

# Diesel Issue

**We worked intensively to clarify the irregularities in emissions and provided effective technical solutions for the affected vehicles. Extensive settlement agreements were reached in the United States.**

## IRREGULARITIES IN EMISSIONS

On September 18, 2015, the US Environmental Protection Agency (EPA) publicly announced in a “Notice of Violation” that irregularities in relation to nitrogen oxide (NO<sub>x</sub>) emissions had been discovered in emissions tests on certain vehicles with Volkswagen Group diesel engines. Volkswagen admitted to irregularities in this context. In its ad hoc release dated September 22, 2015, the Volkswagen Group announced that noticeable discrepancies between the figures achieved in testing and in actual road use had been identified in around eleven million vehicles worldwide with certain diesel engines.

On November 2, 2015, the EPA issued another “Notice of Violation” alleging that irregularities had also been discovered in the software installed in vehicles with type V6 3.0 l TDI diesel engines. Audi has confirmed that at least three auxiliary emission control devices (AECDs) were not disclosed in the course of the US approval documentation of vehicles with six-cylinder V6 3.0 l TDI diesel engines.

## EXTENSIVE INVESTIGATIONS BY VOLKSWAGEN

Volkswagen is working intensively to clarify the issue. To this end, Volkswagen ordered both internal inquiries and external investigations. The external investigation is being conducted with the involvement of external lawyers in Germany and the USA. To facilitate the investigations in the course of clarifying the facts, the Group Board of Management established a cooperation program in 2015, which was in place for a limited time and was open to all employees covered by collective agreements.

The Supervisory Board of Volkswagen AG formed a special committee that coordinates all activities relating to the diesel issue for the Supervisory Board. Further information regarding the special committee on diesel engines can be found in the Report

of the Supervisory Board on pages 12 to 17. Volkswagen AG commissioned an external investigation by US law firm Jones Day. This is an independent and comprehensive investigation to address the diesel issue. Jones Day is updating the Company and the Department of Justice (DOJ) on the current results of its investigation on an ongoing basis and supports Volkswagen AG in its cooperation with the judicial authorities. The course of action in clearing up the situation was determined largely by the investigative authorities.

Furthermore, Volkswagen AG filed a criminal complaint in September 2015 with the responsible public prosecutor's office in Braunschweig, which is independently investigating the matter, including allegations of fraud. Searches were carried out in Wolfsburg and elsewhere with the involvement of special agents from the State Office of Criminal Investigation.

We are cooperating with all the responsible authorities to clarify these matters completely and transparently.

Investigations were divided into two parts. The Group Internal Audit function, which involved bringing together experts from various Group companies to form a task force, focused – as instructed by the Supervisory Board and Board of Management – on reviewing relevant processes, reporting and control systems as well as the accompanying infrastructure. This function paid special attention to the processes of software development for the engine control unit. The Group Internal Audit function provided its findings to the external experts from Jones Day. The internationally renowned law firm was engaged by Volkswagen AG to fully clarify the facts and responsibilities in a second investigation. Jones Day has received operational support from the auditing firm Deloitte.

The special investigation has involved conducting interviews with employees and managers who were identified by Jones Day

as relevant sources of information in connection with the diesel issue. In addition, Jones Day has evaluated documents and data (such as emails).

We will discuss the action taken in response to the audit findings at the end of this section.

Employees from affected departments have been dismissed as a further direct consequence of the findings from the internal inquiries and external investigations.

The information that has been viewed so far has helped trace the origin and development of the diesel issue to a large extent. The starting point of the diesel issue at Volkswagen was the strategic decision to launch a large-scale promotion of diesel vehicles in the USA in 2005. To this end, a new diesel powertrain unit featuring high performance and cost-efficient production – the EA 189 engine – was to be developed.

The US emissions limits for emissions of pollutants are strict. Under the strictest standard in the USA at the time, only 31 mg/km of NO<sub>x</sub> was allowed to be emitted, about one-sixth of the Euro 5 standard applicable in Europe at that time. When designing state-of-the-art diesel engines, technicians and engineers face the challenge that there is a conflicting objective between the reduction of NO<sub>x</sub> and other parameters.

