

KBA



/ Market Surveillance Report 2020

Finalised on 29 April 2021

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/ Introduction

The objectives of market surveillance are to protect and ensure public interests such as health, safety and the environment. Market surveillance is based on national and international legislation that provides various tools to protect the market from harmful influences. It is about the safety and environmental compatibility of vehicles, competition and a level playing field for all market participants.

The Kraftfahrt-Bundesamt (KBA) is responsible for market surveillance of motor vehicles and their systems, components and separate technical units. Three pillars form the basis of KBA's effective market surveillance: **investigations**, **recalls** and **sanctions**.

Investigations serve to examine whether the goods made available on the market comply with the legal requirements. If KBA identifies specific deviations from the requirements or product risks to health, safety and the environment, the manufacturers, distributors or other economic operators responsible for the product are

confronted with the results. If serious hazards are identified, the product owner, usually the manufacturer, is required to implement a recall. If necessary, restrictive measures for making the products available on the market may also be issued.

KBA initiates **recalls** as an official measure against product responsables, if the vehicles or vehicle parts they make available on the market deviate from the applicable regulations or pose a risk to health, safety, the environment or other goods worthy of protection in the public interest. The product responsables must take all measures to eliminate the deficiency and restore the product to its legal condition. As a rule, the deficiency is remedied in the manufacturer's specialist workshops. Affected vehicle owners are informed by mail and asked to present their vehicle to the specialist workshop for defect rectification.

If this does not happen despite repeated requests, KBA can initiate the prohibition of operation of the vehicles in question by notifying the local registration office so



Source: KBA

that the defective vehicle is removed from circulation and the safety of all road users – not just the owner’s – is ensured. In addition to the vehicle-specific owner notification as part of the recalls, KBA also offers the general public a convenient way to find out about recalls via a manufacturer- and model-specific search in the form of the recall database. The recall database is being continuously developed. If you have any further questions, KBA is happy to answer them by phone, e-mail or letter.

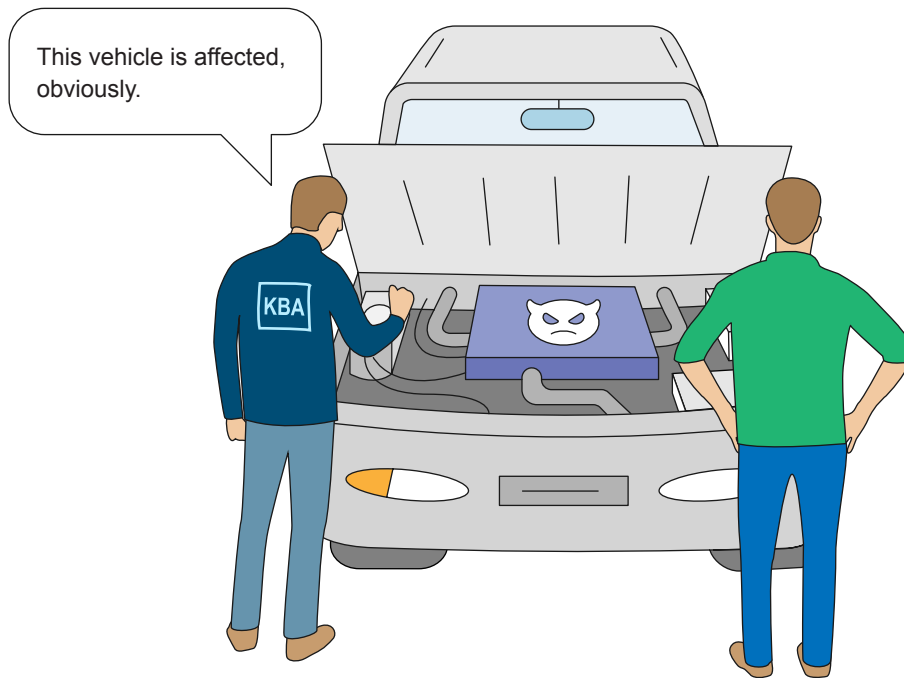
KBA imposes **sanctions** on those responsible for products who do not comply with the specified rules. A significant proportion of KBA’s proceedings are directed against vehicles and products that are not offered for sale in compliance with the applicable laws. These can be identified by missing or incorrect approval marks. KBA punishes violations with severe fines. For this reason, KBA monitors the market and examines it for such products. Furthermore, KBA examines products detected during customs import controls and decides on their importation. In this way, KBA prevents non-compliant vehicles and vehicle parts from entering the market at an early stage. The focus is on safety, environmental compatibility and fair competition.

KBA works closely with other national and international authorities to monitor the market effectively. In doing so, KBA contributes its expertise to expert committees and adapts the tools of market surveillance to technological progress.

For example, KBA maintains a close exchange with the European Commission and the type approval and market surveillance authorities of the European member states. The member states exchange information on tests in order to avoid unintentional duplicate tests. The results and actions taken are shared with all member states to achieve a unified approach in Europe.

This year’s Market Surveillance Report gives an overview of the activities of KBA within the addressed pillars of market surveillance in 2020. Furthermore, the recall measures carried out, the communication to the citizens and the sanctioning of products illegally made available on the market are illustrated. Finally, an outlook on market surveillance in 2021 is given.

/ Investigations

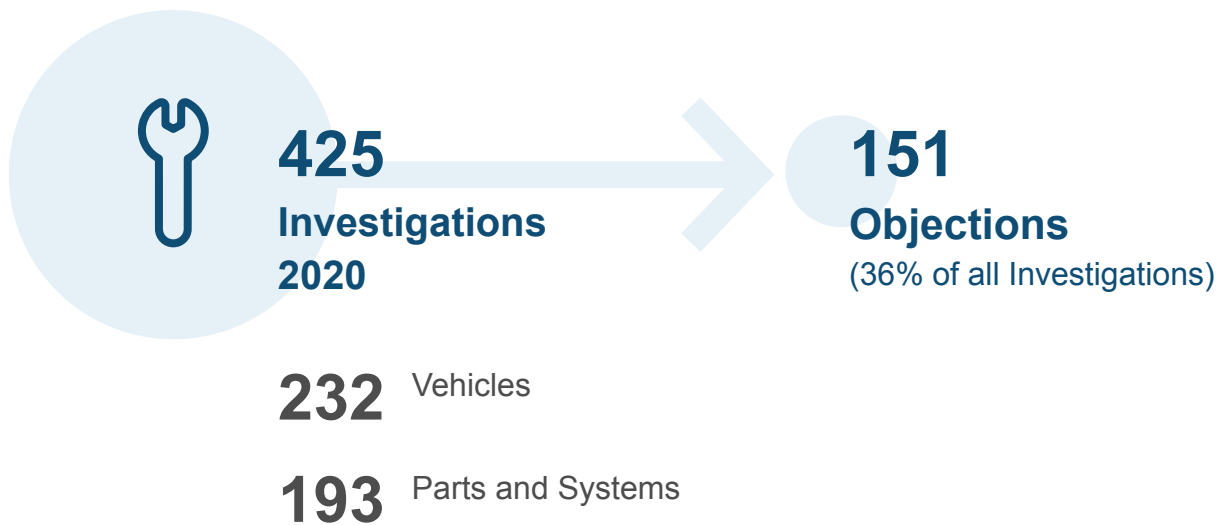


Source: KBA

Unfortunately, it's usually not that simple: market surveillance is often a time-consuming and demanding process that doesn't stop at a simple look under the engine bonnet.

