that VW had proposed adequately and accurately fixed the underlying issue.

Mr. HORN. Uh-hum.

Mr. KENNEDY. May 6th through July 2015, CARB conducted laboratory and on-road testing to confirm the efficacy of the recall. What I am getting at here, sir, is July 8th CARB shared test results with VW and the EPA, prompting a series of technical meetings, from my understanding. And according to CARB, in the course of those meetings, VW disclosed that there were several issues, that Gen 1, Gen 2, and the 2015 model of the improved SCR vehicle known as Gen 3 had a second calibration intended to run only during confirmatory testing. So, there was some knowledge at least in July of this year that there was some manipulation of software code with regard to the testing, was there not?

Mr. HORN. This meeting you're referring to, I don't know. I can tell you that the first issue that got back to me and to my attention was on the 20th of July when my people of Product Marketing came to me and said we don't get the model year '16 diesel certified.

And then, I immediately wrote a letter or an email to Dr. Jakob Neusser, the EDP for Research and Engineering in Wolfsburg, and I escalated this. And the explanation was twofold: (A) There were new systems, and I don't know whether this is right; and (B) there is still information missing. So, also my teams in Herndon with the

National Science Company did not have this information. And then, only in the weeks afterwards it started to unfold.

Mr. KENNEDY. And so, sir, if I am understanding kind of the broad aspects of your testimony correctly, this is something—as you have said a number of times, this was not a company decision. This was a decision made by a number of individuals yet to be ascertained underneath at some other levels of the company that does not affect a corporate decision by the Board, by yourself. Is that accurate?

Mr. HORN. That's my understanding, yes.

Mr. KENNEDY. So, as of now, at least according to press reports as of this morning, there's four individuals that have been suspended. Is that right?

Mr. HORN. I don't know. This is press reports.

Mr. KENNEDY. To your knowledge, has anybody been suspended to this point?

Mr. HORN. I can't share names with you. There is no information—

Mr. KENNEDY. I am not asking for names. Has there been anybody that has been suspended at this point? Has anybody, as of now, after Volkswagen, for knowing at least of some inconsistencies with test reports for the past 18 months, has anybody been suspended or lost their job?

Mr. HORN. To my understanding, there have been three people suspended, but I cannot share the names here, due to German law.

Mr. KENNEDY. And I am not asking for the names, sir.

You mentioned the figures, roughly, that this would take 1 to 2 years, 5 to 10 hours per car, in roughly 430,000 cars. Do you have any estimate at this point as to what the direct losses for Volkswagen would be because of this incident?

Mr. HORN. I think the losses are depending (A) on the fines we will get and we will have to pay, and then, also, (B), on how much money it takes to fix those cars, and (C) on how much money we will have to pay to compensate the customers for what we did. And this is a whole lot of money, I'm quite sure.

Mr. KENNEDY. And so, sir, I think the overall question that you are sensing from myself and colleagues is that I understand that this was a decision that you are indicating was made by people underneath you. It does get to the overall corporate integrity of the company. And so, what, if you can say, is going to be done to restore faith in the overall corporate structure of Volkswagen?

Mr. HORN. First, a very important clarification. It was not done by people under me. I'm the CEO, president and CEO of Volkswagen Group of America. And those things have been developed in the relevant software departments in Germany, which is totally out of my jurisdiction or steering.

And the second, to get your answer hopefully in the right way, with the compliance investigations, we have to streamline our processes and this company has to bloody learn and use this opportunity in order to get their act together. And 600,000 people worldwide have to be managed in a different way. This is very, very clear.

Mr. KENNEDY. Thank you, sir.

Mr. MURPHY. I recognize the vice chair of the full committee, Mr. McKinley, for 5 minutes.

Mr. MCKINLEY. Well, thank you, Mr. Chairman.

Several things. First, you opted not to challenge the WVU decision, the research that was done. So, you have not challenged the research that was done. Everyone has recognized you did knowingly, then, violate, is that correct?

Mr. HORN. I don't understand this question, sir. I'm sorry.

Mr. MCKINLEY. You opted not to challenge or appeal the findings from the WVU. So, does that mean—

Mr. HORN. From?

Mr. MCKINLEY [continuing]. That you knowingly violated?

Mr. HORN. No. No, sir.

Mr. MCKINLEY. You did challenge and appeal the WVU findings?

Mr. HORN. I did not challenge because software actions, recalls, service complaints, in the millions for this company, is normally doing business. I was worldwide Service and Parts executive for Volkswagen worldwide. I've been to the Product Safety Committee. I know how the system is working with all the experts and that we got a seal of approval onto those actions, and I'm not the technical experts.

Mr. MCKINLEY. OK.

Mr. HORN. It has enough people in the system—

Mr. MCKINLEY. Let me get to the crux more of my question. I know the EPA fines. We just had a situation where a small poultry farm was fined \$17,000 a day because they were allowing dust to come out of their chicken house out into the neighbor. And we have seen steel mills being fined \$3, \$5, \$7 million daily until they clean up their discharge into a river. We have seen coal mines and other operations.

So, there has to be, I think you can understand there ought to be consequences for this violation. So, I am curious, I assume you are accruing something on your financial sheets for what could be a fair, what could be an expected penalty for having violated the laws here of the United States. Can you share with us or will you share with us what you are accruing on your balance sheet for penalties, expected penalties?

Mr. HORN. Yes, yes. For the time being, I mean, there an official information that the company has accrued directly 6.5 billion euros in the first step in this year. Maybe this is enough; maybe this is not enough. I don't know. And the rest will have to be worked out with the specific experts, as we have hired enough experts, I can tell you.

Mr. MCKINLEY. Thank you.

Now, when you import your vehicles in, you have to provide a Certificate of Conformity with the EPA standards. And from what I understand, the defeat device was not included in that Certificate of Conformity, is that correct?

Mr. HORN. That's my understanding, yes, sir.

Mr. MCKINLEY. Can you share with us why someone tried to deceive the American Government, why that wasn't included in the application of conformity?

Mr. HORN. Because those people who did the applications most probably did not know, did not know that it was in there.

Mr. MCKINLEY. Can you share with us who is responsible for this failure to include a description? Is this limited to one, two people?

Mr. HORN. We have an office which is called EEO in Auburn Hills which is directly linked to the German Research and Development Department. They work together. They get all the informations, all the results testing things, technical specifications, and then, they file the applications for conformity and all those.

Mr. MCKINLEY. Mr. Horn, thank you for testifying before us.

Just one question is, we have all, many of us have been talking about this defeat device. For the American public to understand what this is, can you explain what this defeat device is and how it functions?

Mr. HORN. Yes. To my understanding, the defeat device is not a device, but it's a software code in the engine and exhaust system management which detects, this software detects whether a car is on the dyno testing environment or whether the car is on the road being driven.

And one example, for instance, is the steering wheel angle and how many times it has been changed. Because once a car is on the dyno, it is on the dyno. Nothing changes. And if the car is on the street, the steering wheel changes. And that since there's so many sensors in there, these are one of the examples people gave me on how this device, which is a software code again, worked, but hidden in millions of software codes. So, if you don't know this, it is very difficult to detect, from my limited technical understanding.

Mr. MCKINLEY. Thank you. I yield back my time.

Mr. MURPHY. Thank you. The gentleman yields back.

I now recognize Ms. Schakowsky for 5 minutes.

Ms. SCHAKOWSKY. Thank you, Mr. Chairman.

I have in my hand a letter from Volkswagen that was sent to one of my senior staff because she is an owner of your car. I remember when she bought the car and how excited she was about the clean diesel.

The letter says, "Your vehicle remains both safe to drive and legal to drive. You do not need to take any action at this time. All we ask is for your patience."

I have to tell you, if I were a driver of one of these vehicles that is contributing up to 40 times the amount of emissions, I would want that addressed right away. I have a son and a grandchild who regularly uses an inhaler. I am not excited about contributing to or driving a car that has that kind of emissions.

So, how much patience is my staff supposed to have? What is the timeline here? What is the best scenario and the worst scenario in terms of timeline for fixing this?

Mr. HORN. For the Generation 3 cars, this is model years '16 and '15, the timeline is beginning of next year a complete fix. For the Generation 2 cars, it's still under development. This won't start, from my judgment, before the middle of next year. And for the Generation 1 cars, which is the biggest feat, I cannot give you a date right now, but within the next couple of weeks we will start discussing those scenarios with EPA and CARB, and alongside the development guys will have to do that—

Ms. SCHAKOWSKY. So, these cars unfixed could be on the road for more than a year, let's say?

Mr. HORN. Yes.

Ms. SCHAKOWSKY. Or 2 years?

Mr. HORN. More than a year, definitely.

Ms. SCHAKOWSKY. I wanted to follow up on a question that Mr. Pallone asked. It sounded like you were saying that the fix could manage fuel economy, engine performance, and emissions, that all of that could be fixed. If that is so, why didn't Volkswagen do that initially? Why wouldn't you make a car that would achieve those goals?

Mr. HORN. I think it's a great question.

Ms. SCHAKOWSKY. I mean, I can only assume that maybe cheating was cheaper?

Mr. HORN. To my understanding, what I've learned, some people have made the wrong decisions in order to get away with something which will have to be found out.

Ms. SCHAKOWSKY. Let me ask you this: have you considered financial compensation—for example, allowing customers to actually return the car for what they paid for it?

Mr. HORN. This is one of the areas we're looking into right now in terms of how to compensate our customers, yes.

Ms. SCHAKOWSKY. Providing rebate for lost value of the car?

Mr. HORN. Sure.

Ms. SCHAKOWSKY. And what about right now, if I had one of those cars and I wanted a loaner, would you compensate the dealer to give me a loaner instead of having to drive that polluting car?

Mr. HORN. We would have to discuss and consider this. Right now, I would say no, honestly, because the EPA has said these cars are legal and safe to drive.

Ms. SCHAKOWSKY. And so, even you know that there is up to 40 times more pollution, if I went to my dealer, who might because they are in a fix right now say, "OK, well, we will give you a loaner," the company would not do anything to make ultimately your customer happy?

Mr. HORN. So, there's a general policy, and this is exactly the reason why we gave the dealers the discretionary funds which they could use at their discretion in order to help customers, very significant cases. And whether they do a loaner car program for the specific customer or whether they take them out of the car, or whatever they think is best in this specific customer's situation, they can do it with this money. No questions asked, yes.

Ms. SCHAKOWSKY. But there is no policy that dealers could say that loaners would be available? I realize 500,000 loaners would be probably a hard thing to do.

Mr. HORN. Right.

Ms. SCHAKOWSKY. But you see how that would be a desirable remedy for many people?

Mr. HORN. I understand your point, yes.

Ms. SCHAKOWSKY. Yes. Well, I just want to tell you, as a consumer advocate all of my life, this is pretty shocking for people to find out that a company—we have had a number of recalls. I have had a recall on one of my cars. But to find out that a company has deliberately cheated, it seems to me that asking customers for patience is just really not sufficient.

I heard people on the radio who were repeatedly saying, "I just want you to take back my car and give me the amount of money that I paid for it. I don't want that car. I don't want a fix because it may not provide exactly what I thought I was buying in the first place." I would hope that your company would consider that as a primary remedy.

And I yield back.

Mr. MCKINLEY (presiding). Thank you.

The Chair recognizes Dr. Burgess for his 5 minutes of questioning.

Mr. BURGESS. Thank you, Mr. Chairman.

And let me just stress that I am as far ideologically from Jan Schakowsky as possible, and I am not here to provide you advice, but I think she is giving you good advice. I have been on this subcommittee for over 10 years.

I have been through Toyota. I have been through General Motors. And now, we are doing this investigation. And let me just suggest to you, and let me just suggest to your corporate structure in Germany, that being dismissive and minimizing the problem that is faced by consumers, dealers, suppliers is not in your best interest and it will hurt you. So, I would be aggressively compliant and aggressively trying to make it right for your customers, dealers, and suppliers because in the grand scheme of things I actually believe that will be less costly in terms of dollars, in terms of reputation, and just in terms of the endurance of the brand in the United States, which you have already heard from members of this committee is significant. Our histories with your company all are significant. They go back a significant way.

Now that I have gotten that off my chest, let me just ask you once again—you have been asked before—but are these vehicles safe to drive?

Mr. HORN. Yes. Yes, the EPA has said these vehicles are safe to drive.

Mr. BURGESS. So, this is unlike some of the other recalls that we have talked about in this subcommittee, problems with airbags, problems with electronic throttle controls. These do not pose an immediate jeopardy to the life of the driver or the passengers?

Mr. HORN. I trust the judgment of the EPA, yes.

Mr. BURGESS. Now, trusting judgment, that is what we are doing here today, is we are talking that trust factor has been eroded.

Let me just ask you, when you stress that you are the CEO for Volkswagen of America, is that correct?

Mr. HORN. Yes, sir.

Mr. BURGESS. But do you travel back and forth to Germany from time to time?

Mr. HORN. Too often right now not much.

Mr. BURGESS. Yes, well, have you been in the month of September?

Mr. HORN. Yes, usually once a month, yes.

Mr. BURGESS. Usually once a month? So, as this problem has evolved or the information about this problem, have you gone to the engineers over in Germany and said, "Guys, what's up here? How did this happen?" Have you looked at any lines of software code where someone has identified for you this has happened or

have you held in your hand a defeat device that was added to an automobile?

Mr. HORN. Personally, I have taken out Mr. Mueller of conference rooms, Dr. Diess out of conference rooms, and personally talking intensively to the engineers on how we make this right. And to other questions, you know, "How is this possible?", "Who has done what?", they said, "We didn't know ourselves."

Mr. BURGESS. Yes, but do you understand how that just defies credulity? I mean, here is a software program—

Mr. HORN. Yes.

Mr. BURGESS [continuing]. That wasn't just written, I mean, I am suggesting here it was written by one person in their basement in the dark of night. I mean, this had to be a team of people who were working on this.

You have got these rascals over here at the EPA in the United States, and they are just hard to deal with. So, we want to do something that we will be able to sell our cars, and we will just trick them. We will just trick them. And then, somehow you are going to integrate that into the supply chain of a multinational corporation, and nobody knows a darn thing about it? I mean, that is what you are asking us to believe. And you understand why, and you have heard it from a number of members, the incredulity that that could, in fact, happen in a large multinational corporation.

Mr. HORN. I fully agree, sir.

Mr. BURGESS. Have you asked that question to the people—

Mr. HORN. Yes.

Mr. BURGESS [continuing]. Who are superior to you at Volkswagen in Germany?

Mr. HORN. Who was superior to me, the guy is not on board any longer. He is called Christian Klingler. He resigned due to other reasons.

Mr. BURGESS. Well, I almost just don't know what to say. Apparently, in the public domain in the early or middle part of the last decade there was some suggestion that Volkswagen, in an effort to try to sell its diesel high-mileage vehicles in this country, was in the process of leasing software to deal with this emissions problem from another company, is that correct? Blue Tech Software, I believe, is the name that is used.

Mr. HORN. I have read this in the newspapers, yes.

Mr. BURGESS. OK. So, it is in the newspapers. Have you, yourself, looked at why did they look at this and, then, stop those negotiations for those leases? What changed? Did we develop some technology at Volkswagen? Did we develop a defeat device at Volkswagen? I mean, these are some of the questions that are just going have to be answered.

Mr. Chairman, let me just say that I recognize and I appreciate Mr. Horn being here. I think that we are doing this hearing prior to the time that your document production deadline expired. So, we recognize that you are here voluntarily and it is your sincere effort to comply with the wishes of the committee.

But let me just say, all of us represent dealers, consumers, suppliers, and their lives and livelihoods are extremely important to us. And that is what we have got to keep first and foremost.

I yield back, Mr. Chairman.

Mr. MCKINLEY. Thank you.

And the Chair recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman.

And for our witness, we have other subcommittees going on. So, you will see members come in and out during the day.

When I first heard about it, I was amazed that a company that is as great as Volkswagen could let this happen, and even to the executives maybe who didn't know, because the image of the company, not only in our country, but in Europe and around the world, is so great.

Our committee wants to get some answers, and I would like to understand more about Volkswagen's own investigations in your efforts to find the cause of the debacle. News reports discuss several internal and external investigations initiated by Volkswagen. Mr. Horn, please explain Volkswagen's own investigations into this incident and how they are different from each other.

Mr. HORN. The investigations started—I talked yesterday to our head of Group Revision—on September 22nd, this year, went on with our own Group Revision Department, Group Compliance Audit Department until September 29th, for one week. And then, all the documents, all the preliminary documents were turned over to the American law firm Jones Day, who is investigating this on behalf of our Supervisory Board.

Mr. GREEN. OK. News reports have discussed several internal and external investigations. So, that was the only one you had, that was the auditors from September the 22nd to the 29th? Are there any other investigations Volkswagen is conducting?

Mr. HORN. To my understanding, after the Notice of Violation, and from September 18th, from CARB and EPA, these investigations have started right away. And this is what I have told you, to my best knowledge. I don't know of any other investigations.

Mr. GREEN. Do you know if the actions are in the United States or Germany or in both or everywhere where Volkswagen has sold these vehicles?

Mr. HORN. Worldwide.

Mr. GREEN. OK. Would you commit to sharing these investigations with the committee, the results of these investigations?

Mr. HORN. I commit to get as much information as possible to this committee, yes.

Mr. GREEN. OK. Thank you.

Last week one news outlet reported that, quote, "The Steering Committee of the carmaker's Supervisory Board met last Wednesday to discuss the preliminary findings of the probe into the scam." And that is a quote. What were these preliminary findings that were revealed last Wednesday?

Mr. HORN. Sorry, I'm still a little bit confused by those folks here down there clicking all the time. Could you please repeat your question, please?

Mr. GREEN. OK. There is a quote, "The Steering Committee of the carmaker's Supervisory Board met last Wednesday to discuss preliminary findings of an internal probe into the scam." What were these preliminary findings that were released last Wednesday?

Mr. HORN. Our own Supervisory Board of Volkswagen AG. I don't have access to these preliminary findings.

Mr. GREEN. Can you get a copy of it and share it with our committee?

Mr. HORN. I can definitely try, sir.

Mr. GREEN. Pardon?

Mr. HORN. I can try, sir.

Mr. GREEN. OK. You are the CEO.

Mr. HORN. I am the CEO of this company, and then, there's the Supervisory Board and there's a group of people who are quite above me in Germany, and the Supervisory Board has to make this decision.

And I think, you know, with the commitment that our company has, there is a very good chance that the company will provide at one point of time the necessary documents to provide more clarity into these facts here and to this issue.

Mr. GREEN. Again, like my colleague, I appreciate you being here voluntarily, but it would be great if we could actually get that in our committee for our investigations.

According to a September 30th news report, Volkswagen's Supervisory Board member Olaf Lies said, quote, "These people who allowed to this happen or who made the decision and saw this offer, they're acting criminally. They must take personal responsibility."

Mr. Horn, do you agree with that?

Mr. HORN. Yes, sir.

Mr. GREEN. OK. Do I have your commitment to full cooperation in finding and addressing the roots of the deception?

Mr. HORN. Sure. Yes, sir.

Mr. GREEN. And again, our committee is ongoing, our investigation. And I appreciate your being here.

Mr. Chairman, I will yield back my time.

Mr. MCKINLEY. Thank you. Thank you.

For the rest of the members with questions, I know we have got a break here in 20 minutes, but we have got 7 people that want to speak. So, we are going to be very short on the timeframe with this.

But the Chair recognizes Mr. Griffith for a short list of questions.

Mr. GRIFFITH. Thank you. I appreciate it.

As you have heard from others who have owned cars and learned to drive, I am one of those as well. My mother was able to afford her first new car, which was a Volkswagen Squareback. And that is what I learned to drive on. It was a manual. I have inherited my grandmother's 1972 Super Beetle, which I still have.

In the eighties I drove a Rabbit. In the nineties, I bought a gas-powered Jetta. When it got close to 200,000 miles, my mother convinced me that even Volkswagens couldn't go on forever. She might have been wrong. I sold that car and bought a 2003 gas-powered Passat, which I drove until this summer and got 376,225 miles. And the people who bought it from me are going to tell me when it crosses 400,000. They think that there won't be any problem in doing that.

As a backup to my 2003 Passat that was going and going and going like the Energizer rabbit or bunny, I bought a 2012 Volkswagen diesel. So, everybody else is talking about what are con-

sumers thinking. You are looking at him. I am your consumer. I am your Volkswagen driver who has always trusted your company, and I am very disappointed.

So, what are we going to do? First, you have indicated—and there could be some differences in understanding in language—you have indicated that you have notified the customer. I have checked with the previous owner. I bought the car from a friend. They have not received any notice that this 2012 diesel Passat is affected. When you go to the Web site, it says that you all received notice from the EPA that some of your two-liter, four-cylinder TDI vehicles don't comply, and among the included vehicles, of course, is the 2012.

Because I am not skilled like Chairman Murphy, I am not skilled and I couldn't take a car apart. I had a hard enough time figuring out how to get the top off, the plastic lid off of the engine to try to take a look at it.

But, when you see that and it says some of the cars are affected, and here's one, and the original articles referenced the '14s and '15s, but didn't say anything about the '12s and the '13s, and then, you see a Volkswagen document that says discrepancies relate to vehicles with Type EA 189 engine, and I am looking in my manual and I am looking at things on the engine block, and it doesn't say anything about an EA 189 engine.

Now the team on the committee here and, then, my staff have figured out I am affected. We know that. But this was done at great trouble. I have received no letter. I can't tell for sure.

And I will tell you what was interesting was we found that there was actually a site in the UK—and I know you are just America and I am just talking about America—where you can actually plug in your VIN number and it will tell you if you are affected. I would encourage you to consider that because, while you may think you have notified everybody, not everybody is capable of taking apart the engine and figuring out if they are an EA 189.

And then, the other big question is, am I Generation 1 or Generation 2? They tell me I am Generation 2, which I found surprising based on the numbers that you have testified here today. Can you confirm that I am a Generation 2?

Mr. HORN. If you have 2012 Passat, I would think so now, right.

Mr. GRIFFITH. OK.

Mr. HORN. Yes.

Mr. GRIFFITH. And so, this is something else that you might want to put into your—it is a pretty simple Web site that takes the VIN numbers that are affected and says you are Generation 1, you are Generation 2. Because it sounds like the fix, as I am listening today, the fix to the Generation 2 is more simple than the fix to the Generation 1. Am I correct in hearing that today? It is a simpler fix for Generation 2 than for 1?

Mr. HORN. Yes.

Mr. GRIFFITH. And then, I would have to echo what Representative Schakowsky and Dr. Burgess had to say. You know, when you buy a vehicle, even if you bought it used, and you are looking in the manual and it says, "Under Federal Emissions Control System Defect Warranty, was designed, built, and equipped so as to conform at the time of sale with all applicable regulations of the

United States Environmental Protection Agency (EPA), and is free from defects in material,” et cetera, I believe that I was sold something that was different than what it was purported to be.

And my friend didn’t do the defrauding. It was the Volkswagen company. I think you are much better off to come up with a program that buys these cars back because, you know, I understand it wasn’t your folks in Chattanooga that made this mistake, it was the folks in Germany. But you have got to restore trust, and one of the ways to do that is to stand behind your vehicle.

One of the reasons that I have liked the company is that on my 1990s version something was wrong with the paint. No questions asked. When I took it into First Team Auto Mall in Roanoke, they said, “Not a problem. We’ll take care of it.” And it was done. Never had another problem.

This is a much bigger problem, but Volkswagen needs to stand up and say, “OK, we understand. We will buy your car back at what the fair market value of that vehicle was prior to this notice coming out.”

With that, I see my time is up and I yield back.

But thank you for being here.

Mr. MCKINLEY. Again, thank you again. We have now 12 minutes. So, I am asking those again, please, to keep their questions short.