In the ensuing period, in order to resolve this conflicting objective satisfactorily within the time frame and budget of the EA 189 project, a group of persons at levels below the Group's Board of Management in the powertrain development division decided to modify the engine management software. In the engine controller of the vehicles with type EA 189 diesel engines there was a software that recognizes the driving curve of the official type test, regardless of whether the vehicle is on a test bench or on the road. Depending on the recognition of the driving curve, the engine controller switches to 2 different modes: mode 1 optimum NO<sub>x</sub> for test bench operation or mode 2 optimum particulate matter for road operation.

As things stand, outside the group of persons mentioned above, the then and current Board of Management of Volkswagen AG had, at any rate, no knowledge of the use of an unlawful “defeat device software” under US law at the time.

In the months after the International Council on Clean Transportation (ICCT) study was published in May 2014, the test set-ups on which the ICCT study was based were repeated in-house at Volkswagen and the unusually high NO<sub>x</sub> emissions confirmed. The US environmental authority of California – the California Air Resources Board (CARB) – was informed of this result, and at the same time the offer was made to recalibrate the type EA 189 diesel engines as part of a service measure that was already planned in the USA. This measure was evaluated and adopted by the Ausschuss für Produktsicherheit (APS – product safety committee), which includes, among others, employees from the technical development, quality assurance, sales, production, logistics, procurement and

legal departments, as part of the existing processes within the Volkswagen Group. The APS thus plays a central role in the internal control system at Volkswagen AG. There are currently no findings to confirm that an unlawful “defeat device software” under US law was reported by the APS as the cause of the discrepancies to the persons responsible for preparing the 2014 annual and consolidated financial statements. Instead, at the time that the annual and consolidated financial statements were being prepared, this group of people remained under the impression that the issue could be solved with comparatively little effort as part of a field measure. By the summer of 2015, however, it was reliably recognized that the cause of the discrepancies was a software modification that would qualify as a “defeat device” as defined by US environmental law. This culminated in the disclosure of the US “defeat device” to EPA and CARB on September 3, 2015. According to the assessment at that time of the members of the Board of Management dealing with the matter, the scope of the costs expected as a result by the Volkswagen Group (recall costs, retrofitting costs and financial penalties) was basically not dissimilar to that of previous cases in which other vehicle manufacturers were involved, and therefore appeared to be controllable overall with a view to the business activities of the Volkswagen Group. This appraisal by Volkswagen AG was based on the assessment of a law firm brought in in the USA for approval issues, according to which similar cases in the past were resolved amicably with the US authorities. Publication of a “Notice of Violation” by the EPA on September 18, 2015, which came as a surprise to the Company, on the facts and possible financial consequences, then presented the situation in a completely different light.

To clarify the issue, Audi set up an internal task force, furnished committees with the necessary resources and launched a program of cooperation for employees covered by collective agreements in 2015. The law firm Jones Day also conducted independent and comprehensive investigations into this matter.

The incumbent members of the Board of Management of AUDI AG have declared as already in the previous year that prior to their notification by the EPA in November 2015, they had no knowledge of the use of an unlawful “defeat device software” under US law in the V6 3.0 l TDI engines.

We are consistently seeking to realize organizational and procedural potential for improvement that has come to light as a result of the diesel issue.

Also, the publications released by the reporting date, as well as the continued investigations and interviews in connection with the diesel issue, did not provide the Group Board of Management with any new reliable findings or assessments regarding the underlying facts and the assessment of the associated risks (e.g. investor lawsuits).

**AFFECTED DIESEL ENGINES**

<b>FOUR-CYLINDER</b>		<b>SIX-CYLINDER</b>
10,741 thousand		113 thousand
<b>EU28</b>	<b>REST OF THE WORLD</b>	<b>USA/CANADA</b>
8,494 thousand	1,639 thousand	721 thousand

**EU28 AND REST OF THE WORLD**

In fiscal year 2016, the Kraftfahrt-Bundesamt (KBA – German Federal Motor Transport Authority) issued official approvals needed for modification of the Volkswagen Group vehicles fitted with four-cylinder EA 189 1.2 l, 1.6 l and 2.0 l diesel engines falling within its remit. Only the approval of the technical solutions for 14 thousand vehicles is still outstanding, which is expected to be granted in the first quarter of 2017.