KBA's product tests as part of market surveillance ensure that vehicles and vehicle components on German roads comply with the applicable regulations, so that these products do not become a safety or environmental problem.

In addition to emission tests on exhaust roller dynamometers and with mobile measuring equipment in real road traffic (PEMS), KBA also carries out targeted analyses of the engine and transmission control software. The tests are carried out on type-approved vehicles, components and systems, irrespective of which authority has granted the type approval (KBA or approval authorities abroad). The record for 2020 is as follows:



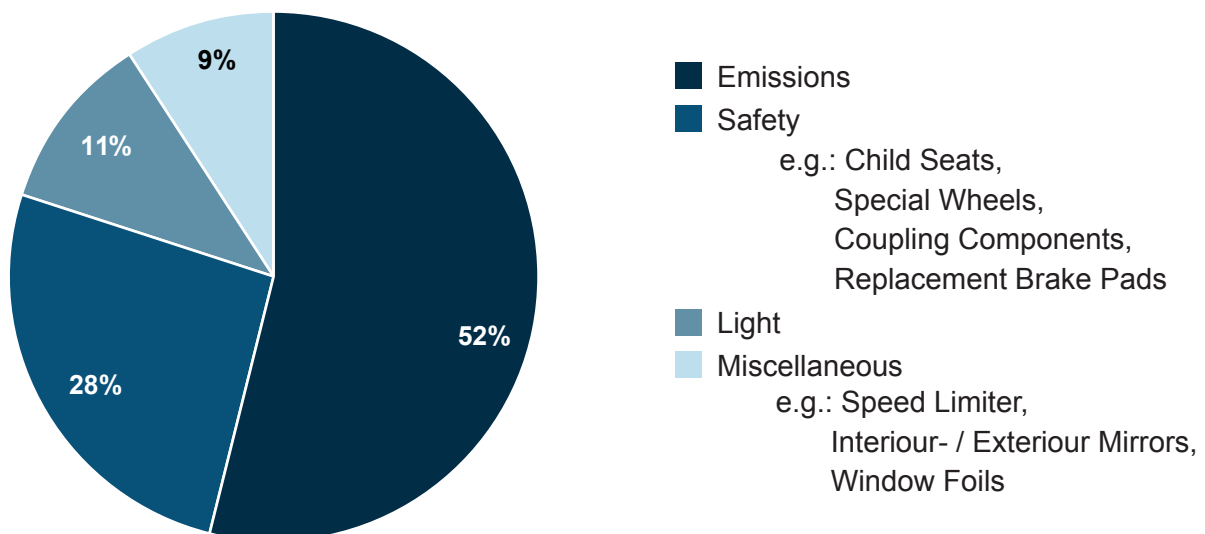
Source: KBA

The product tests ranged from e-scooters and passenger cars to heavy commercial vehicles and buses. In addition, numerous vehicle parts were tested, such as brake pads, child restraint systems (child seats), exhaust aftertreatment systems, lamps and special wheels. KBA approved voluntary software updates from the manufacturers following an intensive analysis of the software.

Details of product tests performed can be found at www.kba.de or by using this QR-Code:



Test Subjects of Market Surveillance 2020



Source: KBA



When is a product being tested?

Products can be tested at any given time. The selection of products to be tested is based on

- an annual test plan,
- the indications of authorities as well as associations, federations, citizens and
- findings from the type approval authority and KBA's own field inspections.

The focus of the investigations is currently on **exhaust gas measurements** on roller dynamometers and in real driving conditions (RDE) with portable emission measurement systems (PEMS). Both, the previously valid NEDC test cycle and the newer WLTC test cycle in combination with RDE (Real Driving Emissions) as well as modified driving cycles are tested.

If there is a suspicion that a vehicle has an illegal software condition with regard to exhaust gases, KBA examines the **engine and transmission control software**. Based on the analysis, all emission-relevant parameters can be analysed and the suspicion can be confirmed or eliminated.

Tests are also carried out on vehicle **noise emissions**.

In the future, tests on vehicles with new technologies, such as driver assistance systems, lane departure warning systems, etc., will expand the spectrum.

In the context of **special tests**, the vehicle is examined with regard to approval-relevant systems such as braking systems, steering systems, lighting equipment, etc.

Emission-Related Test Activities

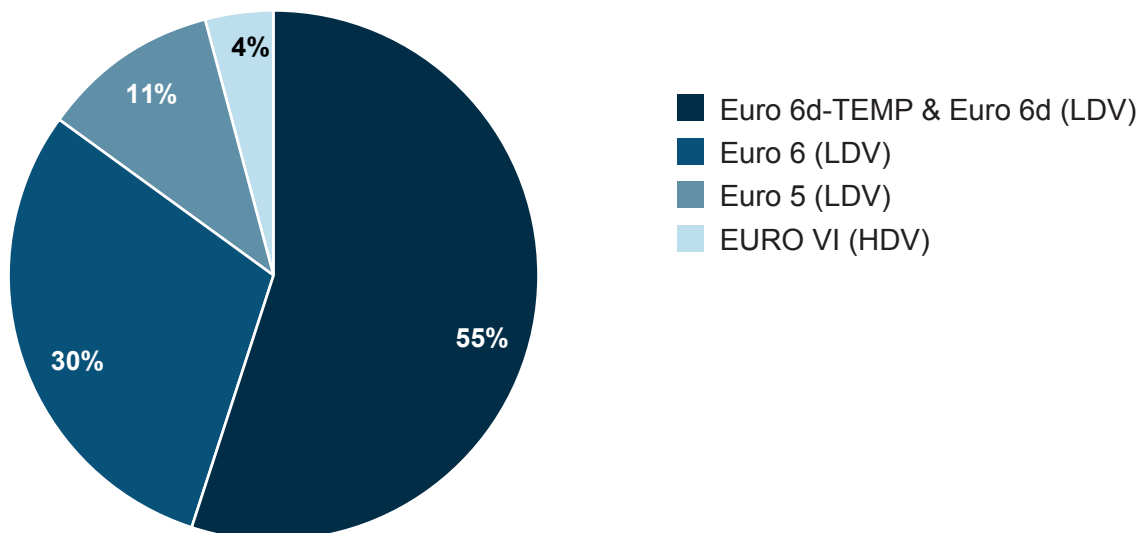
The emission measurements were carried out on exhaust roller dynamometers and in real-world driving (RDE) with portable emission measurement systems (PEMS).

The measurements showed a clear technological leap of Euro 6d-Temp and Euro 6d

vehicles, which consistently met the legal requirements for pollutant emissions in real-world driving.

The following emission groups were covered by tests on vehicles intended for road use in 2020:

Tested Emission Groups 2020



Source: KBA

Various measurement procedures are used to measure exhaust emissions. While the test procedures defined in the legislation consist of various driving cycles and profiles (NEDC, WLTC and RDE), they can also be individually adapted, in order to be less predictable by manipulative software. The scope of the investigation can change on a case-by-case basis, depending on the respective aim of the analysis.