The Chair recognizes Mr. Yarmuth from Kentucky.

Mr. YARMUTH. Thank you, Mr. Chairman.

Thank you for appearing, Mr. Horn.

I suspect that I should be feeling a sense of schadenfreude here today because Ford Escapes and Lincoln MKCs are made in my district, and presumably, we will be selling some more of those while you are out of the marketplace. But I am not really taking any joy in any of this.

I just have a couple of quick questions. The article I read said that there were about 11 million vehicles worldwide affected by this.

Mr. HORN. Yes.

Mr. YARMUTH. So, they contain the defeat device. I guess there is no added cost to put it in since it is just a line of computer code. Would that be right?

Mr. HORN. It seems very logic, sir, yes.

Mr. YARMUTH. Yes. So, my question is, how many countries that these 11 million vehicles were sold in have emission standards that would have been defeated by this device? I mean, if the United States we are talking about a half a million cars, roughly, out of 11 million, what are Germany’s emission standards, for stance? Are they stricter than the United States?

Mr. HORN. I mean, there’s many countries affected. All the countries in Europe are affected. The emission standards for diesel cars in Europe are different to the U.S. You have currently the E05 and going into E06 here. You have been 5.

And there’s two differences. First of all, nitrogen oxides are much more stringent here. It’s 5 grams, I think, per mile, or whatever. And in Europe it is now 30 to 40. So, this is quite—it is higher. It is higher in Europe, but in Europe what is stricter is the diesel part of the particle filter emissions. There are these little diesel

particle filters coming out. On that, the European laws are much stricter than the U.S.

Mr. YARMUTH. My question is, would this defeat device that is 11 million vehicles have helped deceive the European countries' standards as well?

Mr. HORN. I can only give you my understanding at this point of time. But, as you know, there are lots of European countries investigating this, and we are working with those agencies, also with the German KBA, which is the responsible agency. People had to report there, and this is being investigated.

Since the standards are different, my understanding is that the defeat device is in those cars as well, but to what degree it is really affecting the emission laws, I don't know.

Mr. YARMUTH. OK. I appreciate that answer.

And I just want to say before closing that it is very refreshing to hear my colleagues from the other side defend the Clean Air Act and talk about emissions. I appreciate that. It is a rare occurrence.

I yield back.

Mr. MURPHY (presiding). Mr. Collins is recognized for 5 minutes.

Mr. COLLINS. Thank you, Mr. Chairman.

Since I am always, and again this time, one of the last to question you, I guess what I have picked up here, and I hope you can relay back to your Board, the folks running Volkswagen back in Germany, is that the response so far is inadequate.

I would tell you from my perspective it is a sign of arrogance. It is a sign of not admitting yet the severity of your problem.

I will tell you I am an engineer, and I have a way of thinking. And I cannot accept VW's portrayal of this as something by a couple of rogue software engineers.

I would begin by saying, isn't intellectual property and patented work a very important part of what makes VW, VW? You are constantly looking for breakthrough technology that you can patent? That is a big part of your company, isn't it? You pride yourself on that engineering.

So, you are having us believe—and I think this is the way an engineer's mind works—back in 2009 you were trying to figure out a way to have clean diesel, top performance, and your engineers got stumped. The NOx emissions were not even close. Would that be true?

Mr. HORN. What is stumped?

Mr. COLLINS. Stumped, confused. They couldn't get through it. It was an insurmountable roadblock. They couldn't give performance and emission control at the same time. They were 40 times over the NOx emissions.

Mr. HORN. It seems to be logic, what you are saying—

Mr. COLLINS. Right.

Mr. HORN [continuing]. But I don't know.

Mr. COLLINS. So, then, if I am working in VW engineering and I am always looking for intellectual property that I can patent and give me a competitive advantage—and I know this is a problem, and I have to tell you this problem was going way up the chain. "We can't do it. The NOx standards in the U.S. are not what they need to be. We can't do it."

"Well, go work harder. Go find a solution."

People are coming back. “We still can’t find a solution.” The Engineering Manager, “We can’t find a solution.”

And then, all of a sudden, two software engineers, like they found pixie dust, come in and say, “We found a solution. We’ve got it. We fixed it.”

Now you are telling me these two engineers snuck that computer code into the software and no one said, “This is breakthrough technology. I think we need to run this up the ladder with our attorneys and our engineers. We need to patent this. This is intellectual property that is going to give us an advantage. We can meet the NOx standards and the performance standards, and we had a breakthrough. We went from 40 times the emissions to we met the emissions”?

And VW is trying to get the United States of America to believe these are a couple of rogue engineers? I categorically reject that. Either your entire organization is incompetent when it comes to trying to come up with intellectual property—and I don’t believe that for a second—or they are complicit at the highest levels in a massive coverup that continues today.

Because just the very 5 minutes that I have been here, and as an engineer, and I am not a Ph.D., my mind immediately jumped to, with this being true, why didn’t we look for patents? Why didn’t we ask the questions what the pixie dust was? They have fixed this thing miraculously. This didn’t happen in one day. This didn’t happen in one month. Your engineers were looking at this, I can tell you, for many months. They were stumped. They couldn’t come up with it.

And then, all of a sudden, the solution is there, and VW is trying to tell us in the United States of America, in this Congress, that it was a couple of rogue engineers. Well, if that is true, then your entire Patent Department should be terminated, because this would have been massive breakthrough technology that would have given VW a true advantage, not by cheating, but a true advantage in clean diesel technology.

I would like you to take that back to your Board and have them ask that question: What was going on in the patent world? What was going on in the engineering world? Because I can tell you personally I categorically reject everything that VW is saying about a couple of rogue engineers. And I can tell you that suspending three folks, it goes way, way higher than that.

And what I would like to conclude with, sir—again, I am also a financial guy, I am an entrepreneur—I would suggest that you be honest to your shareholders. Six point five billion euros is off by an order of magnitude. Five hundred thousand vehicles at \$40,000 apiece, if you were to buy those back—and I would suggest you start doing that tomorrow—that is 20 billion there. I would suggest you are off by an order of magnitude. And if you had told us today you had set aside \$68 billion, I would say you are probably in the ballpark. Six point eight, not even close.

With that, Mr. Chairman, I yield back.

Mr. MURPHY. The gentleman yields back.

I now recognize Mr. Welch for 5 minutes.

Mr. WELCH. Thank you very much.

Sir, thank you for coming in. But I just want to express to you some of the things that I have been hearing from Vermonters.

First of all, we have got VW customers, we have got VW dealers in red States and in blue States, and they are mad as hell. Some of the questions that came to me from Vermonters, and I want to submit this to the record and ask you, VW, to answer these questions from Vermonters.

[The information appears at the conclusion of the hearing.]

But let me just give a reflection of what these say.

Number 1, "What will"—you, VW—"be reading [when you are] in jail?"

Number 2, "I just wonder what the hell [you] were thinking."

Three, "How can we help out Vermonters who got these lemons?"

Four, "Why should the U.S. allow you to sell vehicles in this country?"

Five, "VW is the Lance Armstrong of the ... industry."

These questions go on and on and reflect the white-heat anger that folks have about the deception.

One last question, "How do you sleep at night? ... How [do] you call yourself a member of the human race when you knowingly ... poison the planet?"

And then, I talked to some of our VW dealers. They care about their customers, and I know you individually do as well. And one of the dealers said this is on the scale of Enron and Bernie Madoff. That is how deceitful and unnecessary and willful it was.

They will stand by their employees, our VW dealers, but this is going to be an expense to them because they are not selling cars that are bringing in profits. So, they are going to have to pay out of their own pocket, and they will do that because they are loyal to their employees.

But I have one major question. Just last week, BP reached a settlement with the Justice Department over the massive 2010 Gulf oil spill that killed 11 workers and devastated the environment and the economy of the Gulf Coast. That settlement allowed BP to shift more than half of its \$21 billion fine to the American taxpayer by taking advantage of a loophole in the U.S. Tax Code. In my view, that is wrong. The wrongdoer, not the taxpayer, should pay all of the settlement.

And the question I have is this: Will you commit here today under oath that VW will not use this loophole to write off any future settlement payments related to the fraudulent and deceptive activity to which VW has already admitted, sir?

Mr. HORN. If you want a clear answer under oath, I would have to really understand these tax loopholes, and I don't understand them. But I—

Mr. WELCH. Let me explain it very simply. BP got to write off about half of the cost of that, and that shifts the burden to the taxpayer instead of their shareholders.

Mr. HORN. My understanding is that we will work very hard in order to get this right and that there should not be a burden to the taxpayers—should not be.

Mr. WELCH. Thank you.

Another question, taking up where Mr. Collins was, I know you individually are appalled at what happened at VW, and you have

asked your question, “How did it happen?” Someone somewhere made a decision to make it happen.

Mr. HORN. Uh-hum.

Mr. WELCH. Someone somewhere implemented that decision. You have asked yourself how that happened, correct?

Mr. HORN. Yes, sir.

Mr. WELCH. And your answer to yourself is what?

Mr. HORN. My answer to myself is that I do everything—and I don’t sleep at night—to help our dealers, to help our customers, and to be there for my company and my employees to get us through this crisis here in the U.S.

Mr. WELCH. I appreciate that, and I know that is true. You individually have a very good reputation, sir.

Mr. HORN. Thank you.

Mr. WELCH. But I asked you another question. You know the company. You have asked yourself who and how. And in your own mind, I am asking you to share with us your own view about who and what, that it could happen in the corporate structure of VW.

Mr. HORN. I think this is a speculation if I would start now. But, you know, I’m reading newspapers, as well, and there’s been lots of articles around there. And from my personal feeling, this was pressure in the system to get resolutions and, also, in conjunction with cost pressure as well. This was discussed already here in one of the other instances.

And I think it is dead wrong if you put corporate profits before people, and I think we have to get to the point that we put people first and not the pressure and corporate profits.

Mr. MURPHY. Thank you.

Mr. WELCH. What people in what department—my time is up?

Mr. MURPHY. Yes, your time is up.

Mr. WELCH. I yield back.

Mr. MURPHY. Thank you.

I now recognize the gentleman from Texas, Mr. Flores, for 5 minutes.

Mr. FLORES. Thank you, Mr. Chairman.

Mr. Horn, thank you for joining us today in an obviously tough situation for your company.

VW’s actions damaged the trust of the American people as well as the environment for billions around the globe. They have also economically damaged their customers, their dealers, and their shareholders. And I hope that VW will continue to work on the correct and fair resolution of those issues.

I want to get more in the weeds now to try to go through and fill in the blanks in the record on some dates and the who, what, where, when, as we have talked about before.

In May of 2014, independent researchers published a report that first identified higher-than-expected on-road emissions in VW vehicles, which prompted the investigations by CARB and the EPA.

So, question No. 1 is, when did VW first become aware of this research?

Mr. HORN. The end of April when it was published. To my knowledge, it was published the end of April. Mid-May I got information about this.

Mr. FLORES. OK. What steps did VW take to evaluate the conclusions of the research at that time?

Mr. HORN. First of all, to acknowledge that emission violations or higher emissions are not legal. Secondly, the engineering departments were supposed to recheck those testing results on our own equipment in order to validate this. And then, thirdly, to correct this with respect to software actions which have been implemented in the end of last year.

Mr. FLORES. OK. Now where was this done? Was this done Volkswagen Germany or Volkswagen U.S.? And who did that? Who was responsible for that?

Mr. HORN. The software applications management for the engines and, also, for the exhaust systems are being done in Germany at the Engine and Drivetrain Department within the Research and Development Division.

Mr. FLORES. OK. The EPA and CARB both described a series of presentations or discussions with VW in the wake of the research in May of 2014. Who for VW was interacting with EPA and CARB? Were those individuals part of VW America or VW AG or both?

Mr. HORN. That's something I would have to check, and maybe this is also in the records provided to you next week.

Mr. FLORES. OK. Great.

What did VW America understand about the cause of the higher on-road emissions between May of 2014 and the voluntary recall in December 2014? In other words, what did you and your team at VW America know what was going on? What had VW Germany told you?

Mr. HORN. That they have, to my understanding, validated those test results and developing software fixes in order to get this back in line, and three different tech talk versions which I didn't understand, to be also very honest, in order to bring this in the car.

But, also, as I said, all these things are vetted through this Product Safety Committee which is worldwide responsible for this and which is also looking at the track, for instance. And in this context, I trusted those guys and those processes, that everything was according to the book 100 percent.

Mr. FLORES. OK. So, at that time, nobody in VW America knew that there was cheating going on in the software design?

Mr. HORN. To my understanding, no.

Mr. FLORES. OK. Then, in December of 2014, VW conducted a voluntary recall that, at least in part, sought to address the higher on-road emissions in the model year 2009 through model year 2014 vehicles that were subject to the allegations. Would you explain what you understand this recall was intended to do?

Mr. HORN. To correct the studies of the University, I think the results of the study of the University of West Virginia, our retesting to bring the cars, all the cars, back into compliance.

Mr. FLORES. OK. But that fix to the emissions problems that was implemented as part of that recall didn't resolve the issue of higher on-road emissions. So, the question is, who was responsible for developing that technical solution that was implemented in December of 2014?

Mr. HORN. The same Engine and Drivetrain Division within the Engineering and Development Department or Division in Germany.

Mr. FLORES. The folks in Germany? OK.

And so, what role did VW of America have in developing or validating that solution?

Mr. HORN. We just have this office in Auburn Hills who do the applications. There's also a testing facility in Oxnard in California who also had those folks in testing, but, to my understanding, dyno testing, as far as the legal situation was concerned.

Mr. FLORES. OK. So, just to be clear, VW America did not develop the solution or played no part in development of the solution?

Mr. HORN. No.

Mr. FLORES. OK. It may have helped validate the solution?

Mr. HORN. I don't think so.

Mr. FLORES. OK. You don't think so? OK.

And at that time, did you or anyone in VW of America have any knowledge of the alleged defeat device?

Mr. HORN. At which point of time?

Mr. FLORES. At the time, December of 2014—

Mr. HORN. No.

Mr. FLORES [continuing]. When you were beginning to roll out the recall solution, did you have any knowledge of the—

Mr. HORN. No.

Mr. FLORES. Anybody in VW America, to the best of your knowledge?

Mr. HORN. To my understanding, not, because, otherwise, I would have hoped that they would inform me about this.

Mr. FLORES. Thank you. I yield back.

Mr. MURPHY. Thank you.

I now recognize Ms. Clarke of New York for 5 minutes.

Ms. CLARKE. Thank you, Mr. Chairman.

And I would like to thank you, Mr. Horn, for taking the time and giving us as much background and as much knowledge of what has taken place, to the best of your ability.

I have heard a couple of my colleagues on the other side of the aisle refer to what has occurred as cheating, but I would like to say to you that I believe it was an intentional deception. And I think we need to say it as it is. This wasn't a game. This was an intentional deception to bring something on the market that did not meet standards.

I want to go back to something my colleague just raised about your testing center at Oxnard. I understand that, for the better part of the past year, VW was interacting with CARB about discrepancies related to the high emissions that were discovered in 2014 involving your vehicles. What is the purpose of the Oxnard facility? And is it, as the article suggests, developed to help Volkswagen meet emission standards?

Mr. HORN. To my understanding, yes, and it's directly connected to the Research and Development Department in Germany to help them to get the cars into legal compliance and to the U.S. standards.

Ms. CLARKE. How many employees are there?

Mr. HORN. Oh, I would have to guess this number.

Ms. CLARKE. OK. If you could just provide us with that?

Mr. HORN. Just everything—

Ms. CLARKE. What was the role of the Oxnard facility in understanding the test results presented by CARB showing unexpectedly high on-road emissions? What was its role once it had that information?

Mr. HORN. At this point of time, I can't answer this. I don't have the understanding. I only know that our Department in Auburn Hills was interfacing with CARB and EPA for the compliance, for the applications and everything.

Ms. CLARKE. So, as you have mentioned Auburn Hills, what is the role of that office?

Mr. HORN. Excuse me?

Ms. CLARKE. What is the role of the Auburn Hills office?

Mr. HORN. And to do the compliance and the application for certification with the U.S. authorities, and they work directly on a working level, on a management level, on a daily basis with EPA and CARB.

Ms. CLARKE. And so, do the Oxnard and Auburn Hills facilities work together?

Mr. HORN. Now, yes, there's a structural change in terms of—

Ms. CLARKE. So, prior to the unveiling of this deception, they were separate entities? They didn't interface?

Mr. HORN. Well, I think they worked together. My explanation is about the structure of the situation of these facilities. And they are now under one roof.

Ms. CLARKE. OK, but they collaborate?

Mr. HORN. I hope so.

Ms. CLARKE. They are collaborators? Because, you know, my concern is that, if we have these facilities designed specifically to address the issues of emissions, of testing, and they failed, that speaks to a whole other level of perhaps collusion with respect to this whole software debacle.

Have you looked at or done any internal investigation with respect to these facilities?

Mr. HORN. That's part of the internal investigation, but my understanding is they're just testing on the basis of the legal test requirements.

Ms. CLARKE. So, the engineers would not have known software code? Is that what you are saying?

Mr. HORN. I think that they have tested the dyno situation for the cars and they didn't do independent road tests. That's what I allude to.

Ms. CLARKE. OK. Let me jump to the whole idea of the environmental impact. How seriously does Volkswagen take its commitment to the environmental responsibility?

Mr. HORN. This is deeply—also, maybe it's difficult to understand now in this context—but it is deeply embedded in our corporate culture. We have three values which is innovative, valuable, and responsible, and responsible towards our employees and the environment.

Our plant in Tennessee is a Platinum LEED certification. This is the most clean and energy-efficient plant in the world. And all of our plants have a commitment to reduce carbon footprint by 25 percent in 2018. And whether these plants are in India, newly built, or in China, they are always up really to the highest Volks-

wagen standards, which go beyond sometimes conventional standards.

Ms. CLARKE. So, if this is part of the corporate culture—

Mr. HORN. Yes.

Ms. CLARKE [continuing]. I am assuming that that is throughout, including your engineers and scientists, that this is sort of a part of the ethos. How do you explain this deviation, a massive deviation?

Mr. HORN. Myself and the majority of all Volkswagen employees, which is 600,000, asked the same question, the same question, and it's a relevant question. And I hope that these investigations will definitely find out what drove those people, beyond newspaper articles and what we read out there, what drove those people into these decisions, into these actions.

Ms. CLARKE. Hope it won't be profits.

I yield back, Mr. Chairman.

Mr. MURPHY. Mr. Tonko is recognized for 5 minutes.

Mr. TONKO. Thank you, Mr. Chairman.

Mr. Horn, these vehicles promised unrivaled fuel economy and performance without the NOx emissions usually associated with diesel. I know other members have asked about how Volkswagen intends to make consumers whole, and I do want to lend my voice to that briefly.

Because consumers, including people in my district, purchased a car believing it would be a clean, environmentally friendly choice, they have every right to feel defrauded. Consumers were sold a bill of goods that simply does not exist.

And I think it is likely that whatever fixes to comply with emissions standards will hurt the vehicles' performance in other ways. This is not what consumers thought they were buying, and it is not what dealers thought they were selling. Worse still, the resell value on these vehicles, which I am sure was a selling point, has certainly been destroyed. So, Volkswagen has a lot to think about, I believe, in terms of how it intends to make right by consumers.

Now let me ask, typically, when deciding whether to issue a recall and develop a solution, does Volkswagen conduct its own emissions testing?

Mr. HORN. Yes.

Mr. TONKO. And did you try to recreate or confirm the results of the ICCT study from May of 2014?

Mr. HORN. I can't speak to this, what they specifically tested. In July 2014, I was informed that they have basically acknowledged the testing results and were developing those fixes in order to bring those cars back into compliance.

Mr. TONKO. Now a lot was said about defeat devices, and we are talking about a defeat device here. Has the Volkswagen operations been impacted by defeat devices in the past?

Mr. HORN. I have, in the context after September 3rd, understood that there was an issue, for instance, here in 1974, yes. That's what I understand.

Mr. TONKO. And so, what measures were taken by the company to make certain that there was better scrutiny, better oversight of the potential for defeat device application?

Mr. HORN. At that point of time, that's a great question, and I can't get you the answer now.

Mr. TONKO. But was something done?

Mr. HORN. In 1974, I was 12 years old. I don't know.

Mr. TONKO. Well, history is history. We missed some of that. So, we reach to the books and read about it. What was done, if anything—

Mr. HORN. Yes.

Mr. TONKO [continuing]. To address defeat device application?

Mr. HORN. And I think the investigations will go back into this time and—

Mr. TONKO. Well, I don't think we need to investigate that. Did a corporate measure get put into play to address defeat devices?

Mr. HORN. Back then, I don't know the answer, no, sir.

Mr. TONKO. I would hope you could provide that to the committee. I am certain the record will be open.

Mr. TONKO. And if I could just confirm some of the information we have received, Volkswagen initiated a voluntary recall in December of 2014 that was intended, in part, to address the issue of excess NOx emissions, is that correct?

Mr. HORN. Excuse me. Could you repeat the question, please?

Mr. TONKO. Right. Volkswagen initiated a voluntary recall—

Mr. HORN. Yes.

Mr. TONKO [continuing]. In December of 2014?

Mr. HORN. That's correct, yes.

Mr. TONKO. That's correct? Who at Volkswagen proposed the recall?

Mr. HORN. The Technical Engineering Department in conjunction with the Product Safety Committee worldwide, which is steering all the recalls campaigns and voluntary recall actions out of Wolfsburg essentially for all the markets.

Mr. TONKO. And what explanation was given to consumers about why that December 2014 recall was necessary?

Mr. HORN. I would have to look into the document on what we wrote to those consumers. I don't know now.

Mr. TONKO. You will provide that to the committee, please?

Mr. HORN. Definitely. It's public. It's public anyhow.

Mr. TONKO. And what explanation was given to regulators about why that December 2014 recall was necessary?

Mr. HORN. That's also something we will have to provide in the document, with the documents.

Mr. TONKO. And what fix did the Volkswagen organization implement for cars brought in under that recall?

Mr. HORN. All have been software fixes. New software versions have been fleshed into the specific onboard steering units.

Mr. TONKO. And who at Volkswagen developed that fix?

Mr. HORN. The Engine and Drivetrain Development, Software After-Treatment Departments in Germany, Wolfsburg.

Mr. TONKO. And did they know at the time that it would not work?

Mr. HORN. I don't know that. My understanding was that it would work and, otherwise, also the work by the Product Safety Committee wouldn't have released this version for application in the markets.

Mr. TONKO. Well, I thank you for your responses. I look forward to the additional information you owe to the committee.

And again, I would say on behalf of the consumers of the 20th Congressional District of New York, those of the country, and around the world impacted by this, they deserve a sound explanation and a fix that will respond to the environmental damage done here and the consumer fraud.

Mr. HORN. Yes, sir. Thank you.

Mr. MURPHY. Thank you.

Ms. DeGette has one final question real quick, and then, we have got to leave.

Ms. DEGETTE. First, Mr. Chairman, I ask unanimous consent to put Mr. Welch's document into the record.

Mr. MURPHY. So ordered.

Ms. DEGETTE. I just have one last question, Mr. Horn, because you told a whole bunch of us on this committee that, after that West Virginia University study in May of 2014, everybody was running around trying to figure out what was going on with these cars and why there was a discrepancy between the tasks, that your engineers didn't know the answer. But, in fact, the discrepancy was because of a willful act of some engineers in Germany in the first place, correct?

Mr. HORN. That's my understanding, yes.

Ms. DEGETTE. And those people, that information about that discrepancy never made it to Germany, so they could tell your people what was wrong? Is that what you are testifying to here today?

Mr. HORN. I don't understand what you're trying to say.

Ms. DEGETTE. Well, you said your people were trying to figure out why there was a discrepancy.