The KBA ascertained for all approved clusters (groups of vehicles) that implementation of the technical solutions would not bring about any unfavorable changes in fuel consumption, engine power, torque and noise emissions. Once the modifications have been made, these vehicles will thus comply with all legal requirements and the emission standards applicable in each case.

The SEAT brand received approvals in principle from its respective type approval authority, the Ministry of Industry in Spain in fiscal year 2016.

The type approval authority for the ŠKODA brand is the Vehicle Certification Agency in the United Kingdom. The approval process for ŠKODA vehicles is still ongoing.

In some countries outside the EU – among others Switzerland, Australia, South Korea, Taiwan and Turkey – national type approval is based on prior recognition of the EC/ECE type approval. We are also in close contact with the authorities in these countries in order to finalize the approval process.

We are now working expeditiously to implement the technical solutions in the field. In agreement with the relevant authorities, the owners of the affected vehicles will be notified and can then make an appointment for modification in an authorized workshop.

The implementation of the technical solution for the highest-volume variant – the 2.0 l TDI engine – began already in January 2016. The 1.2 l TDI followed in the course of the year. A software update is being performed for these engine versions. The implementation phase for the recall of the 1.6 l TDI engine began in November 2016, which provided additional lead time necessary for the hardware modification. In the 1.6 l TDI engines, a “flow transformer” will be fitted in front of the air mass sensor to improve the sensor’s measuring accuracy. Combined with updated software,

this will optimize the amount of diesel injected. Based on current planning, implementation of measures will take the 2017 calendar year to complete. Volkswagen guarantees that the solutions will be implemented free of charge for our customers.

In addition, Volkswagen AG has, until December 31, 2017, expressly waived citation of the statute of limitations with regard to any claims made in relation to the software installed in vehicles with engines of type EA 189 by vehicle customers outside the United States and Canada.

**USA/CANADA**

On January 4, 2016, the DOJ, on behalf of the EPA, filed a civil complaint against Volkswagen AG, AUDI AG and other companies of the Volkswagen Group. The claims asserted under civil law are based on the alleged use of the defeat device software in violation of the US Clean Air Act. The complaint’s allegations relate to both the four-cylinder and the six-cylinder diesel engines. Volkswagen AG held internal development responsibility for the four-cylinder diesel engines within the Group, and AUDI AG for the six-cylinder diesel engines.

In the USA and Canada, three variants of certain four-cylinder diesel engines are affected. For the vehicles with six-cylinder diesel engines, the software parameters are being revised so that they can be resubmitted for approval in the USA. Due to these considerably stricter NO<sub>x</sub> limits, it is a greater technical challenge to refit the vehicles so that all applicable emissions limits can be met. Volkswagen is in intensive discussions with the EPA and CARB concerning remedial measures. The technical solutions will be implemented as soon as they have been approved by the authorities. The respective US and Canadian companies of the Volkswagen Group have withdrawn all affected new vehicles from sale with pending approval of technical solutions.

In June and December 2016 and January 2017, Volkswagen AG, AUDI AG, Volkswagen Group of America, Inc. and certain affiliates reached settlement agreements in the USA with the DOJ on behalf of the EPA, CARB, and the California Attorney General, the US Federal Trade Commission (FTC), and private plaintiffs represented by a Plaintiffs’ Steering Committee (PSC) in the multidistrict litigation pending in California.

The settlement agreements will resolve certain civil claims made in relation to affected diesel vehicles in the USA: approximately 475,000 vehicles with four-cylinder diesel engines from the Volkswagen Passenger Cars and Audi brands and around 83,000 vehicles with six-cylinder diesel engines from the Volkswagen Passenger Cars, Audi and Porsche brands. In October 2016, the court finally approved the settlement agreements in connection with the four-cylinder diesel engines. A number of class members have filed appeals to an US appellate court from the order approv-

ing the settlements in connection with the four-cylinder diesel engines. The court has yet to approve the settlement agreements in relation to the six-cylinder diesel engines, which were lodged with the court on January 31, 2017.