These variations affect, for example, the ambient air temperature and are usually planned on the basis of an initial suspicion or conspicuous RDE results.

The following comparison of the NEDC and WLTC driving cycles serves to classify the two cycles and the cycle-free RDE measurement.

NEDC

New European Driving Cycle

Measurement: Roller Dynamometer in the Laboratory

Simulation in 2 Sections:

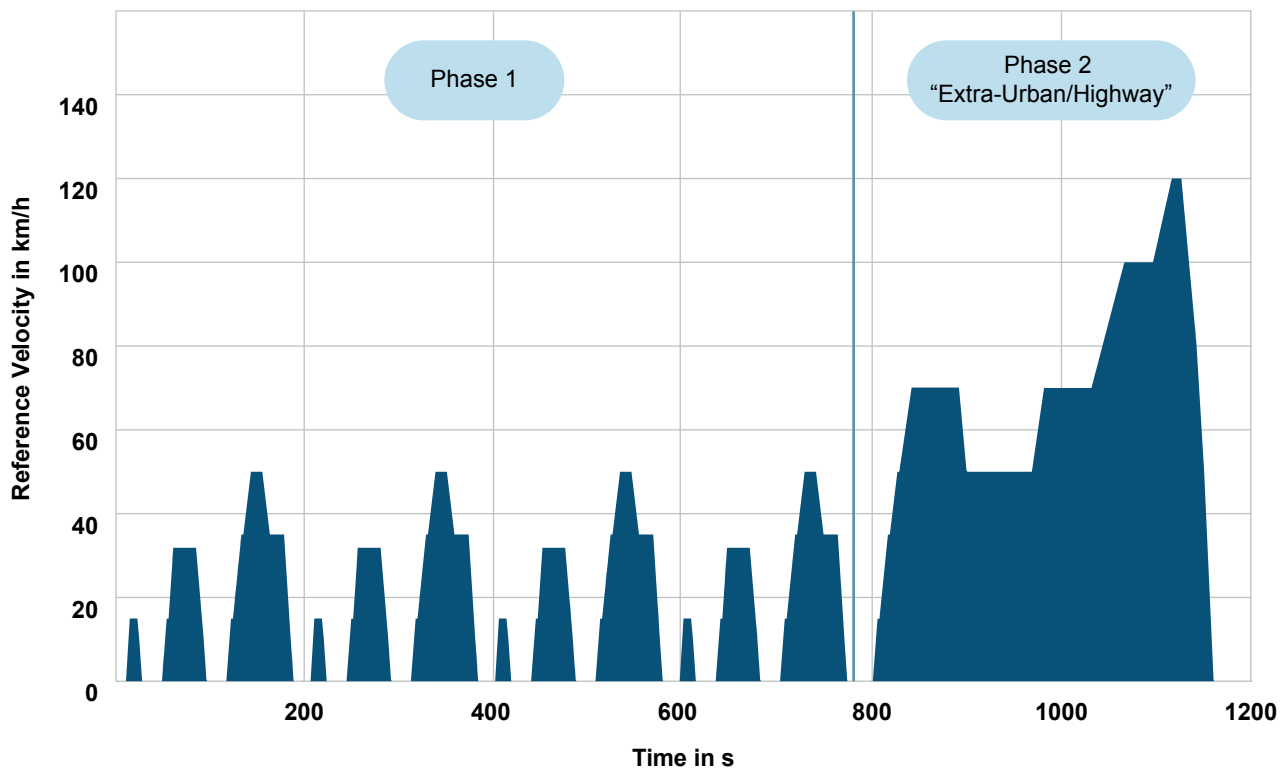
1) Urban Driving Cycle (UDC):

max. 50 km/h

2) Extra Urban Driving Cycle (EUDC):

Country-side drive with small highway component

Duration: approx. 20 min. (1180 sec.)



Source: KBA

WLTC

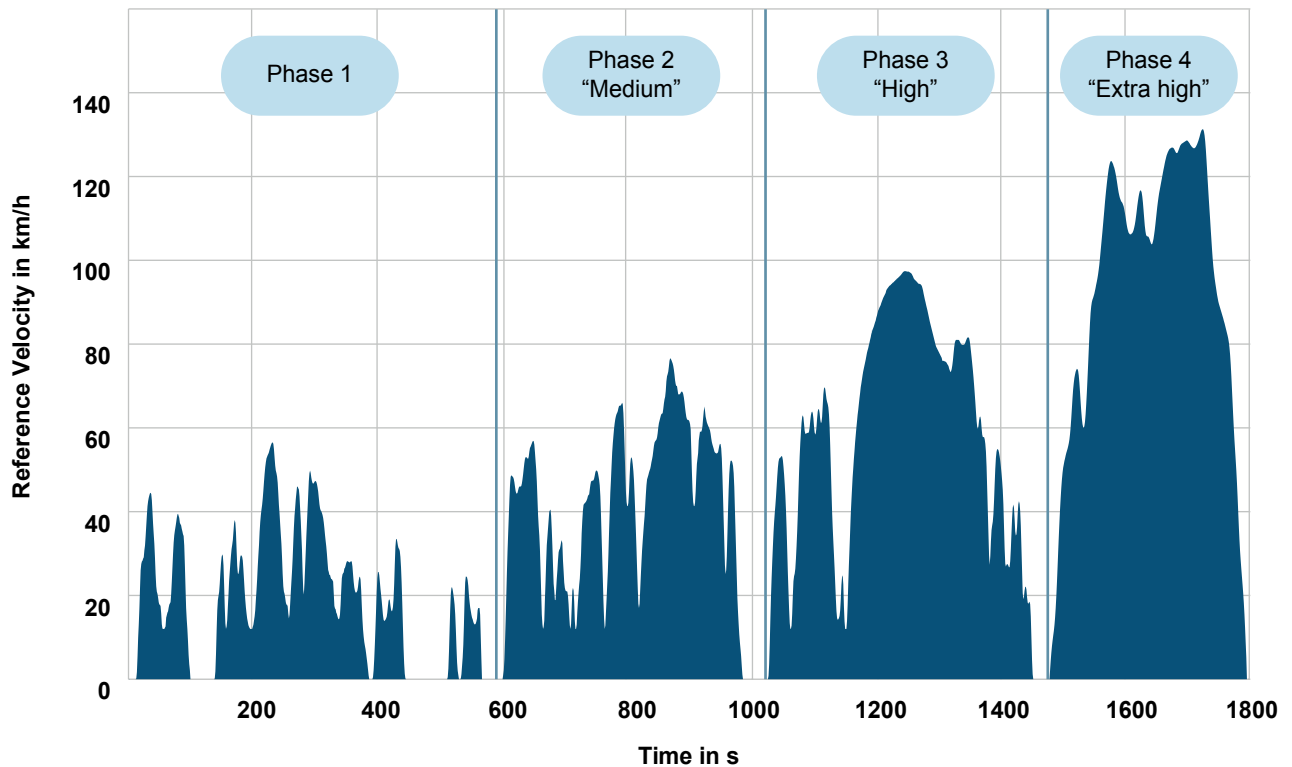
Worldwide Light-Duty Test Cycle

Measurement: Roller Dynamometer in the Laboratory

Simulation in 4 Sections:

- 1) Low = Urban (max. 56.5 km/h)
- 2) Medium = Extra-urban (max. 76.6 km/h)
- 3) High = Extra-urban (max. 97.4 km/h)
- 4) Extra High = Highway (max. 131.3 km/h)

Duration: approx. 25 min. (1477 sec.)