Mr. HORN. Right.

Ms. DEGETTE. But there were some people who knew, and those were the people who wrote that deceptive code in the first place. Are you telling me that they never told your U.S. people what the problem was and why there was a discrepancy?

Mr. HORN. The people who investigated the study in detail and developed those software fixes were also the colleagues in Germany. Of course, they were informing their U.S. colleagues in Auburn Hills.

Ms. DEGETTE. So, did they tell the U.S. colleagues that there was this deceptive code and that was what was causing the discrepancy, yes or no?

Mr. HORN. I don't think so. I don't think so.

Ms. DEGETTE. Thank you.

Mr. HORN. Otherwise, we would be much earlier here.

Mr. MURPHY. Thank you.

Mr. Horn, that concludes our questioning for now. This hearing is not over, but we would appreciate—more questions will be coming from committee members—we would appreciate a quick and honest response to those as well.

Mr. MURPHY. This hearing is going to adjourn for a couple of hours while the Republican Conference is meeting. We will reconvene about 15 minutes after the call of the Chair after that meeting.

Thank you much. We will be back.

Mr. HORN. Thank you.

Mr. MURPHY. And thank you.

[Whereupon, at 12:18 p.m., the subcommittee recessed, to reconvene at 1:39 p.m. the same day.]

Mr. MURPHY. All right, we reconvene this Subcommittee on Oversight and Investigations hearing on Volkswagen's Emissions Cheating Allegations: Initial Questions.

We have Mr. Grundler and Mr. Brooks here as witnesses.

And let me just go into this, as we reconvene this hearing.

You are aware that the committee is holding an investigative hearing, and when doing so, has the practice of taking testimony under oath. Do you have any objections to testifying under oath?

Mr. BROOKS. No.

Mr. GRUNDLER. No.

Mr. MURPHY. Both witnesses say no.

The Chair then advises you that, under the rules of the House and the rules of the committee, you are entitled to be advised by counsel. Do either of you desire to be advised by counsel during your testimony today?

Mr. BROOKS. No.

Mr. GRUNDLER. No.

Mr. MURPHY. Both witnesses indicate no.

In that case, would you please rise and raise your right hand, and I will swear you in?

[Witnesses sworn.]

Mr. MURPHY. Thank you.

For the record, both witnesses have indicated yes. You are now under oath and subject to the penalties set forth in Title 18, Section 1001, of the United States Code.

We will now allow you each to give a 5-minute summary of your opening statement.

Mr. Grundler, you may begin.

**STATEMENT OF CHRISTOPHER GRUNDLER, DIRECTOR, OFFICE OF TRANSPORTATION AND AIR QUALITY, OFFICE OF AIR AND RADIATION, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY PHILLIP BROOKS, DIRECTOR, OFFICE OF CIVIL ENFORCEMENT, AIR ENFORCEMENT DIVISION, OFFICE OF ENFORCEMENT AND COMPLIANCE ASSURANCE, ENVIRONMENTAL PROTECTION AGENCY**

Mr. GRUNDLER. Chairman Murphy, Ranking Member DeGette, and other members of the subcommittee, we appreciate the opportunity to testify on the matter of the Environmental Protection Agency's Notice of Violation issued to Volkswagen.

I am Chris Grundler and I direct the EPA's Office of Transportation and Air Quality, which is responsible for EPA's Air Pollution Compliance Program for all mobile sources, vehicles, engines, and equipment, including cars, trucks, and fuels.

I am joined today by my colleague Phil Brooks, Director of the Office of Civil Enforcement's Air Enforcement Division. EPA's Civil Enforcement Program develops and prosecutes civil administrative and judicial cases.

On September 18th, 2015, EPA sent a Notice of Violation, an NOV, of the Clean Air Act to Volkswagen, including Volkswagen

AG, Audi AG, and Volkswagen Group of America, Inc., alleging that four-cylinder Volkswagen and Audi diesel cars sold in the U.S. for model years 2009 to 2015 include software that circumvents EPA's emissions standards. Volkswagen manufactured and installed software in the electronic control module of these vehicles that sensed when the vehicle was being tested for compliance with EPA emissions standards. Put simply, these cars contain software that turns off or significantly reduces the effectiveness of emissions controls when driving normally and turns them on when the car is undergoing an official emissions test.

This is known as a defeat device. This design feature results in the cars emitting up to 40 times the emissions that are allowed to ensure public health is protected. These devices contain essentially a switch that senses whether the vehicle is being tested or not based on various inputs, including the position of the steering wheel, vehicle speed, the duration of the engine's operation, and barometric pressure. The NOV that EPA issued covers roughly 482,000 diesel cars.

All new cars sold in the United States must have an EPA-issued Certificate of Conformity demonstrating that the car meets applicable Federal emissions standards to control air pollution. By making and selling vehicles with defeat devices that allow for higher levels of air emissions than were certified to EPA, VW violated multiple important Clean Air Act provisions. These violations are very serious not only because the illegal defeat device results in excess emissions many times the allowable standard, but also because, after the high emissions were discovered, VW concealed the facts from EPA, the State of California, and from consumers.

These vehicles are emitting more nitrogen oxides, or NO<sub>x</sub>, than regulations allow. NO<sub>x</sub> pollution contributes to ground-level ozone and particulate matter. We know that exposure to these pollutants has been linked with a range of serious health effects, including increased asthma attacks and other respiratory illnesses that can be serious enough to send people to the hospital.

We are in the midst of an ongoing investigation into VW's actions. We will be working closely with the U.S. Department of Justice throughout this investigation, and determinations regarding potential penalties and other remedies will be assessed as part of the investigation. However, at this point we are unable to provide further details of the investigation because the release of such information could jeopardize this ongoing enforcement investigation.

EPA will continue to work closely with the California Air Resources Board during the investigation. CARB led and contributed much of the effort to get us to this point. Our agencies work very closely together on the implementation and oversight of the Vehicle Emissions Programs.

As part of the investigation, we intend to assess the scope of VW's liability under the Clean Air Act and whether there are additional vehicles with defeat devices. We also intend to assess the economic benefit to VW of noncompliance and pursue appropriate penalties, as well as to assess the excess pollution from VW's violations and the appropriate ways to mitigate them.

While our enforcement authority concerns air pollution, we are acutely aware of the impact of these violations on consumers, and

we have provided frequently asked questions and answers for consumers on our Web site, such as whether the cars are safe to drive and whether EPA is officially recalling the vehicles at this point.

On September 25th, my office sent a letter to all auto manufacturers notifying them that we are stepping up our testing activities in response to these alleged violations. Over the 40-plus-year history of our program, we have continuously updated and adapted our approaches to compliance oversight as technologies and situations have changed. We take very seriously our responsibility to oversee the implementation and enforcement of our regulations.

It is this oversight that ensures the benefits of clean air emissions standards are realized and that the industry is competing on a level playing field, and that consumers are getting what they pay for.

Again, thank you for the opportunity to appear as witnesses this morning. We welcome your questions.

[The prepared statement of Mr. Grundler and Mr. Brooks follows:]

**Statement of  
Christopher Grundler, Director  
Office of Transportation and Air Quality  
Office of Air and Radiation  
and  
Phillip Brooks, Director  
Office of Civil Enforcement—Air Enforcement Division,  
Office of Enforcement and Compliance Assurance  
U.S. Environmental Protection Agency  
Subcommittee on Oversight and Investigations  
Committee on Energy and Commerce  
U.S. House of Representatives**

**October 8, 2015**

Chairman Murphy, Ranking Member DeGette and other members of the Subcommittee, we appreciate the opportunity to testify on the matter of the Environmental Protection Agency's (EPA) Notice of Violation (NOV) issued to Volkswagen (VW).

I am Chris Grundler, and I direct EPA's Office of Transportation and Air Quality, which is responsible for EPA's air pollution compliance program for all mobile vehicles, engines and equipment, including cars and trucks. I am joined today by my colleague Phil Brooks, Director of the Office of Civil Enforcement's Air Enforcement Division. EPA's Civil Enforcement program develops and prosecutes civil administrative and judicial cases.

On September 18, 2015, the EPA sent a Notice of Violation (NOV) of the Clean Air Act to Volkswagen (Volkswagen AG, Audi AG, and Volkswagen Group of America, Inc.) alleging that four-cylinder Volkswagen and Audi diesel cars sold in the U.S. from model years 2009 to 2015 include software that circumvents EPA emissions standards. Volkswagen manufactured and installed software in the electronic control module of these vehicles that sensed when the vehicle was being tested for compliance with EPA emission standards. Put simply, these cars contain software that turns off or significantly reduces the effectiveness of emissions controls when driving normally, and turns them on when the car is undergoing an emission test.

Known as a “defeat device,” this design feature results in the cars emitting up to 40 times the emissions that are allowed to ensure public health is protected. These devices contain a “switch” that senses whether the vehicle is being tested or not based on various inputs, including the position of the steering wheel, vehicle speed, the duration of the engine’s operation, and barometric pressure. The NOV that the EPA issued covers roughly 482,000 diesel cars.

All new cars sold in the United States must have an EPA-issued “certificate of conformity” demonstrating that the car meets applicable federal emission standards to control air pollution. By making and selling vehicles with defeat devices that allowed for higher levels of air emissions than were certified to the EPA, VW violated multiple important Clean Air Act provisions. These violations are very serious. Not only because the illegal defeat device results in excess emissions many times the allowable standard, but also because after the high emissions were discovered, VW concealed the facts from the EPA, the State of California, and from consumers.

These vehicles are emitting more nitrogen oxides, or “NOx,” than regulations allow. NOx pollution contributes to ground-level ozone and particulate matter. Exposure to these pollutants has been linked with a range of serious health effects, including increased asthma attacks and other respiratory illnesses that can be serious enough to send people to the hospital.

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The EPA is in the midst of the ongoing investigation into VW’s actions. We will be working closely with the U.S. Department of Justice throughout this investigation, and determinations regarding potential penalties and other remedies will be assessed as part of the investigation. However, at this point we are unable to provide further details of the investigation because the release of such information could jeopardize this ongoing enforcement investigation.

The EPA will continue to work closely with the California Air Resources Board during the investigation. CARB led and contributed much of the effort to get us to this point – our agencies work closely together on the implementation and oversight of the vehicle emissions programs.

As part of the investigation, we intend to assess the scope of VW's liability under the Clean Air Act, and whether there are additional vehicles with defeat devices. We intend to assess the economic benefit to VW of noncompliance and pursue appropriate penalties, as well as assess the excess pollution from VW's violations and appropriate ways to mitigate that harm.

While our enforcement authority concerns air pollution, we are acutely aware of the impact of these Clean Air Act violations on consumers, and we have provided frequently asked questions for consumers on our website, such as whether the cars are safe to drive and whether the EPA is officially recalling the vehicles at this point.

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On September 25, 2015, my office sent a letter to all auto manufacturers notifying them that we are stepping up our testing activities in response to VW's alleged violations. Over the 40-plus year history of our program, we have continuously updated and adapted our approaches to compliance oversight as technologies and situations changed. We take seriously our responsibility to oversee the implementation and enforcement of our clean air regulations. It is this oversight that ensures the benefits of clean air emissions standards are realized, that the industry is competing on a level playing field, and that consumers are getting what they pay for.

Again, we thank you for the opportunity to appear as witnesses at this hearing for the Subcommittee, and we welcome your questions.

Mr. MURPHY. Thank you.

Mr. Brooks, you don't have a statement? You issued a joint statement, correct?

Mr. BROOKS. That is correct.

Mr. MURPHY. OK. Thank you.

Now I am going to recognize myself for 5 minutes.

When you speak, just make sure you turn the mic on and bring it as close to your mouth as possible.

So, Mr. Grundler, in December of 2014, VW conducted a voluntary recall to address the on-road emissions, as you know. What information did VW convey to you about the cause and the proposed solution for the higher emissions in advance of that recall?

Mr. GRUNDLER. Thank you, Mr. Chairman.

Throughout 2014, once California and EPA learned of these excess emissions, there were numerous technical conversations between the California Air Resources Board and Volkswagen. California took the lead on exploring what the problem was with these vehicles, and my understanding is that they received multiple different stories, plausible reasons why these vehicles may not be performing as they are supposed to, chemical-based reasons, physical-based reasons.

At the end, the remedy that was proposed was described to fix a problem with the vehicle concerning how it is operated under different temperatures, what kind of dosing sensors were used to make the emissions control system work properly, and that they were confident in the fix.

At the time, they were told by the State of California to proceed, but that California was going to test these vehicles to make sure that the fix was effective. And it was not effective, based on the subsequent testing by the California Air Resources Board.

Mr. MURPHY. Thank you.

Did you conduct any further evaluation of their conclusions and proposed solutions in advance of the recall? So, what was the operational process you had in interacting with them, discussions/conversations that go back and forth?

Mr. GRUNDLER. So, EPA and California have a very strong partnership when it comes to oversight and compliance. Sometimes California takes the lead on these matters. Sometimes EPA takes the lead on these matters. For example, last year we had the lead with respect to the Hyundai/Kia investigation and subsequent action. California volunteered to take the lead on this matter.

And what happened during 2014 is essentially what is happening right now as we speak, which is trying to determine what is the right recall solution to address these excess emissions. It was VW's responsibility to identify what was wrong and to propose a fix. They did so. That fix did not work.

So, most of these interactions were between California and the company. EPA, my team, participated in some of them. We became much more actively involved in 2015, when California produced their test results on the supposed fix of these vehicles and that data showed that there still remained very high and unexplained excess emissions.

Mr. MURPHY. Who did you have these conversations with, with VW, going back and forth, communicating while they are working

or they are talking to you about these results? Do you recall who that was?

Mr. GRUNDLER. So, I want to be clear. I was not part of those conversations. It was my team and the California counterparts. My understanding is those conversations included both officials from VW of America as well as officials from Germany.

Mr. MURPHY. Do you know their names for the record?

Mr. GRUNDLER. I do not.

Mr. MURPHY. Can you identify those? Are those things you could get for us?

Mr. GRUNDLER. Yes.

Mr. MURPHY. Would you please do so? That would be important.

Mr. MURPHY. Now I have a technical question. I am not sure if either of you can answer this. So, here is this switch that, when it is in one position for an emissions test, it made a change in how this was operational, so the emissions would be lower. In the other position, the emissions were quite high. Is it possible to just keep that switch in the position of low emissions, and then, they could be in compliance or does that damage the engine or reduce power significantly? Do you have any idea?

Mr. GRUNDLER. Well, those are exactly the same kind of questions we are asking Volkswagen right now. It's not actually a switch, sir. It is what we call a dual-calibration strategy. So, the vehicle is programmed to work two different ways. And when the vehicle senses when it's on a test, it very quickly goes into clean mode, and when it does not sense the very specific parameters that are specified in our Federal test procedures, it goes into a high-pollution mode.

So, I think what you're asking is——

Mr. MURPHY. Yes, that's what we——

Mr. GRUNDLER [continuing]. Can you just take this software and will the vehicle operate normally? And we don't know yet. We're asking those questions. And the answers will depend, as you heard this morning, on which generation of diesel engines we're talking about. We believe that the newer generation, the so-called Generation 3 engines, will be much easier to fix than the older versions.

Mr. MURPHY. Thank you. I am out of time now.

Ms. DeGette, 5 minutes.

Ms. DEGETTE. Thanks.

Just to continue along, the newer versions, they have these Urea Tanks.

Mr. GRUNDLER. Right.

Ms. DEGETTE. And so, it is a system that you can both adjust the NOx filters and the Urea Tanks? And in fact, the VW dealer, the dealer in Denver and also their mechanics told me they feel like it would be a pretty easy adjustment, even just in the codes, to fix it in the 2015 and 2016 models. Is that your understanding, Mr. Grundler?

Mr. GRUNDLER. I don't want to speculate that.

Ms. DEGETTE. Yes.

Mr. GRUNDLER. That seems logical to us.

Ms. DEGETTE. Right.

Mr. GRUNDLER. We want to see the software. We want to test the vehicle before——

Ms. DEGETTE. Obviously, yes.

Mr. GRUNDLER [continuing]. Any further action is taken.

Ms. DEGETTE. Yes, obviously.

Mr. GRUNDLER. You can imagine that we're skeptical.

Ms. DEGETTE. But it is the agency's position that these vehicles do need to be fixed, right?

Mr. GRUNDLER. Absolutely.

Ms. DEGETTE. I mean, they are noncompliant under both Federal law and California State law?

Mr. GRUNDLER. That is correct.

Ms. DEGETTE. You know, I think some of the impressions given by Volkswagen is, well, you know, they are safe to drive. They might be safe to drive, but they don't comply with the emissions standards, right?

Mr. GRUNDLER. That's right.

Ms. DEGETTE. So, for the cars between 2009 and 2014, the fix is a bigger problem because they don't have the Urea Containers. And so, it is harder to see how, without major structural changes to these cars, how they could be brought into compliance? Is that your understanding?

Mr. GRUNDLER. That is correct. They will require a more substantial engineering solution.

Ms. DEGETTE. They are either going to require installation of a Urea System or different NOx filters or both. So, that is going to be quite elaborate. I am not a mechanic, and I don't pretend to be one, but I went over and looked at this. And it looked like a very knotty problem to me.

Mr. GRUNDLER. What California and EPA have directed Volkswagen to do is to present more than one option on how to address these excess emissions. And we want to look at these options very carefully, particularly with respect to what impacts they will have on the owners.

Ms. DEGETTE. Right. And have you given VW any kind of a deadline for coming up with that fix or have they indicated to you when they might be able to come up with this? This is something that really concerned the panel in the earlier conversations today.

Mr. GRUNDLER. I can assure you we have a very strong sense of urgency. We are pressing Volkswagen for that plan and for those solutions. We're meeting with them on practically a daily basis. We hope to get a proposal very, very soon. But we want to make sure that it's effective. So, there's some risk in rushing, but we expect to see something as early as next week with respect to the Generation 2 vehicles.

Ms. DEGETTE. And has the company told you that they believe they can fix the affected vehicles without affecting fuel economy, engine performance, or both?

Mr. GRUNDLER. They have not said so.

Ms. DEGETTE. OK. So, I just want to say one last thing, which is oftentimes we have the EPA in here, and sometimes it is not the most pleasurable experience testifying. But in this case the Director of the International Council on Clean Transportation, which was the organization that commissioned the West Virginia study, said, quote, "This is a powerful affirmation of U.S. Federal and California vehicle emissions regulations and of the agencies. Clear

protocols, in-use requirements for the useful life of vehicles, clear enforcement follow-through, the authority to fine and force recalls, these are the best practices that regulations worldwide should incorporate, and today's announcement shows why." End quote.

So, thank you and your agency for your efforts here.

I want to ask you, Mr. Grundler, in light of VW's deception, are you adjusting testing going forward?

Mr. GRUNDLER. Yes, and we already have.

Ms. DEGETTE. And what have you done?

Mr. GRUNDLER. Well, we have learned from this episode for sure. We wish we had found it sooner. As soon as we learned of this data, CARB and EPA focused—

Ms. DEGETTE. So, how are you adjusting the testing going forward?

Mr. GRUNDLER. The bottom line, madam, is that we are going to be unpredictable. What is required for a robust compliance and oversight program is both testing of new vehicles in the lab, testing of what we call in-use vehicles in the lab as on-road measurements.

Ms. DEGETTE. Thanks. I don't have much time.

Mr. Brooks, are you adjusting enforcement efforts going forward and, if so, how?

Mr. BROOKS. Thank you for the question. The answer is yes, although I think the prosecution, the investigation of this matter will proceed along our normal path. I think what we will see is we will be getting a lot more phone calls from people. And so, in that way, it will change. We will have more to respond to.

Ms. DEGETTE. Thank you.

Thank you very much, Mr. Chairman.

Mr. MURPHY. I think Mr. Griffith is next. Mr. Griffith, you are next for 5 minutes.

Mr. GRIFFITH. Thank you very much, Mr. Chairman.

And I appreciate you all being here and appreciate the questions that have already been asked.

Obviously, there are a number of us, if you were listening to the previous testimony, you know I am one of the people who owns one of the diesel Volkswagens. And so, I have some questions in that regard.

I think it is important that you change your testing methods. The first question I am going to ask you is, do you think it might be helpful in doing your job if we passed some legislation that would allow a portion of the fine money in a fraud case like this to go to the university that discovered it? I mean, WVU discovered the problem. You all didn't.

Believe it or not, I don't think the EPA can and should do everything, and that this might be of some assistance. Just like we do with certain bad actors in other criminal-type settings who are committing fraud on consumers or selling drugs, we take some of their ill-gained goods. We take it away from them, and the Government gives it back to some of the folks who helped discover it, law enforcement and prosecutors. Do you think that might be a helpful piece of legislation for us to take a look at? Either one of you, or both.

Mr. BROOKS. Well, I don't think I could comment on what legislative changes might be necessary. I do understand that in the criminal context those kinds of remedies have been imposed before.

Mr. GRIFFITH. So, the question is, if you have that power now, please tell us.

Mr. MURPHY. Excuse me one second.

Could you speak close to the mic? None of us can hear you. You are going to have to sit forward and into the mic.

Mr. GRIFFITH. If you currently have that power, then let me know that. But, if you don't have that power, in other words, whenever you come up with the fine that is appropriate for Volkswagen, it would seem to me—and I don't know that you have that authority now—to give WVU, West Virginia University, that uncovered this problem part of the fine to help them continue their research. I mean, that is what we do with prosecutors. We do that with law enforcement agencies who uncover crime. We do that in some securities cases. There are different ways that is done.

Do you all think that would be an authority that would be helpful for the people of the United States of America?

Mr. BROOKS. Well, I can take that back and we can respond in writing.

Mr. GRIFFITH. All right.

Mr. GRIFFITH. It sounds like a good idea to me, I will just tell you.

It is interesting that WVU found it and that you all did not, but I understand you can't do everything. And you have answered some questions about how you are going to go forward.

Let's go to the other side of this. Now I will, whatever you all come up with and whatever Volkswagen comes up with, I will get my car fixed. Or, if they do a buy-back program, I will have to debate whether it is better to fix it or to sell it back to the company because it is not doing what it is supposed to.

But I am just curious, at some point—and right now, I understand you are not doing that right now—but, at some point, am I going to be subject, or other consumers in my shoes, are they going to be subject, to penalties from the EPA for driving a vehicle that doesn't meet the standards that were supposed to be in place when they bought the vehicle?

Mr. GRUNDLER. That question depends on where the particular owner of a Volkswagen, of one of these vehicles, lives. If you live in an area that does regular emissions tests, that the State conducts these inspections, emissions inspections, some States require that, in order to re-register the vehicle, if it is subject to a recall, to show that the fix has been made. Other States do not have that requirement. It depends on where you're living.

Mr. GRIFFITH. OK. So, for some people who may not be paying attention to whatever notices they might get or, for whatever reason, aren't following the news—and believe it or not, there's a whole bunch of those folks out there who don't follow day-to-day news—they could actually end up with some kind of a penalty from their State. But, currently, there is nothing nationally?

Mr. GRUNDLER. That's right.

Mr. GRIFFITH. Would you anticipate that the EPA would go in the direction of some kind of a national program if enough of the

cars did not get bought back or fixed after a certain number of months?

Mr. GRUNDLER. We certainly will be encouraging consumers to—

Mr. GRIFFITH. I understand that. You are going to get the word out as best you can?

Mr. GRUNDLER. That's right, but—

Mr. GRIFFITH. But they don't get the message. There's still a million cars, or 100,000 cars, I think.

Mr. GRUNDLER. I would not anticipate—

Mr. GRIFFITH. You would not anticipate that?

Mr. GRUNDLER [continuing]. EPA going after individuals.

Mr. GRIFFITH. But it is a possibility?