The settlements with respect to the four-cylinder diesel engine vehicles provide affected customers with the option of a buyback or, for leased vehicles, early lease termination, or a free emissions modification of the vehicles, provided that the EPA and CARB approve the modification. The settlements with respect to the six-cylinder diesel engine vehicles, which remain subject to court approval, provide for a buyback or, for leased vehicles, early lease termination program, or a free emissions modification provided that EPA and CARB approve the modification, for Generation 1 six-cylinder vehicles, and a free emissions recall and modification program (pending EPA and CARB approval) for Generation 2 six-cylinder vehicles. If modifications are not approved for Generation 2 six-cylinder vehicles, the settlements require Volkswagen to offer a buyback or, for leased vehicles, early lease termination for those vehicles. Volkswagen will also make additional cash payments to affected current owners and lessees as well as certain former owners and lessees.

In addition, Volkswagen agreed to support environmental programs. Volkswagen will pay USD 2.7 billion over three years and Audi will make an additional one-time payment in the amount of USD 225 million into an environmental trust, managed by a trustee appointed by the court, to offset excess NO<sub>x</sub> emissions. Volkswagen will also invest a total of USD 2.0 billion over ten years in zero emissions vehicle (ZEV) infrastructure as well as corresponding access and awareness initiatives for such technology.

In addition, the six-cylinder vehicle settlement, if approved by the court, calls for an additional USD 25 million payment to CARB to support the availability of ZEVs in California.

In January 2017, Volkswagen AG agreed with the US government to resolve federal criminal liability relating to the diesel issue. The Volkswagen Group also agreed with the US government to resolve civil penalties and injunctive relief under the Clean Air Act and other civil claims against the Company relating to the diesel issue.

The coordinated resolutions involve four settlements, including a plea agreement between Volkswagen AG and the DOJ.

The plea agreement is accompanied by a published Statement of Facts that lays out relevant facts and has been acknowledged by Volkswagen AG.

As part of its plea agreement, Volkswagen AG has agreed to plead guilty to three felony counts under US law: conspiracy, obstruction of justice and using false statements to import cars into the US. The plea agreement, which is subject to US federal court approval, provides for payment of a criminal fine of USD 2.8 billion and the appointment of an independent monitor for a period of three years. The independent monitor will assess and oversee the Company's compliance with the terms of the resolution. This includes overseeing the implementation of measures to further strengthen compliance, reporting and monitoring systems, and an enhanced ethics program.

Volkswagen AG, AUDI AG and other Volkswagen Group companies have further agreed to pay, subject to court approval, a combined penalty of USD 1.45 billion to resolve US federal environmental and customs-related civil claims in the USA. Furthermore, Volkswagen AG and Volkswagen Group of America, Inc. have agreed to pay a separate civil penalty of USD 50 million to the Civil Division of the DOJ to settle potential claims asserted under the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA). Volkswagen AG and Volkswagen Group of America, Inc. specifically deny any liability and expressly dispute FIRREA claims, which they are settling to avoid the uncertainty and expense of protracted litigation.

By their terms, these agreements resolve liability issues under US law and are not intended to address any liability issues, where such exist, under the laws or regulations of any jurisdiction outside the United States. Volkswagen continues to cooperate in full with investigations by the DOJ into the conduct of individuals.

Furthermore, Volkswagen reached agreements with the attorneys general of 44 US states, the District of Columbia and Puerto Rico to resolve their existing or potential consumer protection and unfair trade practices claims – in connection with vehicles in the USA fitted with four-cylinder and six-cylinder diesel engines – for a settlement amount of USD 603 million.

These settlements do not resolve potential state environmental claims related to the affected vehicles or certain other claims. Moreover, investigations by various US regulatory and government authorities, including in areas relating to securities, financing and tax, are ongoing.

In September 2016, Volkswagen announced that it had finalized an agreement to resolve the claims of Volkswagen-branded franchise dealers in the United States relating to the affected vehicles and other matters asserted concerning the value of the franchise. The settlement agreement includes a cash payment of up to USD 1.208 billion and additional benefits to resolve alleged past, current and future claims of losses in franchise value. The court finally approved the settlement agreement in January 2017. This approval order is subject to appeal before an US appellate court.