Source: KBA

RDE

Real Driving Emissions

Measurement: Real Road Driving

Test consists of:

34% Urban (up to 60 km/h)

33% Extra-urban (60 to 90 km/h)

33% Highway (91 to 145 km/h)

Duration: 90 to 120 min.



The portable emission measurement device is usually mounted on a support structure on the coupling component of the test vehicle, for example on the trailer hitch (Source: KBA).



Extensive adjustments are sometimes required to connect the vehicle's exhaust system to the PEMS. It is important that no exhaust gas can escape prior to the analysis (Source: KBA).

RDE measurements are carried out to check the exhaust gas behaviour of motor vehicles in real-world driving conditions. RDE measurements include an open driving profile that covers everyday driving dynamics. This considerably restricts the possibilities for emissions manipulation by means of so-called cycle detection and enables realistic testing of emissions in normal operation. The combination of the WLTC and RDE measurements results in the Worldwide Light-Duty Test Procedure (WLTP).

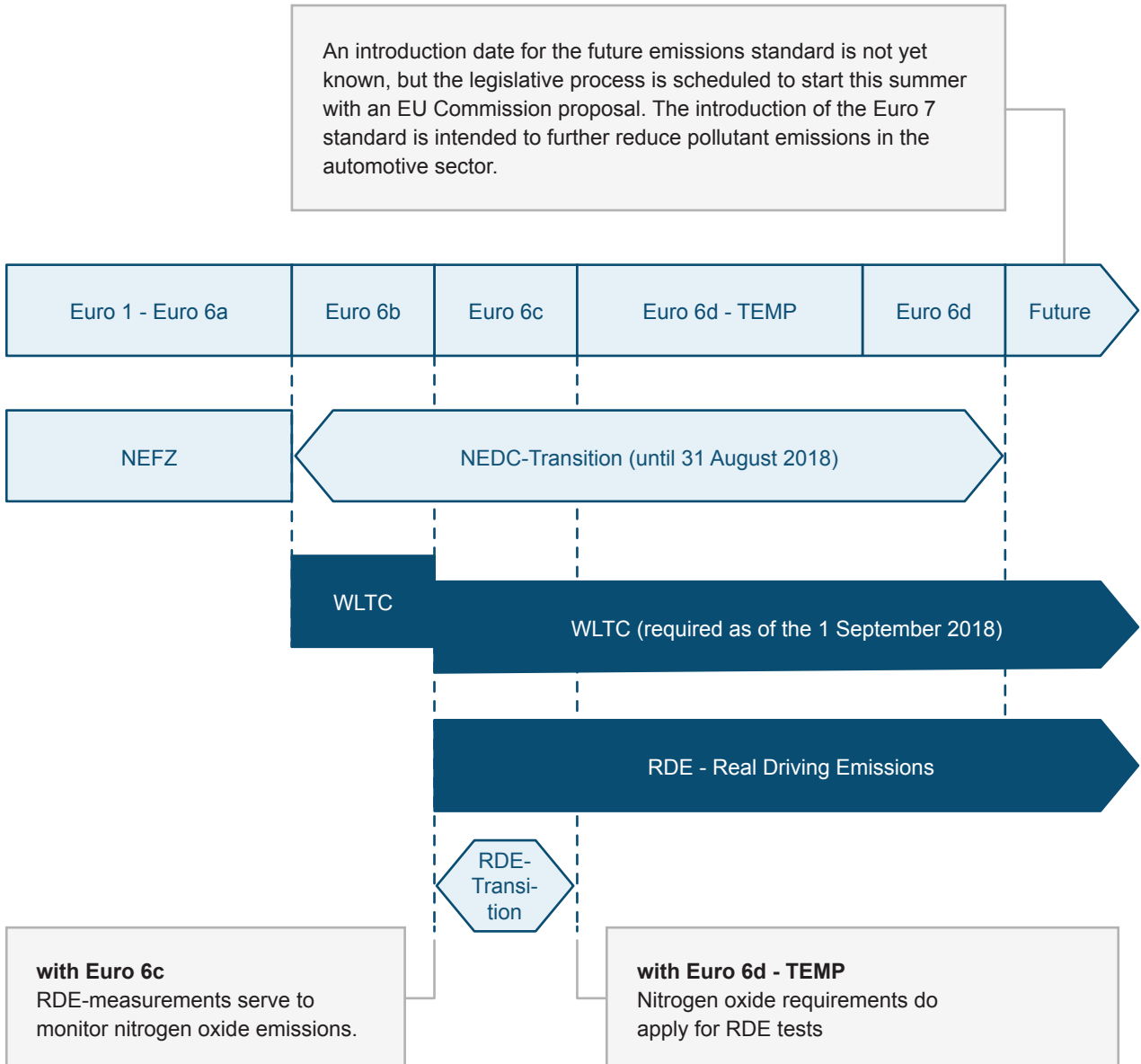
In today's regulations (Euro 6d), this measurement is integrated as an integral part of the type approval process. Since 1st of September, 2018, the measurement in real driving operation on the road has also been applied in the passenger car sector.

For exhaust gas measurements of real driving emissions (RDE), a portable emission measurement system (PEMS) is usually installed in the rear of the vehicle. It analyses the emissions coming out of the tailpipe, while the vehicle is still moving.

If abnormalities occur during a test, the manufacturer is given the opportunity to explain the technical causes. If no plausible technical explanation can be provided, further steps are taken, up to and including the ordering of a mandatory recall.

Emission Standards and Corresponding Driving Cycle Overview

The following diagram provides a schematic overview of the relationship between the exhaust emission standards and the corresponding driving cycles to be met (NEDC / WLTC).



Source: KBA

Information worth knowing about the Euro 5 and Euro 6 emission standards.

The two emission standards Euro 5 and Euro 6 set different emphases.

Euro 5 (Diesel Vehicles)

Particle mass (PM): 5.0 / 4.5 mg/km
Nitrogen oxide emissions: 180 mg/km

Primary objective: emissions of (soot) particles should be significantly reduced

In return, however, a higher limit value for nitrogen oxide emissions is permitted. The inadequacies of exhaust gas recirculation at lower temperatures were initially accepted.

Euro 6 (Diesel Vehicles)

Particle mass (PM): 4.5 mg/km
Nitrogen oxide emissions: 80 mg/km

Primary objective: reduction of nitrogen oxide emissions

Why has the European Commission not already imposed stricter limits on nitrogen oxide (NOx) emissions for Euro 5 diesel vehicles?

Euro 5 (Diesel Vehicles)

In its draft of Regulation (EU) 715/2007, the European Commission deliberately decided against such a specification at this time. Stricter limits would have made vehicles more expensive because an exhaust gas treatment system (e.g. SCR) would have been necessary. As a result, fewer Euro 5 vehicles would have been sold and the positive effects of the Euro 5 standard for the environment would not have been able to unfold. The higher limits meant that Euro 5 vehicles remained affordable and were still able to make a significant contribution to reducing air pollution in the particulate range.