Mr. GRUNDLER. I don't think that's a possibility under the Clean Air Act.

Mr. GRIFFITH. Because let me tell you one of my concerns is—and it doesn't have anything to do with you all, and it is a rhetorical question, so you don't have to answer it. I will tell you that upfront. But yesterday we had an EPA official in and we were talking about the Clean Power Plan and the cap-and-trade scheme, which they didn't call it the cap-and-trade scheme, they kept resisting that. But it talks about putting a limit on emissions and, then, being able to make trades. So, it sounds like cap-and-trade.

And what was interesting about it was that I had a list of quotes from Lisa Jackson in 2011, Gina McCarthy 2011, Gina McCarthy 2013, Gina McCarthy 2014, that said they were never going to consider—and, in fact, it wasn't allowed under the law—to do a cap-and-trade scheme. And then, I am looking at some cap-and-trade scheme.

So, I am a little concerned, not for me. I am going to do what I need to do to make my car right or get rid of it. But there are going to be a lot of folks out there who may be caught, and I just want to make sure that the EPA isn't doubling down on their damages, because every one of us that bought one of these vehicles is damaged in some form or another.

So, I appreciate you listening to that. If you want to answer, I will give you a chance to answer. Mr. Brooks looks like he wants to answer.

Mr. BROOKS. I will assure you that I am aware of absolutely no provision of the Clean Air Act which would allow a prosecution for the things that you are talking about.

Mr. GRIFFITH. And that is exactly what Lisa Jackson told us 2 or 3 years ago, but that is OK. We will move on.

You know, last but not least—

Mr. BROOKS. I'll say it won't happen.

Mr. GRIFFITH. Yes. On Gen 1 cars, I have read somewhere that it is going to take—it is a more complicated fix, we heard this morning, but it is also going to take up some of the space probably in the trunk area of the vehicle. Have you all heard that?

Mr. GRUNDLER. Sir, that would depend completely on what the remedy would be. And as I said earlier, we are going to take a very careful look at what impact this is going to have on owners and consumers. That will be central to how we review the options that Volkswagen comes forward with. So, we don't know that yet.

Mr. GRIFFITH. All right. I appreciate it very much. Thank you all for being here.

I yield back.

Mr. MURPHY. The gentleman yields back, and I recognize Mr. Pallone for 5 minutes.

Mr. PALLONE. Thank you.

Mr. Grundler, one of the concerns that I raised with Mr. Horn earlier was this concern about whether we might find these defeat devices or similar problems with other cars. So, I wanted to ask the question, do you have the tools and authority you need to ensure there are no other cheaters out there?

Mr. GRUNDLER. Yes, we do.

Mr. PALLONE. But I am also concerned about—and maybe this is for Mr. Brooks—about the comments that Mr. Horn made where he suggested, you know, there were a couple of rogue engineers that may have done this, but suggested that there was no corporate responsibility.

Is it the EPA or is it the AG? Who goes after the individuals, corporate or otherwise, that might be responsible for this? Or do you at some point envision even bringing charges, you know, like criminal charges against the corporation itself for this intentional deceit?

Mr. BROOKS. Thank you for the question. I can't speculate now as to exactly what course all the enforcement actions will take. I can tell you that my office has already taken the initial enforcement action, and I can tell you that we are working with the Department of Justice on these matters.

Mr. PALLONE. But I guess what I am asking—and I won't keep repeating, but one more time—you know, we keep talking about the fines because of what happened. But does this rise to individual responsibility for those responsible? And is there such a thing as criminal action against the corporation? I mean, I know I am speculating, but are those possibilities?

Mr. BROOKS. Let me be careful in answering that. First of all, I think that the concern that has been expressed here by Members is exactly our concern: Who, what, when, where, why, how? And so, I'm quite certain that the investigations that are ongoing and that will be begun will get into exactly that.

I think it would be unfair for me to say much more about what the end result might be.

Mr. PALLONE. But it is a possibility?

Mr. BROOKS. Certainly it is a possibility.

Mr. PALLONE. OK. You know, I was glad that Mr. Horn actually said that he understood the impact of these emissions, and they could have health and safety impacts. I mean, he did say that.

But does it go beyond that? I mean, in other words, you know, he is admitting that this took place and that there could be some health and safety impacts because of the increased emissions. How does the EPA hold Volkswagen responsible for the environmental effects of their decision to evade emissions standards? In other words, does the EPA consider, is it possible that they could be held responsible for the impact on essentially dirtier air, not just fix the cars, but that there might be some damages or some kind of pay-

ment that would have to be made because the air was made dirtier or that people's health and safety were impacted?

Mr. BROOKS. Thank you for that question. The answer to that is yes. While it may go by different names, we tend to talk about it in terms of mitigation, but the concept there is exactly what you articulated. We're looking for the opportunities, the ways in which the damage that has been done to the environment, and which consequently has impacts on public health, can be addressed.

Obviously, we can't go back in time and take that pollution back out of the air, but many of our settlements look forward and ask the question, how is it that we can make air quality better than what the law minimally requires in any given instance? And that additional reduction in pollution is what we refer to as mitigation, and we have many, many consent decrees that go about doing that in many different ways.

Mr. PALLONE. So, for example, you could impose some penalties that might be used to mitigate air pollution in other ways possibly, not by VW, but, you know, that the EPA would use that money somehow to mitigate air pollution in some other way? Just give me an example, and then, I will stop asking, because my time is almost up anyway.

Mr. BROOKS. OK. A lot of the power plant cases we have had projects, for example, where the company has had to go out and find a third party to implement a wood stove changeout program, so that cleaner burning stoves, more efficient wood stoves are substituted for dirtier stoves. And that has a direct impact on air quality in communities because there are lots of communities out there, as I'm sure you know, that rely very heavily on wood-burning devices. So, that's one example.

Mr. PALLONE. All right. Thank you very much.

Thank you, Mr. Chairman.

Mr. MURPHY. The gentleman yields back.

I recognize Dr. Burgess for 5 minutes.

Mr. BURGESS. Thank you, Mr. Chairman, and I apologize for being out of the room for part of the hearing. So, I am going to ask a couple of questions. If they have been asked before, please bear with me and try to give an answer that is consistent with how you answered previously.

First off, what is the budget for the EPA currently?

Mr. GRUNDLER. I don't have the budget for the entire EPA. I can give you the budget for my organization.

Mr. BURGESS. Sure, we will take that.

Mr. GRUNDLER. So, it's roughly \$100 million a year and 340 full-time people that work in my organization.

Mr. BURGESS. The overall budget for the EPA—and I am just relying on memory, which is dangerous—but I think it is close to \$15 billion. So, the EPA has resources available. It has funding available.

Mr. GRUNDLER. I do want to correct that. I think EPA's budget is around \$7 billion and about 15,000 people, roughly.

Mr. BURGESS. Nevertheless, West Virginia University had a budget for this research project, my understanding is, around \$50, \$60, \$70 thousand, is that correct?

Mr. GRUNDLER. We are extraordinarily grateful for the work that West Virginia University and the ICCT did. And I am not going to blame our budget for the fact that we missed this cheating.

I do think we do a very good job of setting priorities at EPA. Once we learned of these excess emissions, we focused on it. We didn't ignore it. And then, we have also immediately changed how we are doing our testing regime to be more unpredictable, so this doesn't happen again in the future.

Mr. BURGESS. Well, with all due respect, just looking at the situation, I think the American people ought to ask that we fire you and hire West Virginia University to do our work. They certainly are much more cost-effective than this part of the Federal agency.

Let me ask you this: I sit on another subcommittee. We have jurisdiction over the National Highway Traffic Safety Administration. So, I am familiar with safety recalls, but we heard Mr. Horn testify earlier today that this is not a safety issue with these cars as they are driven. There are emissions issues, but there are not safety issues. Is that correct?

Mr. GRUNDLER. That's correct.

Mr. BURGESS. So, does EPA do its own kind of recall that is separate and apart from the National Highway Traffic Safety Administration?

Mr. GRUNDLER. We do.

Mr. BURGESS. And would this be [www.recalls.gov](http://www.recalls.gov) that is the Web site that consumers can go to, to find out information about the recall or the possible recall on their vehicle?

Mr. GRUNDLER. We have not ordered a recall yet. When we do, we will provide that information for sure.

Mr. BURGESS. That information will be on your Web site?

Mr. GRUNDLER. Yes.

Mr. BURGESS. So, I went to the Web site. In truthfulness, staff went to the Web site. They printed it off for me. I am very grateful for that.

You can get information about pesticides, pesticide Web sites, EPA emissions recalls where I assume this would fall. Is that correct?

Mr. GRUNDLER. Yes.

Mr. BURGESS. When you click on that link, you get a "Page not found. Website improvements underway." So, can you let consumers know when they are likely to be able to get that information off of your Web site?

Mr. GRUNDLER. Again, sir, we have not ordered a recall. So, there is no recall information. We have information on our Web site that talks about our Notice of Violation, what vehicles are covered, and what consumers need to know today, which is that they can drive these cars. These cars are safe to drive. They will not be held responsible for any repairs. That would be the responsibility of the company.

Mr. BURGESS. Let me ask you this because Mr. Pallone was asking you things about payment and damages, and because of the issue that the air was dirtier and health and safety have been impacted. So, it is, in all likelihood, Volkswagen of America is going to face some significant fines and penalties by the Environmental Protection Agency, are they not?

Mr. GRUNDLER. I think that's very likely.

Mr. BURGESS. And you heard my admonition to the CEO of Volkswagen of America: "Don't be dismissive. Don't run from the fact that this has happened. You need to be aggressively compliant." And I hope they will be.

But I have got to tell you, this summer I went to Silverton, Colorado, on my own dime and looked at what had happened to the Animas River, went to the Gold King Mine. And that was entirely created and caused by the Environmental Protection Agency.

So, I have had a lot of people ask me that, if a private company had done that and turned the Animas River yellow, they would be held—the same thing we are talking about here—there would be fines, there would be mitigation costs. Does the EPA hold itself to the same standard to which it holds private corporations and, if not, why not?

Mr. GRUNDLER. Are you asking me to testify about the Gold King Mine situation?

Mr. BURGESS. Just in general. The EPA causes a problem. Should they be held to the same standards? And, no, I am not asking you to testify.

In fact, Mr. Chairman, I think we should have a hearing on that as a separate issue.

But just answer the question. Should EPA be held to the same standards to which you are going to hold a private corporation?

Mr. GRUNDLER. All I can say, sir, because I'm not familiar with all the details, is I certainly have seen and read that the Administrator has taken full responsibility for that situation and we're acting accordingly.

Mr. BURGESS. It looked like a scene out of "Ghostbusters." I will just tell you that.

Thank you, Mr. Chairman. I will yield back.

Mr. MURPHY. I do want to acknowledge that the gentleman from Virginia and the gentleman from Texas are both touting my neighboring State, West Virginia University, a rival of Pitt, but it is nice to see them get the accolades for doing such good work.

I now recognize Ms. Castor for 5 minutes.

Ms. CASTOR. Thank you, Mr. Chairman.

Gentlemen, on September 18th, the EPA issued a Notice of Violation against Volkswagen. The notice alleges that certain Volkswagen and Audi diesel cars for model years 2009 to 2015 include software that circumvents EPA emissions standards for certain air pollutants. According to EPA, the software produced by Volkswagen is a defeat device, as defined by the Clean Air Act.

Mr. Grundler, I understand that VW admitted in August to installing defeat devices on their vehicles. That is correct? Correct? It is accurate?

Mr. GRUNDLER. I would describe it in mid-to-late August, California and we got a heads-up that they had, in fact, installed a defeat device, and we were officially notified on September 3rd.

Ms. CASTOR. From Volkswagen?

Mr. GRUNDLER. Correct.

Ms. CASTOR. And what specifically did VW tell EPA they had done to the engines to circumvent emissions standards?

Mr. GRUNDLER. We were informed that the vehicles had a dual-calibration strategy on their engine control units which allowed the vehicle to operate one way when it sensed it was being tested by the EPA and in a completely different way when the vehicle was on the road.

Ms. CASTOR. And has VW provided EPA with an engine map that shows specifically how the defeat device works for each model car in which it was installed?

Mr. GRUNDLER. That is my understanding, but I would like to double-check that for you.

Ms. CASTOR. OK. I understand the affected vehicles fall into three generations based on the model and the year. The defeat devices may work differently for each of these generations of vehicles.

Mr. Grundler, at this point, does the EPA have a full understanding of how the defeat devices work in each of these generations of vehicles?

Mr. GRUNDLER. We do not. We still have many questions for Volkswagen to answer.

Ms. CASTOR. OK. So, what else do you need and has VW been helpful? What else do they need to provide EPA to give you the information that you need?

Mr. GRUNDLER. The information that we're focused on now like a laser is what are they going to do to address these excess emissions and take this software off these vehicles, so that they comply. We don't need to know specifically how they cheated with each line of code. We have got some information on that, but I think the most important thing going forward is that those defeat devices are removed, that these vehicles are addressed in a way that will work for consumers and the environment.

Ms. CASTOR. But you have said you have learned some lessons here.

Mr. GRUNDLER. We have.

Ms. CASTOR. Does EPA have the expertise right now in-house or do you hire consultants that—

Mr. GRUNDLER. We do. We don't need to unpack 100 million lines of code to find these defeat devices. The bottom line is testing them in unpredictable ways, so that we activate these devices. That's the bottom line, is what's coming out of the tailpipe and does it meet our standard?

Ms. CASTOR. Are you taking broader action now that you have learned these lessons about how software code can be deceptively used to avoid emissions standards? Do you have the expertise now to go and look at other code in other automobiles and trucks?

Mr. GRUNDLER. Yes, we do.

Ms. CASTOR. Are you going to do that?

Mr. GRUNDLER. We are.

Ms. CASTOR. Can you explain that a little bit further?

Mr. GRUNDLER. Yes. So, we have a number of different kinds of testing we do. So, we test every new model of vehicle. I'm sorry. We require the manufacturers to test every new model of vehicle and submit that data to us, which we review along with design. We audit a certain percentage of those by testing them in our laboratory on prescribed test cycles. And we also audit by measuring real-world emissions using these mobile devices. And it is going to be,

going forward, a combination of both laboratory testing, activity testing—we know how to download this software—as well as this real-world monitoring.

Ms. CASTOR. And back to VW, does EPA know yet whether VW can successfully fix the cars here in the U.S.?

Mr. GRUNDLER. We don't know that yet.

Ms. CASTOR. OK. And VW has a number of ongoing internal and external investigations. Has Volkswagen committed to sharing the results of those investigations with EPA?

Mr. GRUNDLER. They have not.

Ms. CASTOR. Have you asked them—

Mr. GRUNDLER. Let me defer to my colleague here to confirm that.

Ms. CASTOR. OK. So, have you asked them for that information?

Mr. GRUNDLER. They have not agreed at this time.

Ms. CASTOR. Don't you think that would be a good—have you asked them whether or not they would share that information with EPA?

Mr. BROOKS. We have outstanding official document requests, and we will be promulgating more of those. Today we learned from this morning's session about one particular investigation, and that is certainly one that we—

Ms. CASTOR. OK. Will you let the committee know if VW does not provide the results of their internal investigation?

Mr. BROOKS. Yes, we will.

Ms. CASTOR. Thanks.

And to Representative DeGette and Representative—

Mr. MURPHY. I'm sorry, we have a vote coming up, although if you have another question—

Ms. CASTOR. I just wanted to make one point here and submit this with unanimous consent. Drew Kodjak, the executive director from the International Council on Clean Transportation, the non-profit that discovered the issue, said the easiest solution is to give EPA more resources so it can perform the real-world testing, which may be more expensive, but he said, "You don't want to rely on the happenstance investigation of a small NGO to trigger one of the largest global recalls around." So, that is the last thing for all of us.

Mr. MURPHY. Without objection.

[The information appears at the conclusion of the hearing.]

Mr. MURPHY. We have got three members who need to ask questions. I have got 8 minutes and 50 seconds. Let's do it. So, if you can shorten your questions out of respect for the other members, please do. So, that takes us down to zero.

How many votes do we have?

Ms. DEGETTE. Two votes.

Mr. MURPHY. Two votes?

All right. Dr. Bucshon?

Mr. BUCSHON. Yes, on September 25th, 2015, the agency announced that it would be conducting additional testing to evaluate use of defeat devices in all vehicles. What is the current status of the testing?

Mr. GRUNDLER. Thank you for that question. Our first priority is to test all light-duty diesel vehicles. We are in the midst of that

testing. We have teamed up with California and Environment Canada, both who have the capabilities, as we do.

Mr. BUCSHON. And how many vehicles have you tested so far? Do you know?

Mr. GRUNDLER. We are still testing the first batch of vehicles.

Mr. BUCSHON. OK. What are you seeing so far?

Mr. GRUNDLER. I have not seen any data yet, sir.

Mr. BUCSHON. OK. And what criteria are you using and what is the procedure for implementing the testing, this testing?

Mr. GRUNDLER. We're being careful not to share with the auto-makers how we're going to do this new testing because we want to be unpredictable. But it will be a combination of both these five cycles that we test on today, what we call off-cycle dyno testing as well as this real-world onboard monitoring.

Mr. BUCSHON. And does this include all light-duty vehicles or just diesel technology?

Mr. GRUNDLER. We're starting with diesels.

Mr. BUCSHON. And then, would you be willing to commit to keeping the committee informed of your progress and provide us associated details regarding the testing procedures, data, and results?

Mr. GRUNDLER. Yes.

Mr. BUCSHON. And do you think that this is an isolated incident or do you have concerns with diesel technology in general?

Mr. GRUNDLER. I don't have concerns with diesel technology in general. I don't expect to find widespread problems, but we are going to be taking a very close look.

Mr. BUCSHON. OK. I yield back, Mr. Chairman.

Mr. MURPHY. Ms. Schakowsky is next, yes.

Ms. SCHAKOWSKY. Thank you.

Mr. MURPHY. And we had asked members if you don't have a lot of questions to ask because we only have 6 minutes to get to the floor.

Ms. SCHAKOWSKY. OK.

Mr. MURPHY. Thank you.

Ms. SCHAKOWSKY. Mr. Grundler, whose job is it to make consumers whole?

Mr. GRUNDLER. We are not the Consumer Protection Agency. There are other Federal agencies and State agencies that have that responsibility. But, as I testified earlier, the consumer is going to be central to how we are reviewing the options to address these excess emissions.

Ms. SCHAKOWSKY. So, let me ask you about the excess emissions now are violating the EPA standards, right?

Mr. GRUNDLER. Correct.

Ms. SCHAKOWSKY. But we just heard testimony from Volkswagen, and I have a letter sent to owners that says you can still drive them. So, under what authority, then, does the EPA say that these cars that are emitting 10 to 40 times the allowed amount to continue to be on the road?

Mr. GRUNDLER. Well, the responsibility and the liability for those excess emissions lies with Volkswagen, and that's why we're conducting this investigation and learning what the remedy is, and then, pursuing mitigation to address the environmental harm.

Ms. SCHAKOWSKY. But you already said that some States, if they were to bring their car in and for some reason that defeat device were not on, then the consumer actually could be responsible for the increased emissions. Is that right?

Mr. GRUNDLER. It's our understanding and belief that this defeat device will also defeat those State inspections. So, we do not expect these vehicles, were they to be called in for an annual or biannual inspection, to fail.

Ms. SCHAKOWSKY. So, in the meantime, though, there are half a million cars running around that are emitting greater emissions.

Mr. GRUNDLER. Yes.

Ms. SCHAKOWSKY. So, what, then, does the EPA do? We heard it could be for a year, maybe more than a year, before there is any real fix.

Mr. GRUNDLER. So, I don't know how long it is going to take to get the real fix, but the goal of our enforcement action will certainly be to make the environment whole. That is our job.

Ms. SCHAKOWSKY. OK. So, you know already that there are half a million cars—

Mr. GRUNDLER. Yes.

Ms. SCHAKOWSKY [continuing]. That consumers are told they can legally drive that are emitting more than your rules say?

Mr. GRUNDLER. Right.

Ms. SCHAKOWSKY. So, what is happening now to hold them accountable for that? You don't have to test them. You know that they are already over the line.

Mr. GRUNDLER. The owners of these vehicles are innocent in this matter.

Ms. SCHAKOWSKY. Right.

Mr. GRUNDLER. And we are working intently with California and the company to identify how to make these vehicles compliant. Once we are confident that we have the right remedy, we will order those recalls, and it will be the company's responsibility to fix those vehicles.

Ms. SCHAKOWSKY. And in the meantime, will they be penalized for having these noncompliant cars?

Mr. GRUNDLER. The consumers?

Ms. SCHAKOWSKY. No.

Mr. GRUNDLER. The company?

Ms. SCHAKOWSKY. The company.

Mr. GRUNDLER. No. No, that will be the result of our ongoing investigation. That's what will be determined by the ongoing investigation.

Ms. SCHAKOWSKY. What part of this don't you know already? What part don't you know already? You know that all those cars are exceeding your rules. I don't get it.

Mr. GRUNDLER. Well, there are many things we don't know. We don't know the why, the what, the where, who was responsible.

Ms. SCHAKOWSKY. No, you know the fact of it, though.

Mr. GRUNDLER. But we know the fact. The fact is that Volkswagen designed and installed illegal software on—

Ms. SCHAKOWSKY. And the consequence you know, that they are emitting all these extra emissions?

Mr. GRUNDLER. We have not done that calculation yet, but we know that they can be anywhere from 10 to 40 times.

Ms. SCHAKOWSKY. Right.

Mr. GRUNDLER. We have not done the math to figure out what those excess tons are and how we are going to mitigate them.

Ms. SCHAKOWSKY. I yield back.

Mr. MURPHY. The gentlelady yields.

Right now, Ms. Clarke, you are recognized for 5 minutes.

Ms. CLARKE. Thank you, Mr. Chairman.

Gentlemen, I would like to pick up on the point just raised by my colleague Ms. Schakowsky with respect to the emissions testing. New York State is one of those States that requires emissions testing. And typically, if your vehicle fails an emissions test, you can be fined, right? So, we know that, because of the defeat device, most likely those vehicles would not be detected?

Mr. GRUNDLER. Correct.

Ms. CLARKE. However, that doesn't change the fact that under normal circumstances these vehicles would not be permitted on the road. So, to have your agency say, "Well, because it's not your fault, you can continue to drive," doesn't it sort of undermine the State's requirement for certain emissions levels to be contained? For you to then undermine that with the ability for people, notwithstanding the fact that it is not their fault, most people, when their vehicle has an emissions problem don't recognize it and don't typically think it is their fault, either. However, we have to remedy it before we can take our vehicles on the road. Otherwise, we are fined. We receive stickers, and those stickers indicate whether our vehicles are in compliance.

Here we have these stealth vehicles running around in certain jurisdictions that do fail that, that would fail that under normal circumstances. How do you reconcile that?

Mr. GRUNDLER. The fines are a matter of State law.

Ms. CLARKE. Right.

Mr. GRUNDLER. The way to reconcile that is to identify an effective remedy, and once that remedy is fixed, those vehicles will pass those State inspections and those owners will not be subject to fines.

Ms. CLARKE. The challenge is the fact that this has been happening with vehicles since 2009. We have no idea when this remedy is going to be cooked up. We don't know whether the remedy is going to be hard and fast, something that we can rely on. We are hoping, but there is going to be testing. There is going to be concerns going forward because of the deception of how all of this occurred. I mean, we are talking about software here, right?

Mr. GRUNDLER. That's right.

Ms. CLARKE. How do we reconcile that? And let me ask, in addition to that, are we able to determine those States that do require—we know California, for instance. There are probably other States with emissions testing. How many vehicles, how many of the 500,000 vehicles are resident within those States, and what the effect or the immediate impact would be to the environment of the people that reside in those States? Have we been able to get a sense of that?