In Canada, the NO<sub>x</sub> emissions limits for vehicles are the same as in the USA. Civil consumer claims and regulatory investigations have been initiated for vehicles with 2.0 l and 3.0 l diesel engines. In December 2016, Volkswagen AG and other Canadian and US Volkswagen Group companies reached a class action settlement in Canada with consumers relating to 2.0 l diesel vehicles. The settlement provides for cash payments of up to CAD 564 million to eligible owners and lessees, and many of these affected customers will also have the option of a free emissions modification of their vehicle if approved by regulators, or a buyback or trade-in or – for leased vehicles – early lease termination. The class settlement is subject to court approval, the hearings for which are scheduled for March 2017. Concurrently with the announcement of the class settlement in December 2016, Volkswagen Group Canada agreed with the Commissioner of Competition in Canada to a civil resolution of its regulatory inquiry into consumer protection issues in relation to 2.0 l diesel vehicles. This resolution was reached with the benefits in the class settlement, and Volkswagen Group Canada will also pay a CAD 15 million civil administrative monetary penalty. Civil consumer claims and the Commissioner of Competition's investigation with respect to 3.0 l diesel vehicles remain pending. Also, criminal enforcement-related investigations by the federal environmental regulator and quasi-criminal enforcement-related investigations by a provincial environmental regulator are ongoing in Canada in relation to 2.0 l and 3.0 l diesel vehicles.

## IMPACT ON THE VOLKSWAGEN GROUP

### Operating result for 2016

Special items recognized in operating profit relating to the diesel issue amounted to €-6.4 (-16.2) billion in fiscal year 2016, mainly due to higher provisions for legal risks.

### Legal risks

Various legal risks are associated with the diesel issue. The provisions recognized for this matter and the contingent liabilities disclosed as well as the other latent legal risks are partially subject to substantial estimation risks given the complexity of the individual factors, the ongoing approval process with the authorities and the fact that the independent, comprehensive investigations have not yet been completed. The legal risks include (detailed information on the legal risks can be found on pages 193 to 198):

- > Criminal and administrative proceedings worldwide (excluding the USA/Canada)
- > Product-related lawsuits worldwide (excluding the USA/Canada)
- > Lawsuits filed by investors worldwide (excluding the USA/Canada)
- > Proceedings in the USA/Canada

Should these legal risks materialize, this could result in considerable financial charges.

Further risks from the diesel issue can be found in the Report on Risks and Opportunities on page 183.

## INTEGRITY

On January 1, 2016, we started to create the organizational framework for a centralized integrity management function by setting up the new Board of Management position for Integrity and Legal Affairs. This Group function is responsible for planning, preparing and implementing programs and projects aimed at raising, clarifying and intensifying a collective awareness of integrity as well as reinforcing a shared culture of integrity in the Company. A continuous exchange of ideas and discussion of issues relating to integrity are key components of the integrity management function.

Volkswagen AG is undergoing the most far-reaching process of change in the Company's history. Particularly the loss of trust as a result of the diesel issue clearly showed that, in terms of integrity, Volkswagen must become a role model for a modern, transparent and successful enterprise. This plan is one of the strategic goals of TOGETHER – Strategy 2025.



Behaving with integrity is a prerequisite for commercial success and for a positive future for the Company. Only with lasting, dependable integrity will our Company gain and strengthen the trust of its staff, customers, shareholders, business partners and the general public.

#### Integrity program

Volkswagen's goal is to enhance the culture of integrity in the Company and create a collective awareness of integrity. To this end, we launched an integrity program in 2016 involving all employees that is based on six action areas:

- > Dialog & communication
- > Sounding board program
- > Executive program
- > Processes & tools
- > Monitoring & reporting
- > Internationalization

#### Dialog & communication

We provided information at regular intervals on the concept of integrity and its importance as well as on the evolution of the integrity program. In addition, we set up an integrity mailbox to create opportunities for direct communication between the integrity management team and the workforce. An exchange in the form of a live chat also took place on the GroupConnect internal social network.