	Vehicle Costs	Vehicle Purchaseability	Reduction of Air Pollution
Higher Limit Value NOx	▼	▲	▲
Lower Limit Value NOx	▲	▼	▼

Euro 6 (Diesel Vehicles)

Before its introduction, the European Commission was of the opinion that the development of engine technology discernible at the time provided a wider range of options for complying with the nitrogen oxide limits than was the case with Euro 5. Nevertheless, the European Commission came to the conclusion that the use of specific technologies such as "AdBlue" would probably not be necessary for all vehicles and therefore did not need to be made mandatory.

Planned Product Tests in Market Surveillance

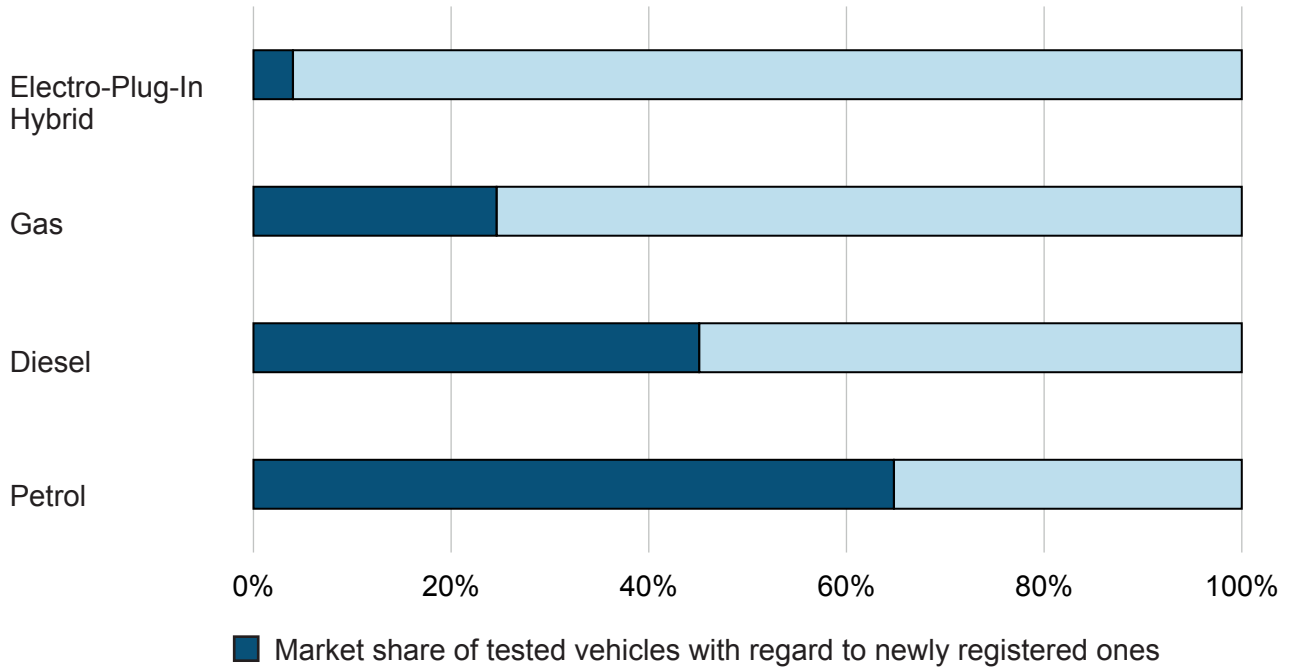
As a result of Regulation (EU) 2018/858, which has been in force since 1 September 2020, every EU member state is obliged to carry out a minimum number of inspections per year. This minimum number is calculated on the basis of the number of new registrations in the previous year: one test must be carried out for every 40,000 newly registered vehicles.

KBA therefore has to perform a workload of 110 tests in the period from September 2020 to August 2021. Examinations of exhaust emissions, tyre rolling noise, eCall, seat belts, steering systems and braking systems are counted as tests, which may change annually depending on risk assessment and priorities.

In its coordinating role, the European Commission proposes to the member states a selection of vehicle types to be tested with regard to various requirements. This prevents market surveillance authorities from testing the same vehicle type. As a result, KBA has to carry out 110 tests on 40 vehicle types. The results of these tests can be transferred to technically comparable vehicles across all models. With its tests, KBA thus covered a total of 53 % of newly registered passenger cars in Germany, based on the year 2019.

The following figure shows how the market share is divided among the different drive types.

Market Share of Tested Vehicles with Regard to Newly Registered Passenger Cars, Based on the Year 2019



Source: KBA

The supplementary planning also provides for tests on additional vehicle types and allows even greater coverage of the vehicle market. However, these additional tests are linked to short-term criteria and are therefore not included in the planning presentation.

In addition, a test campaign on noise emissions from passenger cars and motorcycles will be carried out in the summer of 2021 on the basis of a decree issued by the Federal Ministry for Digital and Transport.

New Infrastructure Strengthens Market Surveillance

Construction of the Harrislee Laboratory (HaL) at KBA

Construction of the KBA-owned laboratory began in October 2019. The new building in the municipality of Harrislee (Schleswig-Holstein) significantly expands the 6,000 m² site with office building and workshop that KBA moved into in December 2017.

The modern functional building offers space for complex measurement technology on a gross floor area of around 1,400 m². Since the completion of the outer shell in September 2020, the special infrastructure of the emissions laboratory has been in place: at the heart of this are two new roller dynamometers for exhaust gas measurements, which are used not only for pure vehicle testing but also for calibrating KBA's own mobile exhaust gas measurement systems (PEMS). This additional validation ensures that the legal requirements for measurement accuracy are met. In addition, the Harrislee Laboratory is equipped with state-of-the-art measurement technology, the required air-conditioning and IT-systems.

Initial measurements were taken in April 2021, as part of the commissioning process. The final takeover will take place in May 2021.

More about the Harrislee Laboratory (HaL) can be found on www.kba.de or by using this QR-Code:



Source: KBA



Design of a climatic exhaust roller test bench



Standardized driving cycles are performed under reproducible boundary conditions (air temperature, driving profile, loads)



Construction of a sealed housing for evaporative determination (SHED)



Insulation of the climatic test bench



Construction of the laboratory in Harrislee, Schleswig-Holstein

Source: KBA

KBA Test Center in Leck (TeCeL)

Since 2 January 2020, KBA's test infrastructure has included its own test site with an approximately 3.0 km test track that previously served as a military runway for aircraft in the Schleswig-Holstein municipality of Leck.

On the track, KBA carries out tests, such as roll-out tests, in order to check the vehicle-specific driving resistances. In addition, the legally prescribed NEDC and WLTC driving cycles are simulated here using mobile emission measurement systems (PEMS). In this way, the emission behavior of the vehicles can be analysed in comparison to the measurement on the roller dynamometer.

In the future, the Test Center Leck (TeCeL) will be expanded continuously and upgraded for more extensive tests. This also includes the necessary technical equipment to enable tests on driving safety systems and on highly automated and autonomous vehicles, which KBA carries out on the basis of international and national regulations.