Mr. GRUNDLER. That's all going to be determined as a result of our investigation. It is knowable where these vehicles are registered—

Ms. CLARKE. Yes.

Mr. GRUNDLER. —and where they reside. It is not knowable yet how it is going to be fixed. We want to have the confidence that it will be effective, but that will require some time.

Ms. CLARKE. Do you anticipate that you will be hearing from States' attorneys general and other concerned entities within these States, probably their own environmental protection organizations at the State level, to try to get a handle around this? Because, you know, there are certain areas where this type of emission exacerbates already troubled circumstances for individuals who have health compromised. I mean, do we see a sense of urgency for really dealing with this?

Mr. GRUNDLER. We've already heard from both State attorneys general and State environmental—

Ms. CLARKE. I'm sure.

Mr. GRUNDLER. I met with all the State environmental directors just this week in New Orleans. The air directors, they are concerned. They want to help and they are very anxious, as are we, to identify how these excess tons, this excess air pollution will be mitigated. And that will all go into part of how we are going to resolve this once and for all. We want to get to the bottom of it.

Ms. CLARKE. In closing, Mr. Chairman, when you have been able to complete your analysis, if you can get to this committee a breakdown by State, that would be very helpful. We may have seen spikes in public health issues that have been exacerbated in some form or fashion based on clusters and where these cars reside. And we would like to be able to attribute that in some form or fashion to maybe the changes that occurred in the atmosphere as a result of maybe a cluster of ownership in a particular jurisdiction. I think that is going to be very important for us to know.

Mr. GRUNDLER. I understand, and we will do whatever we can to serve the committee's work here.

Ms. CLARKE. Very well.

I yield back, Mr. Chairman.

Mr. MURPHY. Thank you.

I just want to add, on top of the questions Ms. Clarke just gave, if you gather information with regard to State rules, with regard to antitampering laws, fines, and also whether it is criminal penalties and other aspects along those lines, we would appreciate that, as you are gathering this information for us. This would be helpful for the committee.

I want to say I ask unanimous consent that the contents of the documents to be introduced into the record and authorize staff to make any appropriate redactions. So, without objection, the documents will be entered into the record, and any redactions that staff determines are appropriate.

[The information appears at the conclusion of the hearing.]

Mr. MURPHY. And I want to thank the witnesses for coming today. We appreciate your time and your attention in this difficult matter, but it is important to us. And thank you for the testimony and to the members for their devotion to this hearing today.

The committee rules provide that members have 10 days to submit additional questions to the record to the witnesses, and we hope you will respond promptly to that.

With that, this hearing is adjourned.

[Whereupon, at 2:32 p.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]



U.S. HOUSE OF REPRESENTATIVES  
COMMITTEE ON ENERGY AND COMMERCE

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October 6, 2015

TO: Members, Subcommittee on Oversight and Investigations  
FROM: Committee Majority Staff  
RE: Hearing on “Volkswagen’s Emissions Cheating Allegations: Initial Questions”

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**I. INTRODUCTION**

On Thursday, October 8, 2015, at 10:00 a.m. in 2123 Rayburn House Office Building, the Subcommittee on Oversight and Investigations will hold a hearing entitled “Volkswagen’s Emissions Cheating Allegations: Initial Questions.” This hearing will examine the available facts and the initial compliance and consumer issues stemming from Volkswagen AG’s reported use of engine software that would reduce the effectiveness of emissions control systems in certain make and model year diesel passenger vehicles in the United States, in apparent violation of the Clean Air Act and its implementing regulations.

**II. WITNESSES**

There will be two witness panels:

Panel 1:

- Michael Horn, President and Chief Executive Office, Volkswagen Group of America.

Panel 2:

- Christopher Grundler, Director, Office of Transportation and Air Quality, Office of Air and Radiation; and
- Phillip Brooks, Director, Air Enforcement Division, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency.

**III. SUMMARY**

On September 18, 2015, the Environmental Protection Agency (EPA) issued a Notice of Violation (NOV) to Volkswagen AG, Audi AG, and Volkswagen Group of America (collectively, VW) based on a determination “that VW manufactured and installed defeat

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devices” in certain model year Volkswagen and Audi diesel passenger cars.<sup>1</sup> The agency alleged that VW installed engine software that “sensed” when the vehicles were undergoing emissions testing and ensured emissions control systems were operating to pass the tests. During normal vehicle use, according to the agency, the software would “switch” to a different mode that produced emissions of nitrogen oxides (NOx) up to 10 to 40 times above current EPA standards. The California Air Resource Board (CARB), which investigated the matter with EPA, issued its own “In-Use Compliance Letter” to VW at the same time.<sup>2</sup>

The installation and use of a component — in this case engine software — to “bypass, defeat, or render inoperative elements of the vehicles’ emission control system,” would violate the Clean Air Act (CAA) and EPA regulations.<sup>3</sup> The alleged violations involve MY2009 to MY2015 VW and Audi vehicles equipped with 2.0 liter diesel engines, a vehicle population of approximately 480,000 in the United States.<sup>4</sup> Press reports in the wake of EPA’s announcement suggest the violations could affect approximately 11 million vehicles worldwide.<sup>5</sup>

EPA and CARB have initiated enforcement investigations, which are ongoing. No fines or recalls to bring the vehicles into compliance have been announced to date. EPA also is expanding its review of other vehicles. The agency notified automakers on September 25, 2015, that it would add to its regimen of “confirmatory testing additional evaluations to look for additional defeat devices.”<sup>6</sup> Multiple agencies and foreign governments also have launched their own investigations into VW’s conduct.

VW has publically admitted and apologized for violating EPA’s regulations and currently is conducting its own investigation and examining solutions to fix the software. The company also has announced significant changes to its leadership and corporate structure. On September 23, 2015, the company’s CEO, Dr. Martin Winterkorn, resigned.<sup>7</sup> He was replaced by Matthias Muller, who most recently led the company’s Porsche division. In addition, on September 25, 2015, the company has suspended the leaders of the VW, Audi, and Porsche research and development divisions and announced a restructuring of its North American business unit. The company has set aside more than \$7 billion to address this alleged violation.

<sup>1</sup> Notice of Violation, EPA to Volkswagen AG, Audi AG and Volkswagen Group of America (September 18, 2015) available at <http://www3.epa.gov/otaq/cert/documents/vw-nov-caa-09-18-15.pdf>, at 1 (hereinafter, NOV).

<sup>2</sup> Letter from Cal. Air Resources Board to VW (September 18, 2015) available at [http://www.arb.ca.gov/newsrel/in\\_use\\_compliance\\_letter.htm](http://www.arb.ca.gov/newsrel/in_use_compliance_letter.htm), at 1 (Hereinafter, CARB Letter)

<sup>3</sup> NOV, at 1-2.

<sup>4</sup> Affected U.S. diesel models, according to EPA: MY2009 VW Jetta, Jetta Sportwagen; MY2010 VW Golf, Jetta, Jetta Sportwagen, Audi A3; MY2011 VW Golf, Jetta, Jetta Sportwagen, Audi A3; MY2012 to MY2015 VW Beetle, Beetle Convertible, Golf, Jetta, Jetta Sportwagen, Passat, and Audi A3.

<sup>5</sup> Mark Thompson and Ivana Kottasova, CNN Money, *Volkswagen scandal widens* (September 22, 2015) available at <http://money.cnn.com/2015/09/22/news/vw-recall-diesel/>.

<sup>6</sup> EPA Update on Recent Volkswagen Announcement (September 25, 2015) available at <http://yosemite.epa.gov/opa/admpress.nsf/Press%20Releases%20from%20Headquarters?OpenView>

<sup>7</sup> Jack Ewing, N.Y. Times, *Volkswagen C.E.O. Martin Winterkorn Resigns Amid Emissions Scandal* (Sept. 23, 2015) available at [http://www.nytimes.com/2015/09/24/business/international/volkswagen-chief-martin-winterkorn-resigns-amid-emissions-scandal.html?\\_r=0](http://www.nytimes.com/2015/09/24/business/international/volkswagen-chief-martin-winterkorn-resigns-amid-emissions-scandal.html?_r=0)

**IV. BACKGROUND****A. *Clean Air Act and EPA Regulations***

The Clean Air Act and its implementing regulations are intended to protect human health and the environment by limiting pollution caused by emissions from various sources. Title II of the CAA grants EPA the authority to establish and regulate emissions standards for mobile sources, including automobiles. Among the pollutants regulated under Title II, significant attention is placed on NOx.<sup>8</sup> In combination with volatile organic compounds (VOCs), NOx contributes to the production of ground-level ozone.

Current emissions requirements for new motor vehicles, known as “Tier 2” standards, were promulgated in 2000 and phased in beginning in MY2004 vehicles, with full compliance required by MY2009.<sup>9</sup> The Tier 2 standards required manufacturers to reduce NOx emissions by 88% to 95%, depending on vehicle type, though compliance is based on fleet-wide emissions, rather than certification of each individual vehicle.<sup>10</sup> In 2014, new Tier 3 standards went into effect and will generally be phased in between MY2017 and MY2025.<sup>11</sup>

Compliance with EPA’s motor vehicle emissions standards is governed by section 203 of the CAA. Prior to introducing a vehicle for sale in the United States, manufacturers must demonstrate that the vehicle meets emissions standards and obtain a certificate of conformity (COC) from the EPA. In the COC application submitted to the EPA, the manufacturer must list all auxiliary emission control devices (AECDs) installed on the vehicle.<sup>12</sup> An AECD is defined 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.”<sup>13</sup> The manufacturer must also justify each AECD and explain why it is not a “defeat device.”<sup>14</sup> An AECD is considered a “defeat device” if it:

... reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use, unless: (1) Such conditions are substantially included in the Federal emission test procedure; (2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident; (3) The AECD does not go beyond the requirements of engine starting; or (4) The AECD applies only to emergency vehicles . . . .<sup>15</sup>

It is a violation of the CAA to manufacture or sell any part or component if it will:

<sup>8</sup> The EPA estimates that on-road vehicles account for 38% of NOx emissions.

<sup>9</sup> CRS Report R43497, *Tier 3 Motor Vehicle Standards* (April 28, 2014) at 1-2.

<sup>10</sup> *Id.*, at 2.

<sup>11</sup> *Id.*, at 3-4.

<sup>12</sup> NOV, at 2.

<sup>13</sup> 40 C.F.R. § 86.1803-01

<sup>14</sup> 40 C.F.R. § 86.1844-01(d)(11).

<sup>15</sup> 40 C.F.R. § 86.1803-01.

... bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter, and where the person knows or should know that such part or component is being offered for sale or installed for such use or put to such use.<sup>16</sup>

It is also a violation to sell, market, or import any new motor vehicle if it is not covered by a valid EPA-issued COC.<sup>17</sup> Violations of these provisions are subject to civil penalties of up to \$3,750 and \$37,500, respectively, for any vehicle sold, marketed, or imported on or after January 13, 2009.<sup>18</sup>

EPA's Office of Transportation and Air Quality (OTAQ) oversees a broad set of compliance activities to ensure that vehicles manufacturers satisfy regulatory requirements. These include the review of COC applications and a variety of testing and other requirements that occur over the life a vehicle. In addition to review of manufacturer supplied testing data, EPA's own testing may include so-called "confirmatory testing," both random and targeted, and in use compliance testing. In addition, OTAQ conducts defect reporting programs and recall programs. According to available historical data, emissions recalls affect about three million vehicles annually.<sup>19</sup>

#### **B. Timeline**

Set forth below is a timeline of key events related to the VW emissions allegations. Note that the Committee's investigation is ongoing; the Committee will be receiving documents and collecting information in coming weeks that will illuminate the facts and circumstances of these events.<sup>20</sup> The information in this timeline is largely drawn from public sources and is presented to assist Committee Members during the hearing before the Subcommittee.

- **May 2014:** A study conducted by independent researchers at West Virginia University (WVU) on behalf of the International Council for Clean Transportation (ICCT) identified significantly higher on-road NOx emissions from two VW vehicles — a 2012 Jetta and a 2013 Passat.<sup>21</sup> The results of this study were brought to the attention of the EPA, CARB, and VW.
- **May 2014 to December 2014:** CARB and EPA launched investigations into the higher emissions in VW vehicles. VW initiated testing to replicate the ICCT/WVU research and

<sup>16</sup> CAA Section 203(a)(3)(B), 42 U.S.C. § 7522(a)(3)(B).

<sup>17</sup> CAA Section 203(a)(1), 42 U.S.C. § 7522(a)(1).

<sup>18</sup> NOV, at 5.

<sup>19</sup> See *Vehicle & Engine Compliance Activities: 2009-2011 Compliance Report*, EPA, December 2013, available at <http://www3.epa.gov/otaq/documents/cert/420r13006.pdf>.

<sup>20</sup> See Committee letters to VW and EPA, available at <http://energycommerce.house.gov/letter/letters-volkswagen-and-epa-regarding-volkswagen-emissions-issues>.

<sup>21</sup> NOV, at 4.

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identify technical causes for the higher on-road emissions observed by the researchers.<sup>22</sup> VW asserted to EPA and CARB that “increased emissions from these vehicles could be attributed to various technical issues and unexpected in-use conditions.”<sup>23</sup>

- December 2, 2014: VW shared testing results with EPA and CARB and proposed a “recalibration fix for the Gen1 (Lean NOx Trap technology) and Gen2 (Selective Catalytic Reduction (SCR) Technology) . . . .”<sup>24</sup>
- December 2014: VW initiated a voluntary recall of approximately 500,000 vehicles in the United States. The recall included MY2009 to MY2014 diesel vehicles equipped with Gen1 and Gen2 technology.<sup>25</sup>
- May 6, 2015: CARB commenced testing to confirm that VW’s recall solution addressed the higher on-road emissions.<sup>26</sup>
- May 6, 2015 to July 2015: CARB conducted laboratory and on-road testing to confirm the efficacy of the recall.<sup>27</sup> The testing showed limited improvement, prompting CARB to expand its investigation.<sup>28</sup>
- July 8, 2015: CARB shared test results with VW and the EPA, prompting a series of technical meetings. According to CARB, in the course of those meetings, “VW disclosed that Gen1, Gen2, and the 2015 model-year improved SCR vehicle (known as Gen3) had a second calibration intended to run only during confirmatory testing.”<sup>29</sup>
- August 2015: EPA and CARB informed VW that they would not issue certificates of conformity for 2016 vehicles until VW could explain the higher emissions and provide assurance that they would not occur in 2016 vehicles.<sup>30,31</sup>
- September 3, 2015: VW admitted to EPA and CARB that it had designed and installed what was effectively a defeat device into these vehicles.
- September 18, 2015: EPA sent VW a Notice of Violation. CARB sent VW an in-use compliance letter.
- September 21, 2015: VW CEO, Dr. Martin Winterkom, issued a public apology.

<sup>22</sup> CARB Letter.

<sup>23</sup> NOV, at 4.

<sup>24</sup> CARB Letter, at 2.

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> NOV, at 4.

<sup>28</sup> *Id.*

<sup>29</sup> CARB, at 2.

<sup>30</sup> NOV, at 4.

<sup>31</sup> EPA has not certified MY2016 vehicles and will not do so until it understands this issue.

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- September 23, 2015: Dr. Winterkorn resigned from VW.
- September 25, 2015: EPA announced it is adding additional confirmatory testing of passenger vehicles intended as an effort to identify any additional defeat devices.
- September 25, 2015: VW suspended the leaders of the VW, Audi, and Porsche research and development divisions and announced a restructuring of its North American business unit.

**V. Questions and Issues:**

The following issues may be addressed at the hearing:

- What has been Volkswagen's response to the EPA allegations?
- What are the available facts concerning VW's violations?
- What is EPA's role in any measures to bring affected VW's into compliance?
- What can VW consumers expect going forward?

**VI. Staff Contacts**

If you have any questions regarding this hearing, please contact Peter Spencer or John Ohly of the majority Committee staff at (202) 225-2927.

██████████ Yes. Please ask that CEO just what the hell he thought he was doing! The problem itself can be fixed easily, though owners of the cars may not like the decreased gas mileage that accompanies having the emissions controls on full-time.

██████████ I hope the meeting is productive. Rather than point fingers, so to speak, what can be done to rectify the problem vehicles?

██████████ How does VW plan to reimburse owners of the doctored vehicles for the increased costs they will incur for fuel once the software is updated, thereby reducing their mileage.

██████████ Why go to all that trouble and expense to fake emissions results and lie when you could have just done what you said you were doing? It doesn't make any sense. You had to know that the truth was going to come out eventually. Whose child do you have running things? This is certainly not adult behavior.

██████████ I'm an owner of a 2012 Golf TDI. As it stands, if their fix turns out to be a software patch, then we TDI owners lose the two main reasons we bought the car at all -- performance, and efficiency. It'll be cheaper for the company, sure, but now we'll be saddled with accelerated depreciation and most of us probably can't afford to simply go out and purchase a new car.

I have been curious about why the company wouldn't initiate a buyback of the affected vehicles? Is that something the government would work with them on? The owners get a fair price on their vehicle, the cars get removed from the roads (thus pleasing the EPA), and Volkswagen is still accountable for dealing with the vehicles. Is that a plausible solution?

██████████ What they are going to do to "make it right"? Could they "put their money where their mouth is" and fund something that supports fixing the worlds environmental issues? Donate to research, or a charity that is working on environmental issues, for example.

██████████ What do you (VW) plan to do for the owner's of the cars who are stuck with them? Will there be a buy back option?

Also, As an owner of one of these vehicles, I strongly advocate that the department of justice seek jail time for those involved in the deception, as well as rather than seeking maximum fines, the EPA should work with VW on refunding owners the full purchase price of these cars and getting them off the road as fast as possible.

██████████ Why, with all the great publicity they could have gotten from going "Green and Clean, would they have done this and covered it up?

██████████ How do you sleep at night?

██████████ What will VW do for the thousands of duped customers who now own their arguably valueless cars?

██████████ How will VW lobby and or push to remove regulations that prevent car manufacturers from creating high value, low mpg cars for the future?

██████████ What will he be reading in jail?

██████████ definitely a buyback/make good program and crush all the rest. the toyota pickup truck recall serves as a great example of doing it right. there were major rusting problems with the undercarriage. they replaced every one and threw in suspension components as well.

██████████ What would it take to get VW to retrofit these cars with a proven technology that gives the emissions the company said it was giving? This should be required of the company at no cost to the owners of the cars affected by its deceit.

██████████ What other parts/systems are not up to code? Breaks, steering, other areas? How do we know their product is safe?

██████████ I just wonder what the hell they were thinking, they should have known that this would cost them a lot more than it saved them.

██████████ How will VW compensate the dealerships, sales staff and others whose jobs are clearly in jeopardy due to this colossal deception? I'm an owner of a TDI and I'm raging mad, but I'm also concerned about my local dealership. They are victims of this fraud as well and it will impact our local economy.

██████████ Was this a calculated risk? How can we make this very, very not advantageous, and be very clear that the health, and climate impacts, given positive feedbacks, and difficulty of true mitigation are "corrected". Shouldn't be too difficult for Americans to crack down on VW- maybe Republicans and Democrats can set a precedent together.

██████████ I would ask two questions: What is the real state of clean diesel technology within Volkswagen that they felt compelled to mask how their cars actually performed? What is the real state of clean diesel technology within the industry as a whole? To the extent clean diesel is a bridge to cleaner running and more efficient cars these questions need to be answered.

██████████ I would ask what can be done to correct the problem?

██████████ How can we help out the Vermonters who got these lemons? As one of them, I was well intentioned in getting an efficient car. Is it possible to get the full purchase price back (they can have the car), and go purchase an actual efficient car?

██████████ I wouldn't buy a diesel to begin with. Tried it once before and it didn't work out. Then you have to find a gas station with diesel.

██████████ Are these cars legal in Germany? Emissions!!

██████████ Why should the U.S. allow you to sell vehicles in this country?

██████████ I would ask him: How does the company plan to negate the effects on the environment? Specifically, how much money is it willing/planning to spend on it's environment clean up, and for how long? over the next 10 years? Is it possible for Diesel to actually be a clean fuel? has/will there be research on clean diesel?

██████████ What about those who owned an affected TDI for years, but sold it before the scandal was revealed? Will they be accommodated?

██████████ Why haven't they been working to improve the diesel technology so they wouldn't have to continue to lie for so many years? What are they going to do for TDI owners and how long do we have to wait for resolution?

██████████ My fear is that VW is the Lance Armstrong of the car industry and they were just the first to be caught...

██████████ First and foremost, what are you doing for us TDI owners that now owe more than the car is worth because of degraded resale value. How will you make that right?

Second, how will you ensure my car maintains peak performance across the board (same as now) AND doesn't pollute the environment per the market message that is now known to be false advertising.

Last, how the hell did you think you would get away with this?

██████████ Did you really think you would get away with it?

██████████ How do you sleep at night? - ask him that. How can you call yourself a member of the human race when you knowingly and underhandedly poison the planet?

██████████ Why shouldn't there be criminal charges for this massive fraud?

██████████ Ask him what He drives for a car.

██████████ Will the company agree not to seek tax write-offs for any penalties associated with this debacle? (And thank you, Peter for your efforts to prohibit such write-offs!)

██████████ Will VW give owners the option of taking the cars off the road immediately by offering owners loaner cars or rental car vouchers?

██████████ Fix it, just fix it

██████████ Most all items that consumers buy if they have a manufacturers defect can be returned for a full refund .Will this be true for these customers of Volkswagen ?

██████████ This wasn't like the threat of a cars' gas peddle sticking to the floor to cause immediate havock on peoples lives...but long term?

██████████ What is VW going to do to ensure that all of these cars meet the standards, and how soon will they start.

██████████ as a previous owner of a 2010 TDI I would ask him what he thinks is a fair punishment for the company and how does he think the owners of those vehicles should be compensated by VW?

██████████ Just give me some cash and a new Audi

██████████ Can I get a full refund? I still have a loan to pay for my 2012 Jetta wagon TDI... The car is not worth anything now... What do I do? I did not buy a Prius because of its carbon footprint before it leaves the lot.... I thought I was doing the right thing. VW lied... I would like my money back.

██████████ Will they keep their factory in TN open, and if not, will they uphold their promises to reimburse the state for the incentives they provided?

██████████ Why they felt the need to defraud Americans? Why they think we do not pay attention to right and wrong? How would they punish a company doing this to them in there country!

██████████ How are you going to compensate the people that you lied to; the people that bought your cars? They should give everyone all their money back.

██████████ How do you sleep at night? And who issued the orders to do this dastardly thing? How do you plan on restoring the trust that I have had in VW ? It was my first car back in 1965 and I have always loved all the VWs I have had.

██████████ A very small group of people on the planet actually bought those cars. And the company chose to lie to that group - their customers. The only very small group who might buy another. Unbelievably stupid. Only one thing they can do - give those people back their money.

██████████ I'm working in Chattanooga. VW will begin to recall the affected cars between Jan 2016 through Dec 2016. TN Governor Bill Haslam had a press conference at the VW plant this evening. Apparently there are clawbacks of the tax breaks given to VW. VW has not hit the clawback point yet.

██████████ I want VW to buy back my 2011 Jetta TDI Sport Wagon. And reimburse the federal government for the tax credit I received for my supposed environmentally-sound energy efficient investment. ( Granted it is still a car.) more reparations needed for the nitrous oxide emissions that exceeded EPA standards. Etc etc. there are so many issues with this case it is hard to know where to stop with my list!

██████████ I have heard this is going to be an endemic issue in the car industry. I suppose he could say he is not the only one. But if he (VW) pays lip service to the dilemma of climate change and global warming, as he has, by saying he is setting these great standards, then WHY does he actually not believe it is a problem?