#### Sounding board program

A shared understanding of what integrity means at Volkswagen can only be developed with the involvement and the experience of the entire workforce. This is why we have instituted the sounding board program as a key initiative in the integrity program. It will ensure close collaboration and dialog between the integrity management team and the workforce with the help of integrity ambassadors – voluntary support staff from management and staff circles. Interactive services as part of this program round off the communications portfolio.

#### Executive program

Management's function as a role model in relation to integrity along with managers' special responsibility was clearly illustrated in a letter signed by all members of the Group Board of Management and in further information to management. The topic of integrity was also a fixed part of many management events.

#### Processes & tools

We are continuously examining the possibility of also implementing our principles of integrity into key management elements of the Company, for example in the field of human resources and collaboration with business partners.

#### Monitoring & reporting

Regular monitoring of the integrity program not only helps us to fine-tune and readjust; it also underlines the relevance of the concept of integrity for employees and managers. Here, continuous evaluation of feedback from the integrity ambassadors and from employees and managers on issues relating to the adaptation and refinement of concepts plays just as important a role as the reporting in internal media and publications such as the sustainability report.

#### Internationalization

Once the pilot phase at the Wolfsburg site has ended, we intend to expand the integrity program to all brands, companies and regions. Those responsible in the areas of governance, risk and compliance are an important link in this context.

#### ACTION IN RESPONSE TO AUDIT CONCLUSIONS

Specific corrective action was proposed by Group Internal Audit for the weaknesses it identified in 2015.

In a structured follow-up process, implementation of the corrective action in 2016 was tracked continuously and reported to the relevant bodies. A total of 31 measures were defined by Group Internal Audit and the majority of them were implemented by the end of 2016. The plan is to implement the remaining measures by the middle of 2017.

While the procedural investigations of Group Internal Audit primarily applied to the processes in connection with the diesel technology in 2015, the findings resulting from the investigations in the reporting period were transformed into general guidelines to shore up governance and compliance. The so-called Golden Rules sharpen the focus even more and increase the acceptance for critical process steps. These rules represent minimum requirements in the organization, process and tools & systems categories in the areas of control unit software development, emission classification and escalation management.

Self-assessments were performed in the Volkswagen Passenger Cars, Audi and Porsche brands to ensure structured application of the Golden Rules and thus to optimize the internal control system (ICS) within the areas affected. The results were validated as an integral part of an investigation by the audit departments in the relevant brands or by Group Internal Audit. By applying this consistent methodology across the brands, the implementation status of the guidelines in the Golden Rules was established and transparency created regarding the degree of maturity of the ICS for the relevant processes, also for the Board of Management.

In addition, a cross-brand project that ensures similar implementation of the Golden Rules taking the individual features of the brands into account was initiated under the responsibility of Group Research and Development. As part of this, development departments within the group reviewed their processes. Representatives of the brands work on the optimization of their processes in project groups.

Key elements of the process optimization are:

- › Early documentation and interpretation of legislation around the world and alignment of the product portfolio with the legal requirements
- › Guidelines for the development of software for drive control units with documentation of the features with relevance for registration
- › Introduction of multiple controls for approvals in the product development process
- › Reorganization within development for the purpose of separating the responsibility for the development of drives from official approvals
- › Formation of new bodies for cross-brand management and clarification of compliance issues
- › Uniform process standards and work instructions that give those involved legal certainty in the work process
- › Training programs in which everyone involved in the process is required to participate
- › Regular reporting to the Group Board of Management in order to create transparency in relation to the implementation status of this process optimization

Adaptation of the Golden Rules to other vehicle development processes and other areas of development is being addressed.

#### TO OUR STAKEHOLDERS

Volkswagen does not tolerate any breaches of the law or other wrongdoing. We deeply and sincerely regret the behavior that gave rise to the diesel crisis. Such misconduct runs contrary to all of the values that Volkswagen stands for. We have taken significant steps to strengthen accountability, extend transparency and prevent something like this from happening again.

The trust of our customers, our shareholders, partners, employees and the general public is our most important asset. The Group has substantially elevated its commitment to working ethically and with integrity. Volkswagen can and will set an example in the years ahead as to how a large, global company embodies and takes its social responsibility seriously.