Aerial view of the test track in Leck
(Source: KBA as of May 2020)



Noise emission test (Source: KBA as of April 2021)

/ Recalls and Public Information

Recalls



**approx.
3 Mio.**

+ 9% *

recalled vehicles

* compared to 2019 (approx. 2.7 Mio.)



**approx.
129,000**

+ 127% *

decommissionings

* compared to 2019 (approx. 57,000)

Source: KBA

The legislator requires manufacturers of vehicles and vehicle parts to inform KBA, if there are indications that their products pose a risk to vehicle occupants or other road users. KBA also receives information about defective products from consumers, authorities, insurance companies and the media.

Once KBA has determined the reported hazard in the course of its investigations, the information is exchanged electronically between the EU member states and thus made available to the competent authorities abroad as well as affected vehicle owners and the general public.

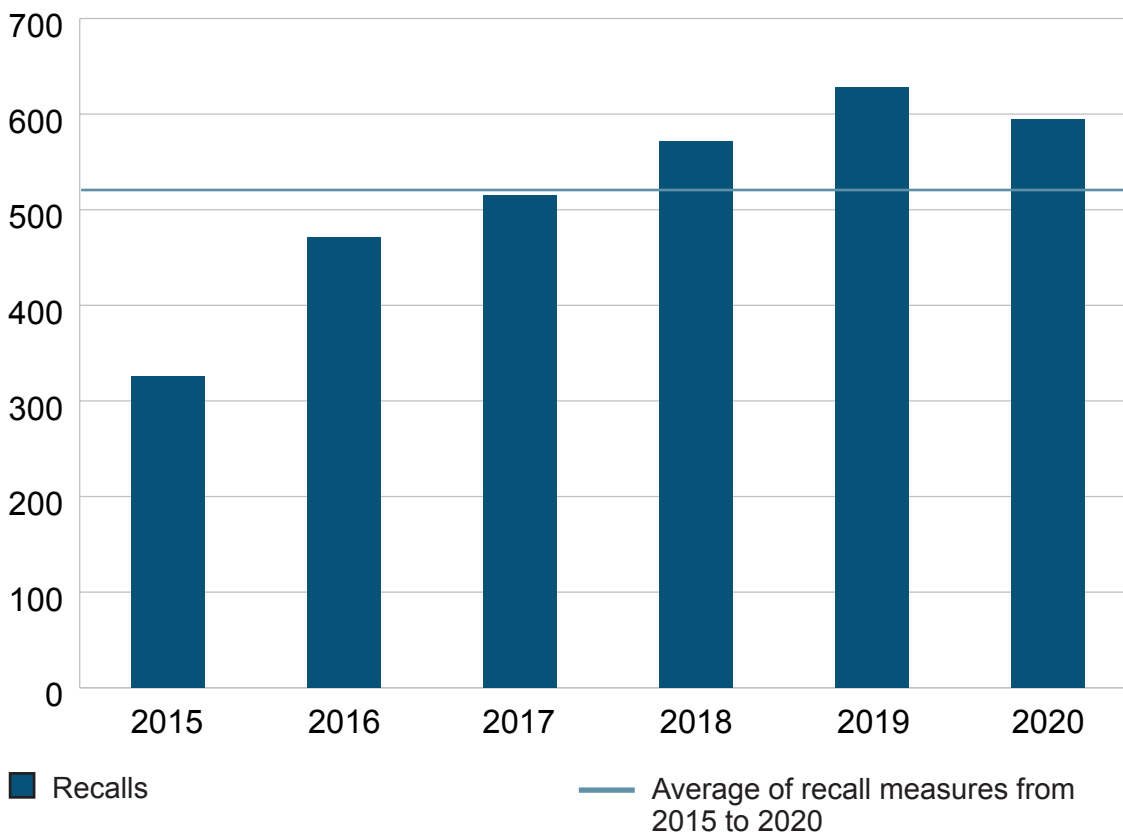
Is your vehicle subject to an official recall? You can look it up on www.kba.de or check it by using this QR-Code:



The number of recalls initiated by KBA, totaling 595 in 2020, was above the long-term average, as was the case in 2018 and 2019. The increase in recalls is a reaction to KBA's increased market presence.

KBA takes these measures, if it assesses the defect as critical with regard to the existing environmental and safety risk on the basis of defect reports from those responsible for the product or its own investigation results.

Recalls 2015 to 2020



Source: KBA

If a product displays an actual issue, the manufacturer recalls the affected product series. Product defects can lead to different risks. The recall measures therefore vary in the way they are carried out. If there is a serious risk, the recall is usually the most

effective measure in order to protect vehicle owners, uninvolved road users and the general public. To ensure that serious risks are completely eliminated, product responsables can use the owner records from KBA's Central Vehicle Register (ZFZR) for such recalls.



What is a “serious risk”?

The term “serious risk” is defined by § 2 No. 22 and 10 Product Safety Act (ProdSG):

- A **risk** is the combination of the probability of occurrence of a hazard and the severity of the possible damage.
- **Serious** is any risk that requires rapid intervention by the market surveillance authorities, even if the risk has no immediate effect.

The decision as to whether a product constitutes a serious risk shall be based on an appropriate risk assessment, taking into account the nature of the hazard and the likelihood of its occurrence.

Not every possible risk is a serious risk. The following criteria can guide you in determining whether a serious risk is likely:

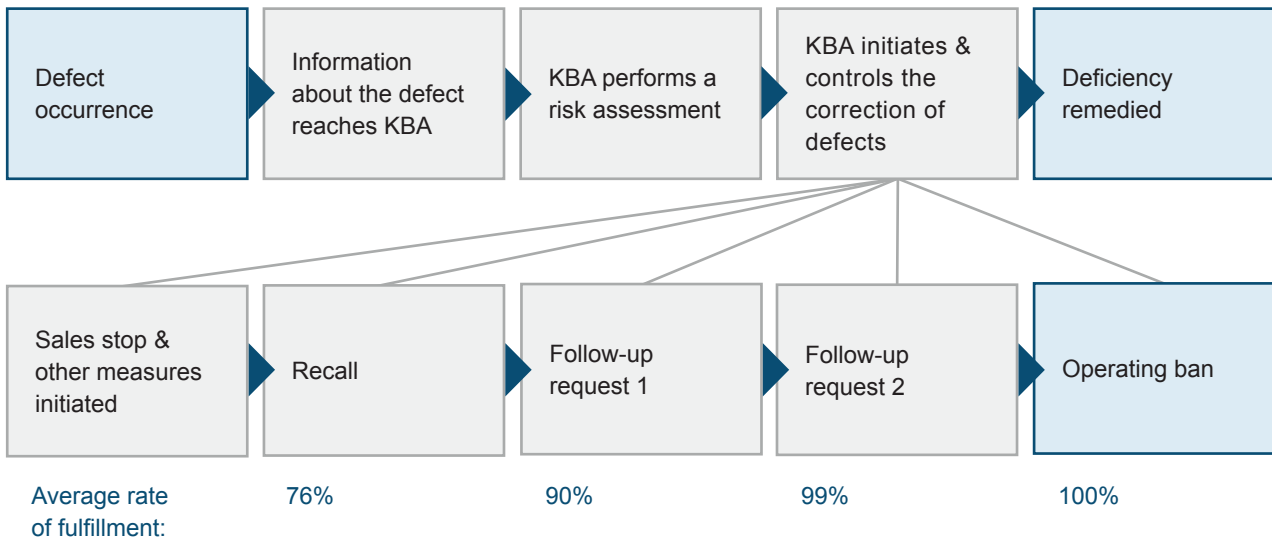
- safety and health requirements of applicable legal regulations are not complied with,
- the safety and health of persons are endangered during intended use or foreseeable misuse,
- the hazard is sudden and unforeseeable or
- the hazard is unavoidable for persons.