██████████ How are they going to compensate VW owners whose cars are no longer of value??

██████████ When are going to fix my car. Wouldn't give my TDI Jetta up for anything!

██████████ Ask them who they paid off in Congress and the controlling agency to allow this condition to slip by!! Somebodies palm got greased along the way!!

██████████ If congress hadn't passed the DMCA we would have an easier time at finding these malicious bits of code in the devices we own. So go ahead and ask them if they would have still put it in there if it wasn't a crime to go through the code.

██████████ Q: Was this your own idea, or did you steal it from a competitor? I find it hard to believe that only one car company had this brilliant idea.

██████████ How do you intend on cleaning up the pollution your company has unleashed?

██████████ How much will they pay the duped customers and if he has packed his bags ready for prison?



A probe into whether Volkswagen misled consumers when it dodged emissions standards could bring Republicans and Democrats together over shared criticism of the automobile industry and its regulators.

"Look, when there's a failure of the federal government to protect the health and safety of people, we're all united on that," says Rep. Tim Murphy, a Pennsylvania Republican. As chairman of the House Energy and Commerce's Oversight and Investigations Subcommittee, he has pledged to hold a hearing on the issue in the coming weeks.

Senate Environment and Public Works Chairman James M. Inhofe of Oklahoma and Senate Commerce, Science and Transportation Chairman John Thune of South Dakota say their panels are also examining the issue. "From the top down this is a huge colossal screwup by VW," Thune says.

Volkswagen's admission that it had installed software on millions of diesel vehicles to get better emissions results in tests

than in performance comes after several high-profile cases of auto manufacturers flouting U.S. regulations, most recently General Motors and Toyota. An EPA official said Sept. 25 that it will begin new tests of diesel cars and light trucks. In Europe, VW's admission is reportedly raising questions about BMW, which also sells many diesel cars.

As with last year's investigation into General Motors, congressional interest in VW's emissions could also shine an unwelcome spotlight on auto regulators, in this case the Environmental Protection Agency. The agency, which announced the news about VW Sept. 18, was alerted to the problem in 2014 after an independent West Virginia laboratory uncovered higher pollution levels in certain VW models during

on-road testing. Other federal agencies are now investigating or are likely to, including the Federal Trade Commission and the Justice Department. Lawmakers have been scathing in their criticism of the National Highway Traffic Safety Administration for failing to catch GM's faulty ignitions and Takata's defective airbags. "I lay this not only on the corporate culture, I lay it at the feet of the U.S. regulatory agencies who ought to be doing their job, ought to be doing it in a forceful way," Sen. Bill Nelson of Florida, the top Democrat on the Commerce, Science and Transportation Committee, said in a speech Sept. 22. "And then there ought to be some prosecutions, and corporate executives that knew this and have done it ought to be

going to jail."

Rep. John Mica, a Florida Republican, also says regulators are partly to blame. "Somebody in government dropped the ball."

To Drew Kodjak, executive director of the International Council on Clean Transportation, the nonprofit that discovered the issue, the easiest solution is to give the EPA more resources so it can perform "real-world" testing, which is more expensive than the controlled tests it currently performs.

"You don't want to rely on the happenstance investigation of a small NGO to trigger one of the largest global recalls around," he says. "I think that's the biggest lesson for all of this."

But Murphy is skeptical that limited funds were the only problem.

" Oftentimes we hear its someone's resources. We heard that on the General Motors issue," Murphy says. "We have to find out if it's more than just resources or it's some kind of systemic problem."

— Kellie Mejdrieh

*Rep. Mica's Rep. Mica*



Matthew Rodriguez  
Secretary for  
Environmental Protection

## Air Resources Board

Mary D. Nichols, Chair  
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Edmund G. Brown Jr.  
Governor

Reference No. IUC-2015-007

September 18, 2015

Volkswagen AG  
Audi AG  
Volkswagen Group of America, Inc.  
Through:

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Executive Vice President and General Counsel, Government Affairs  
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Re: Admission of Defeat Device and California Air Resources Board's Requests

Dear Mr. Geanacopoulos and Mr. Johnson:

In order to protect public health and the environment from harmful pollutants, the California Air Resources Board (CARB) rigorously implements its vehicle regulations through its certification, in use compliance, and enforcement programs. In addition to the new vehicle certification process, CARB regularly tests automobiles to ensure their emissions performance is as expected throughout their useful life, and performs investigative testing if warranted. CARB was engaged in dialogue with our European counterparts concerning high in use emissions from light duty diesels. CARB deployed a number of efforts using portable measurement systems and other approaches to increase our understanding for the California fleet. In 2014, the International Council for Clean Transportation (ICCT) and West Virginia University (WVU) identified through their test program, and brought to the CARB's and the United States Environmental Protection Agency's (EPA) attention, concerns of elevated oxides of nitrogen (NOx) emissions over real world driving. The ICCT actions were consistent and

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California Environmental Protection Agency

Mr. Geanacopoulos and Mr. Johnson;  
September 18, 2015  
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complementary to our activities. This prompted CARB to start an investigation and discussions with the Volkswagen Group of America (VW) on the reasons behind these high NOx emissions observed on their 2.0 liter diesel vehicles over real world driving conditions. As you know, these discussions over several months culminated in VW's admission in early September 2015 that it has, since model year 2009, employed a defeat device to circumvent CARB and the EPA emission test procedures.

VW initiated testing to replicate the ICCT/WVU testing and identify the technical reasons for the high on-road emissions. VW shared the results of this testing and a proposed recalibration fix for the Gen1 (Lean NOx Trap technology) and Gen2 (Selective Catalytic Reduction (SCR) technology) with CARB staff on December 2, 2014. Based on this meeting, CARB and EPA at that time agreed that VW could implement the software recall; however, CARB cautioned VW that if our confirmatory testing showed that the fix did not address the on-road NOx issues, they would have to conduct another recall. Based on this meeting, VW initiated a voluntary recall in December 2014 which, according to VW, affected approximately 500,000 vehicles in the United States (~50,000 in California). The recall affected all 2009 to 2014 model-year diesel fueled vehicles equipped with Gen1 and Gen2 technology. This recall was claimed to have fixed among other things, the increased real world driving NOx issue.

CARB commenced confirmatory testing on May 6, 2015 to determine the efficacy of the recall on both the Gen1 and Gen2 vehicles. CARB confirmatory testing was completed on a 2012 model-year Gen2 VW, test group CVWX02.0U4S, to be followed with Gen1 testing. CARB staff tested this vehicle on required certification cycles (FTP, US06 and HWFET) and over-the-road using a Portable Emission Measurement Systems (PEMS). On some certification cycles, the recall calibration resulted in the vehicle failing the NOx standard. Over-the-road PEMS testing showed that the recall calibration did reduce the emissions to some degree but NOx emissions were still significantly higher than expected.

To have a more controlled evaluation of the high NOx observed over the road, CARB developed a special dynamometer cycle which consisted of driving the Phase 2 portion of the FTP repeatedly. This special cycle revealed that VW's recall calibration did increase Diesel Exhaust Fluid (DEF) dosing upon initial startup; however, dosing was not sufficient to keep NOx emission levels from rising throughout the cycle. This resulted in uncontrolled NOx emissions despite the SCR reaching sufficient operating temperatures.

CARB shared its test results with VW on July 8, 2015. CARB also shared its results with the EPA. Several technical meetings with VW followed where VW disclosed that Gen1, Gen2 and the 2015 model-year improved SCR vehicle (known as the Gen3) had a second calibration intended to run only during certification testing. During a meeting on September 3, 2015, VW admitted to CARB and EPA staff that these vehicles were

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Mr. Geanacopoulos and Mr. Johnson:  
September 18, 2015  
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designed and manufactured with a defeat device to bypass, defeat, or render inoperative elements of the vehicles' emission control system. This defeat device was neither described nor justified in the certification applications submitted to EPA and CARB. Therefore, each vehicle so equipped would not be covered by a valid federal Certificate of Conformity (COC) or CARB Executive Order (EO) and would be in violation of federal and state law.

Based upon our testing and discussions with VW, CARB has determined that the previous recall did not address the high on-road NOx emissions, and also resulted in the vehicle failing certification standards. Therefore, the recall is deemed ineffective and is deemed unapproved. VW must immediately initiate discussions with CARB to determine the appropriate corrective action to rectify the emission non-compliance and return these vehicles to the claimed certified configuration. CARB program and enforcement staff is prepared to work closely with VW to find corrective actions to bring these vehicles into compliance.

CARB has also initiated an enforcement investigation of VW regarding all model-year 2009 through 2015 light-duty diesel vehicles equipped with 2.0 liter engines. We expect VW's full cooperation in this investigation so this issue can be addressed expeditiously and appropriately.



Emissions Compliance, Automotive Regulations and Science Division

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

Mr. Linc Wehrly, Director  
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2000 Traverwood Drive  
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

SEP 18 2015

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

*VIA CERTIFIED MAIL  
RETURN RECEIPT REQUESTED*

Volkswagen AG  
Audi AG  
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Thru:

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Re: Notice of Violation

Dear Mr. Geanacopoulos and Mr. Johnson:

The United States Environmental Protection Agency (EPA) has investigated and continues to investigate Volkswagen AG, Audi AG, and Volkswagen Group of America (collectively, VW) for compliance with the Clean Air Act (CAA), 42 U.S.C. §§ 7401–7671q, and its implementing regulations. As detailed in this Notice of Violation (NOV), the EPA has determined that VW manufactured and installed defeat devices in certain model year 2009 through 2015 diesel light-duty vehicles equipped with 2.0 liter engines. These defeat devices bypass, defeat, or render inoperative elements of the vehicles' emission control system that exist to comply with CAA emission standards. Therefore, VW violated section 203(a)(3)(B) of the CAA, 42 U.S.C. § 7522(a)(3)(B). Additionally, the EPA has determined that, due to the existence of the defeat

devices in these vehicles, these vehicles do not conform in all material respects to the vehicle specifications described in the applications for the certificates of conformity that purportedly cover them. Therefore, VW also violated section 203(a)(1) of the CAA, 42 U.S.C. § 7522(a)(1), by selling, offering for sale, introducing into commerce, delivering for introduction into commerce, or importing these vehicles, or for causing any of the foregoing acts.

#### Law Governing Alleged Violations

This NOV arises under Part A of Title II of the CAA, 42 U.S.C. §§ 7521–7554, and the regulations promulgated thereunder. In creating the CAA, Congress found, in part, that “the increasing use of motor vehicles . . . has resulted in mounting dangers to the public health and welfare.” CAA § 101(a)(2), 42 U.S.C. § 7401(a)(2). Congress’ purpose in creating the CAA, in part, was “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population,” and “to initiate and accelerate a national research and development program to achieve the prevention and control of air pollution.” CAA § 101(b)(1)–(2), 42 U.S.C. § 7401(b)(1)–(2). The CAA and the regulations promulgated thereunder aim to protect human health and the environment by reducing emissions of nitrogen oxides (NOx) and other pollutants from mobile sources of air pollution. Nitrogen oxides are a family of highly reactive gases that play a major role in the atmospheric reactions with volatile organic compounds (VOCs) that produce ozone (smog) on hot summer days. Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. Breathing ozone can also worsen bronchitis, emphysema, and asthma. Children are at greatest risk of experiencing negative health impacts from exposure to ozone.

The EPA’s allegations here concern light-duty motor vehicles for which 40 C.F.R. Part 86 sets emission standards and test procedures and section 203 of the CAA, 42 U.S.C. § 7522, sets compliance provisions. Light-duty vehicles must satisfy emission standards for certain air pollutants, including NOx. 40 C.F.R. § 86.1811-04. The EPA administers a certification program to ensure that every vehicle introduced into United States commerce satisfies applicable emission standards. Under this program, the EPA issues certificates of conformity (COCs), and thereby approves the introduction of vehicles into United States commerce.

To obtain a COC, a light-duty vehicle manufacturer must submit a COC application to the EPA for each test group of vehicles that it intends to enter into United States commerce. 40 C.F.R. § 86.1843-01. The COC application must include, among other things, a list of all auxiliary emission control devices (AECDs) installed on the vehicles. 40 C.F.R. § 86.1844-01(d)(11). An AECD is “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.” 40 C.F.R. § 86.1803-01. The COC application must also include “a justification for each AECD, the parameters they sense and control, a detailed justification of each AECD that results in a reduction in effectiveness of the emission control system, and [a] rationale for why it is not a defeat device.” 40 C.F.R. § 86.1844-01(d)(11).

A defeat device is an AECD “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, unless: (1) Such conditions are substantially included in the Federal emission test procedure; (2) The need for the AECD is justified in terms of protecting the vehicle against damage or accident; (3) The AECD does not go beyond the requirements of engine starting; or (4) The AECD applies only for emergency vehicles . . .” 40 C.F.R. § 86.1803-01.

Motor vehicles equipped with defeat devices, such as those at issue here, cannot be certified. EPA, *Advisory Circular Number 24: Prohibition on use of Emission Control Defeat Device* (Dec. 11, 1972); *see also* 40 C.F.R. §§ 86-1809-01, 86-1809-10, 86-1809-12. Electronic control systems which may receive inputs from multiple sensors and control multiple actuators that affect the emission control system’s performance are AECs. EPA, *Advisory Circular Number 24-2: Prohibition of Emission Control Defeat Devices – Optional Objective Criteria* (Dec. 6, 1978). “Such elements of design could be control system logic (i.e., computer software), and/or calibrations, and/or hardware items.” *Id.*

“Vehicles are covered by a certificate of conformity only if they are in all material respects as described in the manufacturer’s application for certification . . .” 40 C.F.R. § 86.1848-10(c)(6). Similarly, a COC issued by EPA, including those issued to VW, state expressly, “[t]his certificate covers only those new motor vehicles or vehicle engines which conform, in all material respects, to the design specifications” described in the application for that COC. *See also* 40 C.F.R. §§ 86.1844-01 (listing required content for COC applications), 86.1848-01(b) (authorizing the EPA to issue COCs on any terms that are necessary or appropriate to assure that new motor vehicles satisfy the requirements of the CAA and its regulations).

The CAA makes it a violation “for any person to manufacture or sell, or offer to sell, or install, any part or component intended for use with, or as part of, any motor vehicle or motor vehicle engine, where a principal effect of the part or component is to bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter, and where the person knows or should know that such part or component is being offered for sale or installed for such use or put to such use.” CAA § 203(a)(3)(B), 42 U.S.C. § 7522(a)(3)(B); 40 C.F.R. § 86.1854-12(a)(3)(ii). Additionally, manufacturers are prohibited from selling, offering for sale, introducing into commerce, delivering for introduction into commerce, or importing, any new motor vehicle unless that vehicle is covered by an EPA-issued COC. CAA § 203(a)(1), 42 U.S.C. § 7522(a)(1); 40 C.F.R. § 86.1854-12(a)(1). It is also a violation to cause any of the foregoing acts. CAA § 203(a), 42 U.S.C. § 7522(a); 40 C.F.R. § 86-1854-12(a).

#### Alleged Violations

Each VW vehicle identified by the table below has AECs that were not described in the application for the COC that purportedly covers the vehicle. Specifically, VW manufactured and installed software in the electronic control module (ECM) of these vehicles that sensed when the vehicle was being tested for compliance with EPA emission standards. For ease of reference, the EPA is calling this the “switch.” The “switch” senses whether the vehicle is being tested or not based on various inputs including the position of the steering wheel, vehicle speed, the duration of the engine’s operation, and barometric pressure. These inputs precisely track the parameters of the federal test procedure used for emission testing for EPA certification purposes. During EPA

emission testing, the vehicles' ECM ran software which produced compliant emission results under an ECM calibration that VW referred to as the "dyno calibration" (referring to the equipment used in emissions testing, called a dynamometer). At all other times during normal vehicle operation, the "switch" was activated and the vehicle ECM software ran a separate "road calibration" which reduced the effectiveness of the emission control system (specifically the selective catalytic reduction or the lean NOx trap). As a result, emissions of NOx increased by a factor of 10 to 40 times above the EPA compliant levels, depending on the type of drive cycle (e.g., city, highway).

The California Air Resources Board (CARB) and the EPA were alerted to emissions problems with these vehicles in May 2014 when the West Virginia University's (WVU) Center for Alternative Fuels, Engines & Emissions published results of a study commissioned by the International Council on Clean Transportation that found significantly higher in-use emissions from two light duty diesel vehicles (a 2012 Jetta and a 2013 Passat). Over the course of the year following the publication of the WVU study, VW continued to assert to CARB and the EPA that the increased emissions from these vehicles could be attributed to various technical issues and unexpected in-use conditions. VW issued a voluntary recall in December 2014 to address the issue. CARB, in coordination with the EPA, conducted follow up testing of these vehicles both in the laboratory and during normal road operation to confirm the efficacy of the recall. When the testing showed only a limited benefit to the recall, CARB broadened the testing to pinpoint the exact technical nature of the vehicles' poor performance, and to investigate why the vehicles' onboard diagnostic system was not detecting the increased emissions. None of the potential technical issues suggested by VW explained the higher test results consistently confirmed during CARB's testing. It became clear that CARB and the EPA would not approve certificates of conformity for VW's 2016 model year diesel vehicles until VW could adequately explain the anomalous emissions and ensure the agencies that the 2016 model year vehicles would not have similar issues. Only then did VW admit it had designed and installed a defeat device in these vehicles in the form of a sophisticated software algorithm that detected when a vehicle was undergoing emissions testing.

VW knew or should have known that its "road calibration" and "switch" together bypass, defeat, or render inoperative elements of the vehicle design related to compliance with the CAA emission standards. This is apparent given the design of these defeat devices. As described above, the software was designed to track the parameters of the federal test procedure and cause emission control systems to underperform when the software determined that the vehicle was not undergoing the federal test procedure.

VW's "road calibration" and "switch" are AECs<sup>1</sup> that were neither described nor justified in the applicable COC applications, and are illegal defeat devices. Therefore each vehicle identified by the table below does not conform in a material respect to the vehicle specifications described in the COC application. As such, VW violated section 203(a)(1) of the CAA, 42 U.S.C. § 7522(a)(1), each time it sold, offered for sale, introduced into commerce, delivered for introduction into commerce, or imported (or caused any of the foregoing with respect to) one of the hundreds of thousands of new motor vehicles within these test groups. Additionally, VW

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<sup>1</sup> There may be numerous engine maps associated with VW's "road calibration" that are AECs, and that may also be defeat devices. For ease of description, the EPA is referring to these maps collectively as the "road calibration."

violated section 203(a)(3)(B) of the CAA, 42 U.S.C. § 7522(a)(3)(B), each time it manufactured and installed into these vehicles an ECM equipped with the “switch” and “road calibration.”

The vehicles are identified by the table below. All vehicles are equipped with 2.0 liter diesel engines.

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 Beetle, VW Beetle Convertible, 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, Audi A3
2014	EVWXV02.0U4S	VW Passat
2015	FVGAV02.0VAL	VW Beetle, VW Beetle Convertible, VW Golf, VW Golf Sportwagen, VW Jetta, VW Passat, Audi A3

#### Enforcement

The EPA’s investigation into this matter is continuing. The above table represents specific violations that the EPA believes, at this point, are sufficiently supported by evidence to warrant the allegations in this NOV. The EPA may find additional violations as the investigation continues.

The EPA is authorized to refer this matter to the United States Department of Justice for initiation of appropriate enforcement action. Among other things, persons who violate section 203(a)(3)(B) of the CAA, 42 U.S.C. § 7522(a)(3)(B), are subject to a civil penalty of up to \$3,750 for each violation that occurred on or after January 13, 2009;<sup>[1]</sup> CAA § 205(a), 42 U.S.C. § 7524(a); 40 C.F.R. § 19.4. In addition, any manufacturer who, on or after January 13, 2009, sold, offered for sale, introduced into commerce, delivered for introduction into commerce, imported, or caused any of the foregoing acts with respect to any new motor vehicle that was not covered by an EPA-issued COC is subject, among other things, to a civil penalty of up to \$37,500 for each violation.<sup>[2]</sup> CAA § 205(a), 42 U.S.C. § 7524(a); 40 C.F.R. § 19.4. The EPA may seek, and district courts may order, equitable remedies to further address these alleged violations. CAA § 204(a), 42 U.S.C. § 7523(a).

<sup>[1]</sup> \$2,750 for violations occurring prior to January 13, 2009.

<sup>[2]</sup> \$32,500 for violations occurring prior to January 13, 2009.

The EPA is available to discuss this matter with you. Please contact Meetu Kaul, the EPA attorney assigned to this matter, to discuss this NOV. Ms. Kaul can be reached as follows:

Meetu Kaul  
U.S. EPA, Air Enforcement Division  
1200 Pennsylvania Avenue, NW  
William Jefferson Clinton Federal Building  
Washington, DC 20460



Sincerely,



Philip A. Brooks  
Director  
Air Enforcement Division  
Office of Civil Enforcement

Copy:  
Todd Sax, California Air Resources Board  
Walter Benjamin Fisherow, United States Department of Justice  
Stuart Drake, Kirkland & Ellis LLP

FRED UPTON, MICHIGAN  
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY  
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115

Majority (201) 225-2927  
Minority (202) 225-3641

September 29, 2015

Mr. Michael Horn  
President and CEO  
Volkswagen Group of America, Inc.  
2200 Ferdinand Porsche Drive  
Herndon, VA 20171

Dear Mr. Horn:

On September 18, 2015, the Environmental Protection Agency (EPA) notified Volkswagen AG, Audi AG, and Volkswagen Group of America, Inc. (collectively, VW) that the agency “determined that VW manufactured and installed defeat devices” in certain model year Volkswagen and Audi diesel passenger cars. The “defeat devices” took the form of software, according to the agency, that “sensed” when the vehicles were undergoing emissions testing and ensured emissions control systems were operating to pass the tests. During normal vehicle use, according to the agency, the software would “switch” to a different mode that produced certain emissions 10 to 40 times above EPA standards and in violation of the Clean Air Act. The scope of the alleged violations — affecting some 480,000 vehicles according to news reports — and EPA’s assertion that VW admitted it “designed and installed” defeat devices in these vehicles, raise serious questions about VW’s efforts to comply with its statutory obligations under the Clean Air Act.

The Committee on Energy and Commerce and its Subcommittee on Oversight and Investigations are investigating the facts and circumstances surrounding VW’s use of software in vehicle emissions control systems to affect Clean Air Act related compliance and emissions test results. To assist the committee with its investigation, and pursuant to Rules X and XI of the U.S. House of Representatives, we ask that you provide to the committee the following:

1. All documents, including communications, relating to compliance with the Clean Air Act, EPA emissions standards and regulations, or testing of diesel emissions for all make and model year vehicles associated with the alleged violation(s).

Letter to Mr. Michael Horn

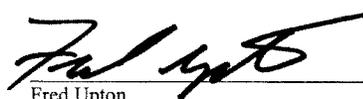
Page 2

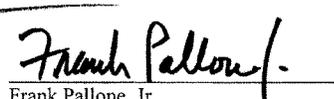
2. All documents, including communications, relating to EPA and California Air Resources Board (CARB) inquiries concerning potential noncompliance of any VW models with emissions standards or with EPA's certificates of conformity applications.
3. All documents, including communications, relating to VW efforts to respond to EPA and CARB requests to explain potential noncompliance with EPA or California standards and emissions test requirements, including, but not limited to, VW deliberations concerning any and all recalls and technical solutions initiated or considered to address EPA or CARB concerns.
4. All documents, including communications, relating to any anomalies or discrepancies concerning actual on-road performance of VW models and the performance of those models under EPA or other testing conditions since January 2010.
5. All documents, including communications, relating to the development, testing, approval and use of the software installed in the electronic control module of diesel model passenger vehicles that EPA alleges acts as a "defeat device." This includes any documents, including communications, with any suppliers involved in the development of the electronic control module and any associated software.
6. A detailed timeline of events and activity related to the alleged violation(s) outlined in EPA's Notice of Violation dated September 18, 2015.

Please produce the requested information by October 13, 2015. We also request that you arrange VW to provide an initial briefing with committee staff to occur by October 2, 2015. Instructions for responding to the committee's document requests are included as an attachment to this letter.

We request that you arrange to provide this briefing with committee staff to occur by October 2, 2015. If you have questions regarding this request, please contact Peter Spencer or John Ohly of the majority committee staff at (202) 225-2927 or Elizabeth Letter or Ryan Gottschall of the minority committee staff at (202) 225-3641.

Sincerely,

  
Fred Upton  
Chairman

  
Frank Pallone, Jr.  
Ranking Member

Letter to Mr. Michael Horn  
Page 3

  
\_\_\_\_\_  
Tim Murphy  
Chairman  
Subcommittee on Oversight and  
Investigations

  
\_\_\_\_\_  
Diana DeGette  
Ranking Member  
Subcommittee on Oversight and  
Investigations

Attachment

FRED UPTON, MICHIGAN  
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY  
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**

COMMITTEE ON ENERGY AND COMMERCE

2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115

Majority (202) 225-2927  
Minority (202) 225-3641

September 29, 2015

The Honorable Gina McCarthy  
Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

Dear Administrator McCarthy:

On September 18, 2015, the Environmental Protection Agency (EPA) notified Volkswagen AG, Audi AG, and Volkswagen Group of America, Inc. (collectively, VW) that the agency “determined that VW manufactured and installed defeat devices” in certain model year Volkswagen and Audi diesel passenger cars. The “defeat devices” took the form of software, according to the agency, that “sensed” when the vehicles were undergoing emissions testing and ensured emissions control systems were operating to pass the tests. During normal vehicle use, according to the agency, the software would “switch” to a different mode that produced certain emissions 10 to 40 times above EPA standards and in violation of the Clean Air Act. The scope of the alleged violations — affecting some 480,000 vehicles according to news reports — and EPA’s assertion that VW admitted it “designed and installed” defeat devices in these vehicles, raise serious questions about VW’s efforts to comply with its statutory obligations under the Clean Air Act. On September 25, EPA subsequently notified all vehicle manufacturers that the agency will be conducting “additional evaluations designed to look for potential defeat devices.”

The Committee on Energy and Commerce and its Subcommittee on Oversight and Investigations are investigating (a) the facts and circumstances surrounding VW’s use of software in vehicle emissions control systems to affect Clean Air Act related compliance and emissions test results and (b) the EPA’s role in oversight and enforcement of these statutory obligations. To assist the committee with its investigation, and pursuant to Rules X and XI of the U.S. House of Representatives, we request that you provide a full briefing to committee staff to address the following areas:

1. A detailed timeline of events and activity related to the violation(s) by VW outlined in EPA’s Notice of Violation dated September 18, 2015, including
  - a. How and when the violations were discovered;

Letter to The Honorable Gina McCarthy  
Page 2

- b. VW's efforts to respond to EPA and the California Air Resources Board's (CARB) requests to explain potential noncompliance with EPA or California standards and emissions test requirements;
  - c. Previous deliberations concerning any recalls and technical solutions initiated or considered to address EPA and CARB's initial concerns prior to the notice of violation;
  - d. Current deliberations concerning recalls and technical solutions to address the violation.
2. An overview of EPA's process to recall vehicles found to be in violation of the Clean Air Act with respect to emissions control systems.
  3. The process by which EPA communicates with state clean air agencies (including CARB), auto manufacturers, and consumers regarding vehicles suspected to be in violation of the Clean Air Act.
  4. A detailed description of all testing EPA requires and reviews prior to granting a certificate of conformity, EPA's process of evaluating this information, and what review or testing is conducted by EPA, or on its behalf, to validate information provided by manufacturers.
  5. EPA's September 25, 2015, notice to manufacturers that the agency will be conducting additional evaluations designed to look for potential defeat devices.

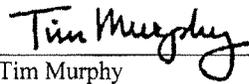
We request that you arrange to provide this briefing with committee staff to occur by October 2, 2015. If you have questions regarding this request, please contact Peter Spencer or John Ohly of the majority committee staff at (202) 225-2927 or Elizabeth Letter or Ryan Gottschall of the minority committee staff at (202) 225-3641.

Sincerely,

  
Fred Upton  
Chairman

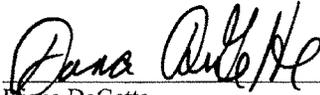
  
Frank Pallone, Jr.  
Ranking Member

Letter to The Honorable Gina McCarthy  
Page 3



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Tim Murphy  
Chairman  
Subcommittee on Oversight and  
Investigations



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Diana DeGette  
Ranking Member  
Subcommittee on Oversight and  
Investigations

FRED UPTON, MICHIGAN  
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY  
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS  
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COMMITTEE ON ENERGY AND COMMERCE  
2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115  
Majority (202) 225-2927  
Minority (202) 225-3641

November 23, 2015

Mr. Michael Horn  
President and CEO  
Volkswagen Group of America, Inc.  
2200 Ferdinand Porsche Drive  
Herndon, VA 20171

Dear Mr. Horn:

Thank you for appearing before the Subcommittee on Oversight and Investigations on Thursday, October 8, 2015, to testify at the hearing entitled "Volkswagen Emissions Cheating Allegations: Initial Questions."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

Also attached are Member requests made during the hearing. The format of your responses to these requests should follow the same format as your responses to the additional questions for the record.

To facilitate the printing of the hearing record, please respond to these questions and requests with a transmittal letter by the close of business on Monday, December 7, 2015. Your responses should be mailed to Greg Watson, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to [Greg.Watson@mail.house.gov](mailto:Greg.Watson@mail.house.gov).

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,



Tim Murphy  
Chairman  
Subcommittee on Oversight and Investigations

cc: Diana DeGette, Ranking Member, Subcommittee on Oversight and Investigations

Attachments

# Akin Gump

STRAUSS HAUER & FELD LLP

STEVEN R. ROSS  
202.887.4343/fax: 202.887.4288  
sross@akingump.com

December 14, 2015

**VIA ELECTRONIC DELIVERY**

The Honorable Fred Upton  
Chairman  
Committee on Energy & Commerce

The Honorable Frank Pallone, Jr.  
Ranking Member  
Committee on Energy & Commerce

The Honorable Timothy F. Murphy  
Chairman  
Subcommittee on Oversight &  
Investigations  
Committee on Energy & Commerce  
United States House of Representatives  
2125 Rayburn House Office Building  
Washington, DC 20515

The Honorable Diana L. DeGette  
Ranking Member  
Subcommittee on Oversight &  
Investigations  
Committee on Energy & Commerce  
United States House of Representatives  
2322A Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Upton, Chairman Murphy, Ranking Member Pallone, and Ranking Member DeGette:

On behalf of Volkswagen Group of America, Inc. ("VWGoA"), Volkswagen AG, and Audi AG (collectively, the "Company"), I write in response to your letter dated November 23, 2015 containing additional questions for the record regarding the October 8, 2015 hearing entitled "Volkswagen Emissions Cheating Allegations: Initial Questions." As you know, the Company remains committed to assisting the Committee on Energy and Commerce (the "Committee") in its inquiry, as it continues to work to develop solutions for its customers in the midst of internal and external investigations. To this end, please find enclosed the following initial responses to certain of the Committee's questions, which reflect the Company's present information and understanding:

December 14, 2015  
Page 2

Questions from Chairman Murphy

**Question 1: Mr. Horn, please describe your background with Volkswagen: a) When did you start as President of and CEO of Volkswagen Group of America? b) Prior to that, what was your involvement in the U.S. market?**

**Response:** Mr. Horn joined VWGoA as CEO and President in January 2014. Prior to January 2014, Mr. Horn served as the Global Head of After Sales at Volkswagen AG. This position at Volkswagen AG includes responsibility for the U.S. market.

**Question 2: Describe your basic function as CEO as it relates to Volkswagen's U.S. operations? a) What is your role in certifying the information provided to federal regulators, if any? b) If not you, who at VW Group of America certifies the information submitted to federal regulators?**

**Response:** VWGoA is the authorized U.S. importer of Volkswagen and Audi vehicles. The Chief Executive Officer is the highest ranking officer of VWGoA. VWGoA does not certify information provided to federal emission regulators. Volkswagen's Environmental Engineering Office ("EEO") formats, as appropriate, and forwards to federal emissions regulators information and material prepared by responsible departments of Volkswagen AG and Audi AG.

**Question 3: As CEO what weekly reporting do you receive relating to issues such as compliance issues or safety issues?**

**Response:** The CEO of VWGoA receives regular management briefings, which include information about quality, compliance, and safety matters, presented by VWGoA's Group Quality Department.

**Question 4: Please describe VW's operations in Auburn Hills, Michigan, and at the Oxnard, California facility, how the operations relate and reporting relationships to you and Germany.**

**Response:** The EEO in Auburn Hills, Michigan communicates with U.S. emissions regulators and trade groups on behalf of Volkswagen Group companies, including the manufacturers Volkswagen AG and Audi AG. The Oxnard, California facility is a testing center capable of conducting certification level emissions testing for U.S. state and federal standards. Activities at both locations are conducted pursuant to a service

December 14, 2015  
Page 3

agreement between VWGoA and Volkswagen AG and annual operating plans or project orders from Volkswagen AG, Audi AG or other Volkswagen Group manufacturers.

**Question 5:** In your testimony before the Committee, you stated that you learned of the defeat device subject to the September 18, 2015 Notice of Violation shortly before a September 3, 2015 meeting with the EPA and CARB where VW admitted the existence of the defeat device. a) Who informed you of this information? b) Were you provided with an explanation as to why it had not been previously disclosed? If so, please explain.

**Response:** VWGoA understands that, to the best of Mr. Horn's recollection, he was informed of this information at a meeting with counsel shortly before the September 3, 2015 meeting with the EPA and CARB. In addition, around August 21, 2015, Mr. Horn was forwarded an email in which the term "defeat device" was used. That email was sent from Annette Hebert at CARB to EEO. Mr. Horn does not recall being provided with any explanation as to why it was not previously disclosed.

**Question 6:** In May 2014, independent researchers published a report that first identified higher than expected on-road emissions in VW vehicles, prompting investigations by CARB and EPA. a) When did VW become aware of this research? b) What steps did VW take to evaluate the conclusions of the research? c) Where was this done or who was responsible for this?

**Response:** Volkswagen became aware of the West Virginia study sometime in April or May of 2014. With respect to the other aspects of the question, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 7:** EPA and CARB both described a series of presentations or discussions with VW in the wake of this research in May 2014. a) Who from VW was interacting with the EPA and CARB? Were those individuals part of VW of America, VW AG or both? b) What did VW of America understand about the cause of the higher on-road emissions between May 2014 and the voluntary recall in December 2014?

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects

December 14, 2015  
Page 4

of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 8:** In December 2014, VW conducted a voluntary recall that at least in part sought to address the higher on-road emissions in MY2009-MY2014 vehicles subject to these allegations. a) Who was responsible for developing the technical solution implemented in December 2014? b) What role did VW of America have in developing and validating that solution? c) At that time, did you or anyone in VW of America have any knowledge of the alleged defeat device? If so, why did you not fix it at that time?

**Response:** The technical solution implemented as part of the December 2014 voluntary recall was developed by the Powertrain Development Department at Volkswagen AG in Germany. With respect to the other aspects of your question, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 12:** Press reports suggest that VW installed this software in 2008 because the company could not balance emissions standards and cost controls. a) Is this true and if so, who was responsible for these decisions? b) This software appears rather sophisticated and complex, yet the company could not figure out how to control emissions during on road testing to meet emissions standards? c) This apparently went on years - if the company knew the vehicles did not meet emissions standards, why was it allowed to persist for so many years? Did the company make any effort to develop solutions to bring the vehicles into compliance?

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

December 14, 2015  
Page 5

**Question 14: The alleged "defeat device" was initially installed in vehicles with NOx traps but later migrated to future generations of vehicles. Please explain the three different generations of vehicles. a) If VW took the step of installing more effective and proven NOx reduction technology - selective catalytic reduction (SCR) - in second and third generation vehicles included in this alleged violation, why did it need to include the defeat device in these vehicles? i) Were these vehicles unable to meet emissions standards, even with this more proven technology? ii) Is this true for all generations of vehicles that include the SCR technology?**

**Response:** There are three generations of subject 2.0L TDI vehicles.

- **Generation 1** These vehicles contain the EA189 engine and include the following model year vehicles: 1) the 2009 Jetta and Sportwagen; 2) the 2010-2011 Golf, Jetta, Sportwagen, and Audi A3; and 3) the 2012-2014 Golf, Jetta, Sportwagen, Beetle, and Audi A3.
- **Generation 2** These vehicles also contain the EA189 engine and include 2012-2014 model year Passat vehicles.
- **Generation 3** These vehicles contain the EA288 engine and include the 2015 Passat, Golf, Jetta, Sportwagen, Beetle, and Audi A3 model year vehicles.

With respect to the other aspects of the question, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

Question from The Honorable Morgan H. Griffith

**Question 1: Would you please notify the committee of any and all offers the company makes to impacted VW diesel customers?**

**Response:** On November 9, 2015, VWGoA and Audi of America provided Volkswagen and Audi 2.0L TDI customers a goodwill package as a first step to restoring trust and to thank them for their patience as the Company works to develop approved remedies. The package included a \$500 prepaid Visa card, another \$500 for use at a dealership, and three years of 24-hour Roadside Assistance. The Company remains

December 14, 2015  
Page 6

committed to assisting the Committee in its inquiry, and it will continue to keep the Committee informed as it works to develop solutions for customers.

Questions from The Honorable Yvette Clarke

**Question 1: During the hearing, you stated that there was “a group of rogue software engineers in Germany” who developed and disseminated the defeat device. When did Volkswagen become aware of this “group of rogue software engineers?”**

**Response:** While Mr. Horn did not specifically state that “a group of rogue software engineers in Germany” developed and disseminated the defeat device, with regard to the development of the software and the knowledge of others in the Company, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 2: How did Volkswagen become aware of this “group of rogue software engineers?”**

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 3: Please provide us with the names, location, and contact information for this “group of rogue software engineers.”**

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

December 14, 2015  
Page 7

**Question 4:** If your claim is true that this defeat device is attributable to “a group of rogue software engineers,” then these software engineers would possess an extremely high acumen for subterfuge. How did this “group of rogue software engineers” manage to circumvent their Volkswagen coworkers, management, internal auditors, and whoever else is responsible for verifying performance results? How did “the group of rogue software engineers” manage to develop and disseminate the defeat device without anyone else knowing about it?

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 5:** Do you believe that what your company did was unfair to both the consumer and the rest of the auto industry in the United States?

**Response:** On numerous occasions, VWGoA has apologized to its customers and to the public on behalf of the Company. Volkswagen remains committed to providing a remedy for consumers, and to restoring the trust of its customers, dealerships, employees, the regulators, and the American public.

Question from the Honorable Gene Green

**Question 1:** The Steering Committee of VW's Supervisory Board met on Wednesday, September 25, 2015 to discuss preliminary findings of an internal probe into the scandal. What were the preliminary findings of VW's Steering Committee?

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

December 14, 2015  
Page 8

Questions from the Honorable Paul D. Tonko

**Question 1:** After VW was impacted by an issue involving the use of a defeat device in 1974, what measures were taken by the company to ensure there was more oversight of the potential for a defeat device application? Is there a corporate measure in place to address defeat devices?

**Response:** These matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

**Question 2:** What explanation was given to consumers about why VW's December 2014 recall was necessary?

**Response:** The vehicle owner communication related to the December 12, 2014, "Emissions Service Action 23N5 – ECM Software," included the following:

**"What is the issue and what will we do?"** Some vehicles may experience exhaust turbocharger failure (under extreme cold weather conditions) in a brief time period after initial vehicle start up. This condition could cause a MIL ON and possible vehicle performance problems. To diminish this condition Volkswagen will momentarily decrease vehicle turbocharger boost pressure only during extreme cold start parameters to assure necessary turbocharger performance.

In addition, the vehicle's engine management software has been improved to assure your vehicle's tailpipe emissions are optimized and operating efficiently. Under certain operating conditions, the earlier strategy may have increased the chance of the vehicle's MIL light illuminating. If the MIL illuminates for any reason, your vehicle will not pass an IM emissions inspection in some regions."

\* \* \*

Information provided in connection with this inquiry may contain confidential business information, and the Company expressly requests protection of that information. Further, production of the enclosed information is not intended to constitute a waiver of the attorney-

December 14, 2015  
Page 9

client, attorney work product, or any other applicable rights or privileges in this or any other forum, and the Company expressly reserves its rights in this regard. Moreover, information and data produced in connection with this inquiry may contain material non-public information that should be kept confidential. In light of these concerns, I would therefore ask that Committee staff provide me with advance notice and an opportunity to be heard if, notwithstanding my request that such materials and information be kept confidential, the Committee discloses any such materials or information.

As discussed with Committee staff, the Company looks forward to continuing to work with the Committee in a cooperative manner.

Sincerely,

A large black rectangular redaction box covering the signature of Steven R. Ross.

Steven R. Ross  
Counsel for Volkswagen Group of America, Inc.,  
Volkswagen AG, and Audi AG

**Akin Gump**  
STRAUSS HAUER & FELD LLP

STEVEN R. ROSS  
202.887.4343/fax: 202.887.4288  
sross@akingump.com

January 28, 2016

**VIA ELECTRONIC DELIVERY**

The Honorable Fred Upton  
Chairman  
Committee on Energy & Commerce

The Honorable Frank Pallone, Jr.  
Ranking Member  
Committee on Energy & Commerce

The Honorable Timothy F. Murphy  
Chairman  
Subcommittee on Oversight &  
Investigations  
Committee on Energy & Commerce  
United States House of Representatives  
2125 Rayburn House Office Building  
Washington, DC 20515

The Honorable Diana L. DeGette  
Ranking Member  
Subcommittee on Oversight &  
Investigations  
Committee on Energy & Commerce  
United States House of Representatives  
2322A Rayburn House Office Building  
Washington, DC 20515

Dear Chairman Upton, Chairman Murphy, Ranking Member Pallone, and Ranking Member DeGette:

On behalf of Volkswagen Group of America, Inc. ("VWGoA"), Volkswagen AG, and Audi AG (collectively, the "Company"), I write in further response to your letter dated November 23, 2015 containing questions for the record regarding the October 8, 2015 hearing entitled "Volkswagen Emissions Cheating Allegations: Initial Questions." As you know, the Company remains committed to assisting the Committee on Energy and Commerce (the "Committee") in its inquiry, as it continues to work to develop solutions for its customers in the midst of internal and external investigations. To this end, please find enclosed the following additional responses to certain of the Committee's questions, which reflect the Company's present information and understanding:

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Questions from Chairman Murphy

**Question 9: In your testimony, you reference the Engine and Drivetrain Division within the Engineering and Development Division and you reference the Product Safety Committee. Please describe the roles of each of these organizations within VW and, in particular, the roles with regard to engine development and validation.**

**Response:** The Powertrain Development Division is part of the Development Center at Volkswagen AG. It consists of four main departments: Transmissions; Diesel Engine; Gasoline Engine; and Electric Components/Electronics, including e-drive train development.

The Powertrain Development Division has been in charge of all design aspects of the affected four-cylinder, 2.0L diesel engines—Generations 1, 2, and 3—for the U.S. market, including the application and adaptation to other brand products, such as the Audi A3.

The Volkswagen AG Product Safety Committee has no role in engine development and verification. Rather, the committee determines and initiates measures to ensure product safety for the Volkswagen brand. The members and their deputies are designated by the Volkswagen AG Board of Management. When potential safety-related issues arise, the committee is tasked by the Board to: 1) evaluate and assess the matter by tasking engineering, quality, and/or production departments to make presentations regarding the issue and the potential solutions; 2) make the necessary decisions and approve or reject the proposed remedies; and 3) when necessary, promptly implement relevant measures. If ever additional fact finding becomes necessary, the committee may establish a task force to further investigate the issue and find technical solutions. The committee is also responsible for responding to government bodies and consumer protection associations relating to product safety and consumer protection.

**Question 10: Please describe the engine development process at Volkswagen A.G., including but not limited to a description of the quality control and quality assurance process.**

**Response:** The Powertrain Development Division is part of the Development Center at Volkswagen AG and develops powertrain components for the Volkswagen Group. In addition to the development of new engines, the department adapts the various engine types to the different technical requirements, markets, and customer demands globally.

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Given the complex emissions regulations of some markets, specialized local support is provided.

Particular single engine components are designed and adjusted by individual engineers working within given timeframes and technical requirements. The timeframe to develop a new engine is typically 48 months, and the process consists of the following steps:

- First, the Drivetrain Development Department defines key elements of the project, including necessary calculations, field analyses, dimensions and positioning of the drivetrain in the engine compartment, and quality goals.
- Second, required diagnostics are specified, including target fuel consumption and emissions levels based on relevant legal and environmental regulations.
- Third, existing engine performance benchmarks are noted based on historical tests.
- Fourth, testing begins on updated engine prototypes, and results are documented and analyzed to guide the further development process. Depending on the circumstances, these results are combined with various other testing, including simulated assembly tests, digital package analysis of the drivetrain, and testing related to the manufacturing process.
- Fifth, the engine's functionality is verified, various design characteristics—including engine weight, emissions, and fuel consumption—are checked against target benchmarks, and diagnostics are adjusted accordingly. At this stage, prototypes are installed on vehicles for testing outside of the Engine Development team. Additional design adjustments are also made.
- Sixth, the engine's overall performance and fuel consumption are again checked, and its operation and combustion processes are finalized.
- Seventh, generally nine months before the engine design is incorporated into consumer models, engine development testing concludes, and the design team verifies that all internal engine development targets have been achieved.
- Eighth, test production begins for the new engine design, and on-board diagnostics and durability testing is concluded.

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- Ninth, engines are made available for Volkswagen's Quality Department to conduct validation testing. This process is focused on ensuring reliability and durability.

**Question 11: It is our understanding that VW does not currently have a certificate of conformity for MY2016 vehicles.**

- a) In your written testimony you stated that VW withdrew the application for a certificate of conformity for 2016 vehicles due to the existence of a previously undisclosed auxiliary emissions control device (AECD). i) Did you withdraw the application for all 2016 vehicles or only certain makes and models? ii) Does this AECD exist in all 2016 vehicles? iii) What is the nature and function of this previously undisclosed AECD? i) Explain how it is similar or different to the AECD's subject to the September 18, 2015 Notice of Violation from the EPA. iv) When was it discovered and why was it not previously disclosed?
- b) Was the AECD's subject to the September 18, 2015 Notice of Violation from the EPA included in 2016 vehicles? a) If so, how did it affect the emissions performance of these vehicles? b) If not, what changes occurred for MY2016 that prompted VW not to include the same software that was included in previous MY vehicles?

**Response:** VWGoA submitted an initial application for certification for the 2016 model year 2.0L TDI vehicles on August 12, 2015 and it has not been withdrawn. A request for "conditional" certification was later filed and was withdrawn in October, 2015. There is no current certificate of conformity for these vehicles. With respect to the other aspects of your question, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

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**Question 13:** EPA's compliance schedule requires multiple levels of confirmatory testing by the manufacturer and EPA, both pre-production, during manufacturing and post-production. a) Who at VW is responsible for conducting confirmatory emissions testing? b) Do these tests typically include on-road tests? i) If not, what tests are conducted? c) Who provides the results of this testing to EPA? d) To your knowledge, did VW's in-use confirmatory testing ever reveal an abnormality or the existence of this defeat device? i) If so, was that information withheld from EPA? e) Did EPA ever conduct surveillance testing on any of the vehicles containing the alleged defeat device? i) If so, when and what tests were conducted?