Example: A risk is serious, if a vehicle can not be steered anymore. This is the case, if the steering system is disfunctional due to a break down of any of the respective components.

In addition to those responsible for the product, owners also have a duty: if their vehicle is the subject of a recall, they must have the defect remedied. KBA monitors the recall process. If it finds that vehicle owners do not participate in the recall campaign despite being requested to do so,

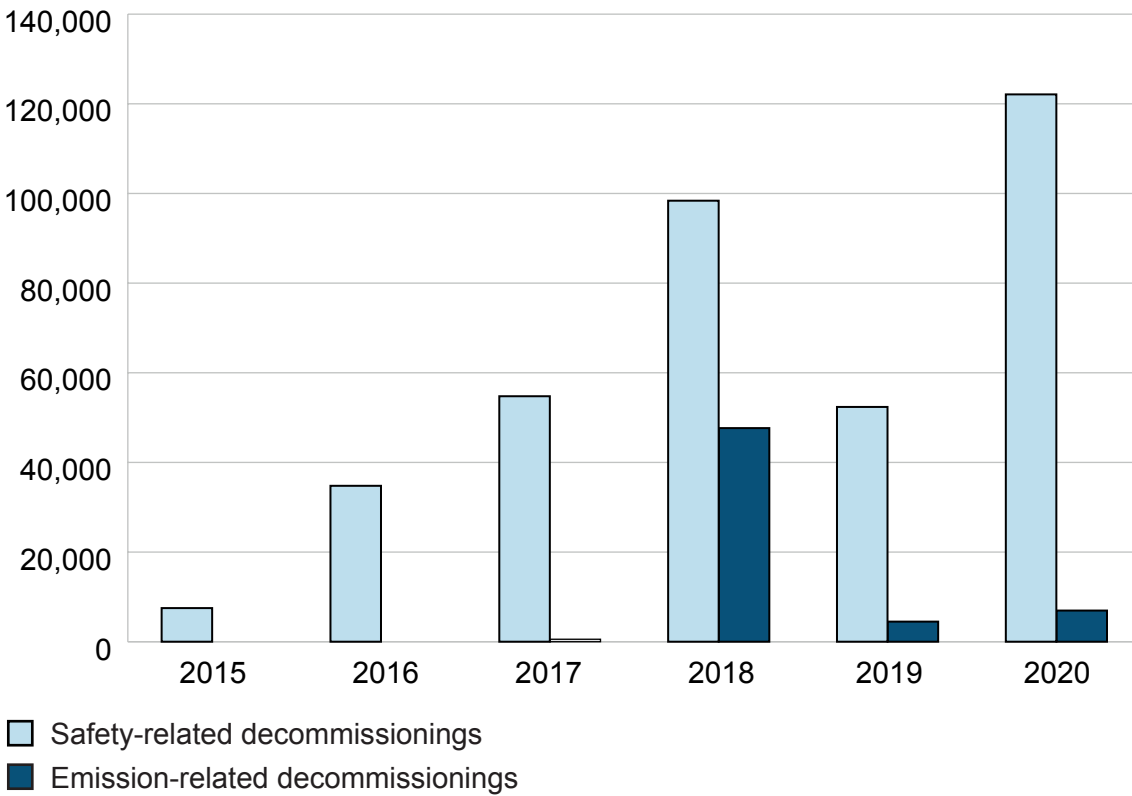
they will be asked again to have the defect rectified. If owners do not comply with the recall even after being requested to do so several times, the locally responsible registration authority can, as a result of the notification from KBA, issue an operating ban and withdraw the vehicle from circulation.

Recall Process



Source: KBA

Initiated Decommissioning 2015 to 2020



Source: KBA

Public Information

One of KBA's key concerns is transparency for the public. For this reason, KBA set up a citizen information service in November 2018 to answer questions on all matters relating to the market surveillance of motor vehicles in a bundled manner, in particular on safety-relevant and emission-related recalls, on voluntary field actions, but also on any other inquiries. KBA's information service will be happy to answer these questions.

A shift to safety-relevant recalls can be identified in the information provided. Citizens are happy to take advantage of this offer in order to obtain certainty of action in their recall procedure, information about their vehicle or further information.



Call KBA in case you are having any questions!

+49 461 316-1099

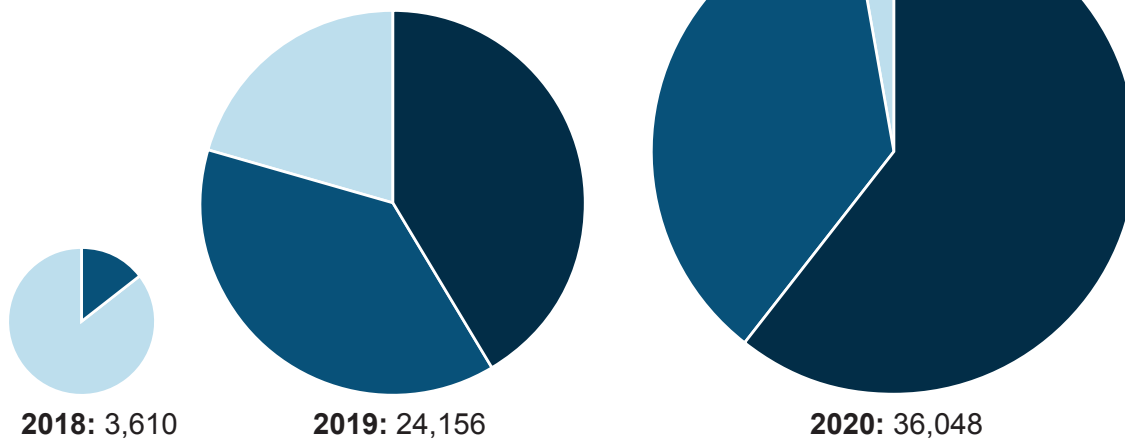
Monday – Thursday
08:00 a.m. – 04:00 p.m.

Friday
08:00 a.m. – 03:00 p.m.

Vehicle deficiencies can be notified online:



Provided Information to Public Requests



Size of the diagrams corresponds to the number of citizen requests

- Information on safety-related recall campaigns
- Information on emission-related campaigns
- Other information (manufacturer retrofit programs, general questions about the course of recall campaigns, et cetera)

Source: KBA

/ Sanctions

Defects in vehicles or vehicle accessories can be dangerous for people. Anyone who disregards the legal framework conditions for the production and trade of vehicles and components must expect to be fined by KBA.

In addition KBA checks whether certain imported goods meet the minimum European standards and may be imported into the EU. KBA examines products that have attracted attention during customs import inspections and decides on their import.