**Response:** As described in the question, the manufacturer and EPA conduct confirmatory emissions testing on vehicles to be offered for sale in the U.S.

- a) Manufacturer pre-production confirmatory testing is conducted at the emission test facilities at Volkswagen AG and Audi AG. Post-production manufacturer testing is conducted at the VWGoA Technical Center in Oxnard, California.
- b) At the time of the certification of the vehicles in question, no on-road confirmatory emissions testing had been conducted. i) Depending on the model year and regulatory/policy requirements in effect, pre-production confirmatory emissions testing by the manufacturer may include the federal test procedure ("FTP") and highway test cycle ("HWFET"), as well as the Supplement Federal Test Procedure ("SFTP"), evaporative emission test procedure and cold temperature emissions tests. Post-production testing may also include these test cycles.
- c) Pre-production emissions testing and certification is provided to the EPA by responsible certification departments at Volkswagen AG and Audi AG, through EEO. Post-production test results are provided by the Technical Center emissions lab and submitted to EPA through EEO.
- d) During the 2013 calendar year, EPA initiated in-use surveillance testing on 2010 model year 2.0L TDI Diesel Test Group AVWXV02.0U5N. It is our understanding that testing included FTP and US06 cycles. During the 2015 calendar year, EPA initiated in-use surveillance testing on 2013 model year 2.0L TDI Diesel test group DVWXV02.0U5N. It is our understanding that testing included FTP, HWFET, and US06 cycles.

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With respect to the other aspects of your question, these matters are currently under active investigation. As the Committee is aware, the Company is conducting investigations on a world-wide scale into all aspects of the emissions issue. While these thorough investigations have already begun, any information developed at this stage is preliminary. The Company asks for your continued understanding as it completes the work necessary to determine the answers to these important questions.

Question from The Honorable Morgan H. Griffith

**Question 1: Would you please notify the committee of any and all offers the company makes to impacted VW diesel customers?**

**Response:** In addition to the information provided by the Company in its initial, December 14, 2015 response to your question, on January 11, 2016, the Company extended a goodwill package to owners of 3.0L Volkswagen brand models affected by the TDI emissions issue.

Further, please note that the Company has retained Kenneth R. Feinberg to design and administer an out-of-court, independent claims resolution program to address claims related to the 2.0L and 3.0L TDI vehicles affected by the emissions compliance issue. It believes Mr. Feinberg will develop an independent, fair and swift process for resolving these claims.

\* \* \*

Information provided in connection with this inquiry may contain confidential business information, and the Company expressly requests protection of that information. Further, production of the enclosed information is not intended to constitute a waiver of the attorney-client, attorney work product, or any other applicable rights or privileges in this or any other forum, and the Company expressly reserves its rights in this regard. Moreover, information and data produced in connection with this inquiry may contain material non-public information that should be kept confidential. In light of these concerns, I would therefore ask that Committee staff provide me with advance notice and an opportunity to be heard if, notwithstanding my request that such materials and information be kept confidential, the Committee discloses any such materials or information.

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As discussed with Committee staff, the Company looks forward to continuing to work with the Committee in a cooperative manner.



Steven K. Ross  
Counsel for Volkswagen Group of America, Inc.,  
Volkswagen AG, and Audi AG

FRED UPTON, MICHIGAN  
CHAIRMAN

FRANK PALLONE, JR., NEW JERSEY  
RANKING MEMBER

ONE HUNDRED FOURTEENTH CONGRESS  
**Congress of the United States**  
**House of Representatives**  
COMMITTEE ON ENERGY AND COMMERCE  
2125 RAYBURN HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515-6115  
Majority (202) 225-2927  
Minority (202) 225-3641

November 23, 2015

Mr. Christopher Grundler  
Director  
Office of Transportation and Air Quality  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Mr. Phillip Brooks  
Director  
Air Enforcement Division  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Dear Mr. Brooks and Mr. Grundler:

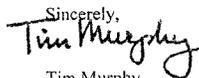
Thank you for appearing before the Subcommittee on Oversight and Investigations on Thursday, October 8, 2015, to testify at the hearing entitled "Volkswagen Emissions Cheating Allegations: Initial Questions."

Pursuant to the Rules of the Committee on Energy and Commerce, the hearing record remains open for ten business days to permit Members to submit additional questions for the record, which are attached. The format of your responses to these questions should be as follows: (1) the name of the Member whose question you are addressing, (2) the complete text of the question you are addressing in bold, and (3) your answer to that question in plain text.

Also attached are Member requests made during the hearing. The format of your responses to these requests should follow the same format as your responses to the additional questions for the record.

To facilitate the printing of the hearing record, please respond to these questions and requests with a transmittal letter by the close of business on Monday, December 7, 2015. Your responses should be mailed to Greg Watson, Legislative Clerk, Committee on Energy and Commerce, 2125 Rayburn House Office Building, Washington, DC 20515 and e-mailed in Word format to [Greg.Watson@mail.house.gov](mailto:Greg.Watson@mail.house.gov).

Thank you again for your time and effort preparing and delivering testimony before the Subcommittee.

Sincerely,  


Tim Murphy  
Chairman  
Subcommittee on Oversight and Investigations

cc: Diana DeGette, Ranking Member, Subcommittee on Oversight and Investigations

Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

MAR 22 2015

OFFICE OF  
CONGRESSIONAL AND  
INTERGOVERNMENTAL  
RELATIONS

The Honorable Tim Murphy  
Chairman  
Subcommittee on Oversight and Investigations  
Committee on Energy and Commerce  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

Enclosed please find the U.S. Environmental Protection Agency's responses to the Subcommittee's questions for the record following the October 8, 2015, hearing titled "Volkswagen Emissions Cheating Allegations: Initial Questions."

I hope this information is helpful to you and the members of the Subcommittee. If you have further questions, please contact me or your staff may contact Matthew Davis in the EPA's Office of Congressional and Intergovernmental Relations at [davis.matthew@epa.gov](mailto:davis.matthew@epa.gov) or at (202) 564-1267.

Sincerely,



Nichole Distefano  
Associate Administrator

Enclosure

Attachment 1-Additional Questions for the RecordThe Honorable Tim Murphy

1. **Vehicle technology is constantly changing. With vehicles operating potentially more than 100 million lines of code – more than an airliner or F-22 – these are incredibly complex machines, creating ample opportunities for the existence of intentional or unintentional functions that affect vehicle compliance with existing standards.**

a. **How does the EPA keep pace with advancements in vehicle technology?**

Response: EPA's staff includes vehicle technology experts, many with automotive industry background. They include engineers who have industry experience using software development tools to calibrate engine management functions. Like other professionals, these employees maintain and expand their expertise through ongoing professional contacts and affiliations, as well as through specialized training. In addition, the EPA regularly conducts its own assessments to understand and/or improve upon emissions-related technologies.

b. **How often does the agency evaluate the effectiveness of its testing relative to advancements in technology?**

Response: We are continually looking at ways to improve our testing programs. We do this both formally and informally. We formally evaluate and update testing protocols through the rulemaking process, and do so informally, as we are doing now in light of the VW matter as new technologies and situations emerge. For example, within the last decade we updated testing protocols to accommodate plug-in hybrid and various other electric vehicle technologies. We also announced to manufacturers on September 25, 2015 that we would implement new protocols to screen for the presence of defeat devices, and we now are applying those procedures to both new and in-use vehicles, including gasoline and diesel.

c. **When did EPA last revise testing standards for light duty vehicles?**

Response: The EPA continually updates its testing procedures as technology advances for vehicles and testing equipment. Virtually every new vehicle regulation that the EPA issues includes some updates to the test procedures including the rulemaking that set our latest Tier 3 standards completed in 2014. Updates to the driving cycles used in the testing have been less frequent as changes to real world driving occur over a longer period. In the late 1990s, the EPA implemented three additional driving cycles to better represent operation during cold temperatures (20°F), high accelerations, high speeds, high temperature/heat load (95°F + high solar load), and air conditioning use. In total, the EPA light-duty vehicle regulations have five driving cycles that represent a robust wide range of in-use operating conditions.

2. **Why did the EPA's testing fail to identify the existence of these defeat devices?**

Response: It appears that the software on the 2.0L vehicles is designed to precisely recognize the test and to operate within legal limits during testing. Our efforts to learn the truth about emission exceedances and other irregularities were impeded and obstructed by material omissions and misleading information from VW.

In September, 2015, a few days after issuing the first Notice of Violation to VW, EPA notified manufacturers that it would expand its compliance oversight by testing vehicles in new and unpredictable ways, and began doing so (it was in fact this enhanced EPA screening that subsequently identified the defeat device in the 3.0L VW products). EPA continually updates its compliance oversight protocols. The VW experience has reinforced the need to constantly adjust our approach. We are currently using both laboratory and on-road testing technologies to monitor emissions performance.

**3. Prior to the discovery of the defeat devices, did the EPA conduct in-use emissions testing of light duty vehicles?**

Response: Yes.

**a. If so, how frequently was this done and how did you select the vehicles to test?**

Response: Although it would be infeasible for EPA to test each vehicle that is produced, EPA's approach to light-duty compliance oversight is comprehensive and multi-dimensional. We scrutinize certification applications for technical merit and design integrity before vehicle production begins. We test vehicles before, during, and after production, and even several years after vehicles are in customer hands. We review thousands of manufacturer in-use verification program test results as well as emissions defect reports. We use surveillance and, when potential problems are indicated, target specific vehicle models for testing or extra review based on a multiplicity of information sources. We also conduct random audits of manufacturer testing and compliance protocols. The EPA's in-use surveillance testing program involves recruiting approximately 150 customer-owned in-use light duty vehicles each year for testing at the EPA's National Vehicle Fuel and Emissions Laboratory in Ann Arbor, MI.

**b. If not, why not?**

Response: N/A (See response to question 3a.)

**4. On September 25, 2015, the agency announced that it would be conducting additional in-use testing to evaluate the use of defeat devices in all vehicles.**

**a. How does this testing differ for standard emissions testing and affect the timing of the certification of conformity approvals?**

Response: The EPA is not revealing the nature of the expanded testing so as to keep it unpredictable for manufacturers. It does involve running more tests than had previously been the standard and testing in additional conditions that may be expected to be encountered in normal operation and use. This additional testing may add two to three weeks to the confirmatory testing process. However this testing typically happens in advance of submission of the application for certification and can occur in parallel with other pre-certification activity, so this testing will not necessarily add time to the application review or unduly delay the issuance of the certificate.

**b. Is EPA conducting this testing only to identify the use of "defeat devices"?**

Response: The testing is designed to screen for defeat devices and to identify certain other kinds of emission problems that might not be seen on standard Federal Test Procedures.

**c. If the agency identifies anomalies in the additional testing procedures, what steps will it take to validate findings and disclose procedures and results to affected auto makers?**

Response: In general, the EPA will undertake additional investigation to understand the anomalies, potentially involving further testing and/or communication with the manufacturer. The specific next steps the Agency may take cannot be generalized because each case is different. EPA's follow-up will depend on the facts specific to each circumstance. Where appropriate, the EPA may share data and corroborate test results with the California Air Resources Board.

**5. Of the three generations of VW vehicles, how did emissions differ from one generation to the next, according to data EPA, CARB collected?**

Response: This is the subject of ongoing investigations.

**a. What kind of data do you have for generation 3 vehicles?**

Response: This is the subject of ongoing investigations.

**b. Was the generation 3 technology getting closer to compliance with EPA emissions standards?**

Response: This is the subject of ongoing investigations.

**6. On September 3, 2015, VW admitted to CARB and EPA that its vehicles contained defeat devices.**

**a. Was this the first time that the issue of potential defeat devices came up? Was EPA or CARB specifically looking to see if defeat devices existed prior to this point?**

Response: The EPA and CARB were looking for the cause of the excess emissions identified in the ICCT/West Virginia University study. Defeat devices were one potential cause that the agencies considered. It was not until and after the September 3, 2015 meeting that the admission of a defeat device and related details became clear.

**b. What prompted VW to admit the existence of a defeat device at this point in time?**

Response: As stated in our September 18, 2015 Notice of Violation, VW admitted to designing and installing a defeat device in the 2.0 liter diesel vehicles only after it became clear that CARB and the EPA would not approve certificates of conformity for the 2016 model year diesel product until VW could adequately explain the anomalous emissions from the earlier model year vehicles and assure the agencies that the 2016 vehicles would not have similar issues.

**c. Who provided this information to CARB and EPA? Were these the same individuals involved in the previous briefings or discussions?**

Response: The information was provided to CARB and the EPA by employees and managers from Volkswagen AG and Volkswagen Group of America. Due to the ongoing investigation, we cannot provide additional information at this time.

**d. Did they provide an explanation why they had not provided you with this**

**information prior to this date?**

Response: EPA cannot comment at this time due to the ongoing investigation.

**i. Do you believe that the individuals you were engaged with since May 2014 were aware of the defeat device prior to the September disclosure?**

Response: EPA cannot comment at this time due to the ongoing investigation.

**7. In your written testimony, you stated that “after the high emissions were discovered, VW concealed the facts from the EPA, the State of California and from consumers.”  
a. What specifically did VW conceal?**

Response: For at least six years, VW has been installing illegal software in some of its diesel passenger cars. This software is designed to trick emissions tests into thinking VW’s diesel cars meet the standards that protect clean air. The software turns off emissions controls when driving normally, and turns them on when the car is undergoing an emissions test. This illegal practice was concealed from EPA and the California Air Resources Board. Due to the fact that the investigation is continuing additional facts may yet become known.

**b. Do you believe the individuals EPA was interacting with had knowledge of the defeat device and intentionally withheld this information?**

Response: EPA cannot comment at this time due to the ongoing investigation.

**8. Please explain how EPA's recall process works:**

Response: EPA has the authority under Section 207(c)(1) of the Clean Air Act to require a manufacturer to issue a recall when EPA determines that a substantial number of vehicles do not conform to EPA regulations. When EPA identifies an emissions problem that necessitates a recall, the manufacturer may and typically does choose to perform the recall voluntarily. If EPA orders a recall, EPA must first approve the manufacturer’s recall plan. Regardless of whether the recall is ordered or voluntary, the manufacturer must track and report customer participation. The regulations at 40 CFR Part 85 Subpart S contain the applicable requirements and process when EPA orders a recall.

**a. Does EPA review and approve a proposed solution prior to a manufacturer pursuing a recall?**

Response: Yes, for ordered recalls, EPA reviews a manufacturer’s proposed solution before approving a recall plan and before the manufacturer implements the recall.

**b. What is the process for notifying customers?**

Response: Manufacturers must describe the process they will use to notify customers in the recall plan they submit for EPA approval. Per Clean Air Act section 207 and EPA’s regulations in 40 CFR part 85, subpart S (40 CFR 85.1801-85.1808) manufacturers are, at a minimum, required to notify customers by mail. However, this does not preclude manufacturers from using additional means to contact their customers (e.g., email, telephone, social media, etc.).

**c. Does EPA track recall compliance and, if so, how does that work?**

Response: Yes. Once a recall is underway, manufacturers must submit quarterly reports to EPA summarizing overall recall response and repair rates.

**9. On average, how many EPA/emissions-related compliance recalls are conducted annually?**

Response: On average, about 30 - 40 separate EPA/emissions-related compliance recalls are conducted a year, affecting some 2 - 4 million vehicles. These include ordered and voluntary recalls, but the vast majority of emissions recalls are conducted voluntarily by the manufacturer. Many of these voluntary recalls are for minor fixes such as software improvements or upgrades.

**a. What is the average take-rate, or consumer response, for EPA recalls?**

Response: EPA recall regulations require manufacturers to report recall completion rates for six quarters following the start of a recall, whether the recall is ordered by EPA or initiated voluntarily by the manufacturer. The most recent analysis EPA has on emissions recall completion rates is from recalls that were initiated in 2010. It shows an overall average completion rate of 65% after six quarters of reporting.

**10. What happens if a customer does not get their vehicle fixed once a recall is announced?**

Response: Manufacturers are responsible for issuing recall notices and following up with vehicle owners. EPA does not interact directly with car owners on recalls. Some states with emissions inspections programs require proof of repair prior to inspection, and in some states, prior to annual registration (see below).

**a. How many states are like California, which will withhold your registration if you don't comply with the recall?**

Response: Vehicle owners who live in the 26 states with "enhanced" emissions inspection programs may be required to show proof that recall repairs have been completed prior to inspection. Of those states, 18 require diesel as well as gasoline vehicles to undergo inspections. Some states require proof that emissions recalls have been performed prior to issuing the vehicle registration.

**11. According to the 2009-2011 EPA compliance report, manufacturers designed their vehicles to emissions levels "significantly below the level the standards allow."**

**According to the report, VW vehicles were approximately 50% below the standard.**

**a. Since NOx emissions standards are based on fleet and not individual vehicles, has EPA determined that VW's fleet now exceeds emissions standards?**

Response: Manufacturers are required to comply with both the fleet average NOx standard and a vehicle specific NOx standard selected by the manufacturer at the time of certification. Our investigation is ongoing, including investigating the impact of VW's use of the defeat device installed in the 2.0L VW vehicles on their fleet average NOx compliance.

**12. EPA and CARB have stated that the defeat device results in on-road emissions of nitrogen oxides (NOx) that are 10 to 40 times higher than permitted by regulation. Please provide a detailed explanation or description of any assessments EPA has**

**conducted to evaluate the real-world effects of these emissions. In addition, please respond to the following questions:**

Response: EPA cannot comment at this time due to the ongoing investigation.

**a. Are these constant emissions or only under certain driving conditions?**

Response: The 2.0L VW diesels are designed to have increased emissions under all driving conditions with the sole exception that when operated under the precise conditions of the Federal Test Procedures, the vehicles will have very clean emissions in order to appear to "meet" the emissions standards. The absolute level of excess emissions changes through different driving conditions. For example, emissions are higher driving uphill when compared to driving downhill. Emissions from the 2.0L vehicles generally are much higher in all real world driving.

**b. What percentage of all U.S. domestic NOx emissions come from these vehicles, if they meet the standard?**

Response: Our emissions models tell us that NOx emissions from light-duty diesel cars and trucks contribute less than 0.1 percent of NOx pollution from on-road vehicles. The fraction of U.S. domestic NOx emissions from all sources contributed by light-duty diesel vehicles is even smaller. The low contribution to NOx emissions from light-duty diesels is due to the relatively small number of light-duty diesel vehicles in the U.S. fleet, and to the small fraction of miles traveled by these vehicles compared to other vehicles. Light duty diesel vehicles comprise only about 1% of U.S. light duty vehicles. The vast majority of NOx from on-road vehicles comes from heavy-duty trucks and gasoline vehicles.

**c. How does that change with use of this defeat device?**

Response: EPA cannot comment at this time due to the ongoing investigation.

**13. Please explain EPA's pre-production confirmatory testing. In addition, please respond to the following questions:**

Response: Prior to submitting an application for certification, manufacturers test pre-production vehicles using EPA test procedures. Manufacturers submit the test data and documentation to EPA. Experienced EPA engineers and scientists review manufacturer data and other certification application materials, request additional evidence, and perform confirmatory tests on a portion of the vehicles before reaching a decision to approve or deny an application. EPA audits between 15 and 20 percent of the vehicle models manufacturers submit for certification, and conducts the confirmatory testing at its National Vehicle and Fuel Emissions Laboratory in Ann Arbor, MI.

**a. Is this what the VW software was designed to defeat?**

Response: It appears that the 2.0L software is designed to precisely recognize the test and to operate within legal limits during testing. The software directed the emission control system to operate properly during testing but to shut off critical emission control functions during all other operating modes.

**b. It appears that manufacturers are also required to conduct a number of in-use tests over the life of the vehicle once in production: what tests do they conduct? Do these include on road tests?**

Response: Manufacturers are required to test in-use vehicles under the mandatory In-Use

Verification program. These tests are performed on one and four year old vehicles at about 10,000 and 50,000 miles, respectively. They are required to conduct Federal Test Procedure (FTP), highway, US06, and, for gasoline vehicles, 2 day evaporative emissions tests (these are all conducted in laboratories). They are not required to perform on-road tests. Last year, manufacturers tested about 1,600 vehicles under this program.

**i. What testing did VW conduct and did EPA review the results of these tests? Did they include on-road testing?**

Response: VW conducted the required in-use testing which EPA reviewed as part of our normal process. This did not include on-road testing.

**c. EPA conducts in-use surveillance testing once a vehicle is in production. How does that work?**

Response: EPA has broad discretion to conduct tests to verify vehicle performance with the emission regulations. As part of its ongoing compliance oversight, EPA tests production vehicles to ensure that they match the certified design. EPA also conducts audits and employs a variety of other tools to check manufacturer compliance. EPA's in-use surveillance typically involves laboratory testing, but EPA has the authority to conduct over-the-road and other types of testing as it deems necessary. EPA conducts in-use vehicle surveillance testing at the National Vehicle and Fuel Emissions Laboratory in Ann Arbor, MI. The purpose of the EPA surveillance program is to assess emissions performance a few years after vehicles enter the fleet. EPA typically recruits two- or three-year-old vehicles from volunteers in southeast Michigan. EPA selects vehicles for surveillance both randomly and based on certification data, manufacturer in-use verification data, vehicle production volume, new technology, and public complaints and inquiries. EPA typically tests approximately 150 surveillance vehicles a year.

**i. Did the EPA conduct in-use surveillance testing of any of the vehicles affected by this alleged defeat device?**

Response: EPA conducted surveillance testing of 2010 and 2013 model year test groups including VW Golf, Jetta, and Beetle diesel vehicles.

**1. If so, how were the vehicles tested?**

Response: These vehicles were tested over the Federal Test Procedure, the highway fuel economy cycle, and the US06 cycle.

**2. If not, why not?**

Response: N/A.

**14. When it was introduced on these vehicles, VW's clean diesel technology was considered advanced/novel. What did EPA do to understand their technology?**

Response: Please see answers to Question #1 and #13. Further, EPA's Ann Arbor laboratory participated in several research partnerships and was deeply involved in the development of clean diesel technology in general. EPA's National Center for Advanced Technology (NCAT) was doing its own engineering and feasibility analysis of clean diesel technology in the early and mid-2000 time frame. The NCAT staff included experts with deep understanding of diesel technology.

**Attachment 2-Member Requests for the Record**

*During the hearing, Members asked you to provide additional information for the record, and you indicated that you would provide that information. For your convenience, descriptions of the requested information are provided below.*

**The Honorable Tim Murphy**

1. **Who from EPA was involved in the conversations with CARB and VW when the appropriate recall solution to fix the excess emissions issue was being discussed?**  
Response: EPA cannot comment at this time due to the ongoing investigation.

**The Honorable Morgan Griffith**

1. **After EPA has settled on an amount to fine VW, would it be appropriate for a portion of that fine to be given to West Virginia University for their efforts which helped discover the emissions deception?**  
Response: Civil penalties under the CAA are required by law to be directed to the Treasury.

**The Honorable Kathy Castor**

1. **Has VW provided EPA with an engine map that shows specifically how the defeat device works for each model car in which it was installed?**  
Response: VW has provided EPA's Office of Transportation and Air Quality (OTAQ) a detailed description of the defeat device and examples of some of the engine maps from one model. This information has been requested by the Office of Enforcement and Compliance Assurance (OECA) under the provisions of section 208 of the Clean Air Act.
2. **Please inform the Committee if VW does not provide EPA the results of their internal investigation.**  
Response: VW is expected to comply with all requests for information related to the ongoing investigation. However, EPA will inform the Committee if VW does not provide EPA with results of their internal investigation.