283

Fining Procedures

Against manufacturers and distributors, who have sold unapproved vehicles and their parts



1,085

Import Control Checks

When vehicles and parts are imported, KBA checks whether they pose serious risks to health and safety or if they violate European law.

Source: KBA

Sanction Proceedings

Trade in vehicles and vehicle parts is subject to legal rules and restrictions. By continuously monitoring market activity and sanctioning violations with fines, KBA ensures that all market players comply with the legal requirements.

With success: distributors from various sectors confirmed to KBA that the sanction procedures of KBA were clearly perceived in the industry and that existing trade restrictions were observed much more strongly as a result. Both distributors and manufacturers expressed their understanding for the trade restrictions in the interest of road safety and welcomed consistent action against violations.

By doing so, KBA strengthens the legal trade and makes a decisive contribution to traffic safety and fair competition on the German vehicle market.

Sanctions are therefore not an end in themselves: both the general public and the trade ultimately benefit from them.

“The intensive market controls by KBA have led to a massive reduction in the supply of unapproved vehicle parts in Germany and at the same time have sustainably promoted the awareness of dealers with regard to the regulations to be complied with. Market surveillance is having an effect. We will continue to carry out checks on site, in online portals and in dialog with the trade. In this way, KBA is taking action against the impairment of road safety caused by unauthorized vehicle parts and supports fair competition in the trade.”
KBA-President Richard Damm, 2021

In 2020, fine proceedings were primarily directed against product managers who sold unapproved vehicles and vehicle parts (such as lights or frontal protection systems).

In addition, KBA also initiated fine proceedings where manufacturers or distributors violated provisions of the Product Safety Act (for example, in the case of violations in recall proceedings).



How can I tell, if a product is approved?

Type-approved vehicle parts can be identified by the type-approval mark affixed to the product. Approval marks document that the devices marked in this way demonstrably comply with the minimum technical requirements.

Approval marks used by the Kraftfahrt-Bundesamt always include a **three-period wave line**, the letter sequence “**KBA**” or the designations **e1** or **E1**. Approval marks are most frequently found on vehicle parts. Each approval mark contains the approval number and is assigned only once.



More examples are available on www.kba.de or by using this QR-code:



Import Control Checks

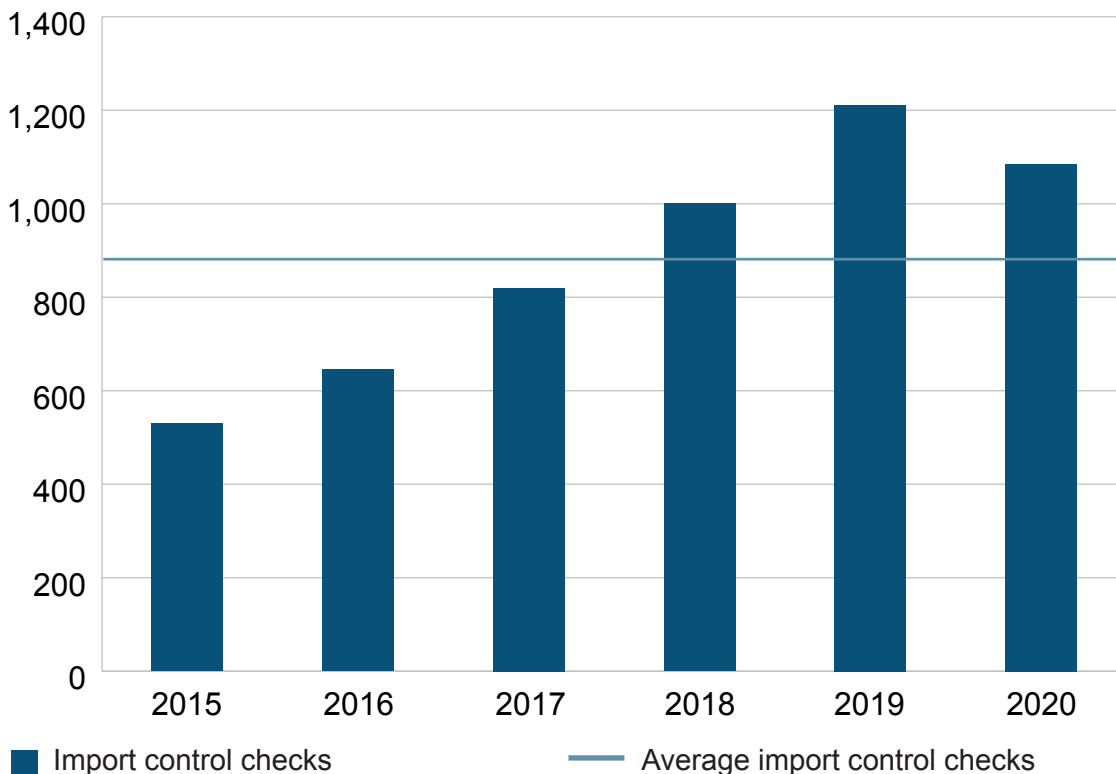
In the interest of safety, various European regulations define minimum standards for products offered on the European market. If products do not meet these standards, they may not be imported into the European Union.

For this purpose, customs authorities monitor the import of products into the European market. In Germany, this applies in particular to airports and seaports.

If there is a suspicion that the imported goods (vehicles or components) do not comply with European regulations or even pose a serious risk to health and safety, customs authorities report this to KBA for inspection.

The number of import control checks reviewed by KBA is continuously above average: In 2020, KBA conducted a total of 1,085 such reviews. In around 50 % of these cases, KBA rejected the import, i.e. the goods were not allowed to be imported into the European market.

Import Control Checks 2015 to 2020



Source: KBA

/What else was Important?

European Court of Justice Ruling on Defeat Devices



Photo: European Court of Justice

The evaluation of exhaust emission strategies and testing for defeat devices based on measurements and software analyses has become one of the main tasks of market surveillance at KBA. On 17 December 2020, the European Court of Justice (ECJ) ruled for the first time on a case concerning the legal assessment of such devices in motor vehicles.

The decision relates to French criminal proceedings in which the decisive factor is whether the technology installed in the

specific case constitutes a prohibited defeat device. Precisely, this involves the installation of a switching logic with which the vehicle recognises a test cycle in the laboratory test and adjusts the emissions on the test bench accordingly. In real traffic, the nitrogen oxide values were significantly higher. The manufacturer argued that such devices were permissible because, among other things, they protected the engine. The ECJ did not follow this argument and declared such devices not permissible.

The decision thus relates to the facts of a systematic detection of test situations, which have been known since 2015. As early as 2015, KBA legally determined the inadmissibility of such a defeat device at VW, declared it in the specific case and thus made it the subject of further corresponding decisions. In these cases, KBA ordered binding recalls for the manufacturers concerned. In Germany, this affected around 3 million vehicles. Information on mandatory recalls is available on the KBA website.

KBA has always applied a very narrow interpretation as a benchmark for the exceptional permissibility of defeat devices and has acted in accordance with the requirements of Article 5 (2) on defeat devices in European Regulation (EC) 715/2007. The basis for this was and is always the examination of the individual case, which is also carried out by KBA's own investigations and measurements. KBA sees its legal opinion confirmed by the decision of the ECJ.

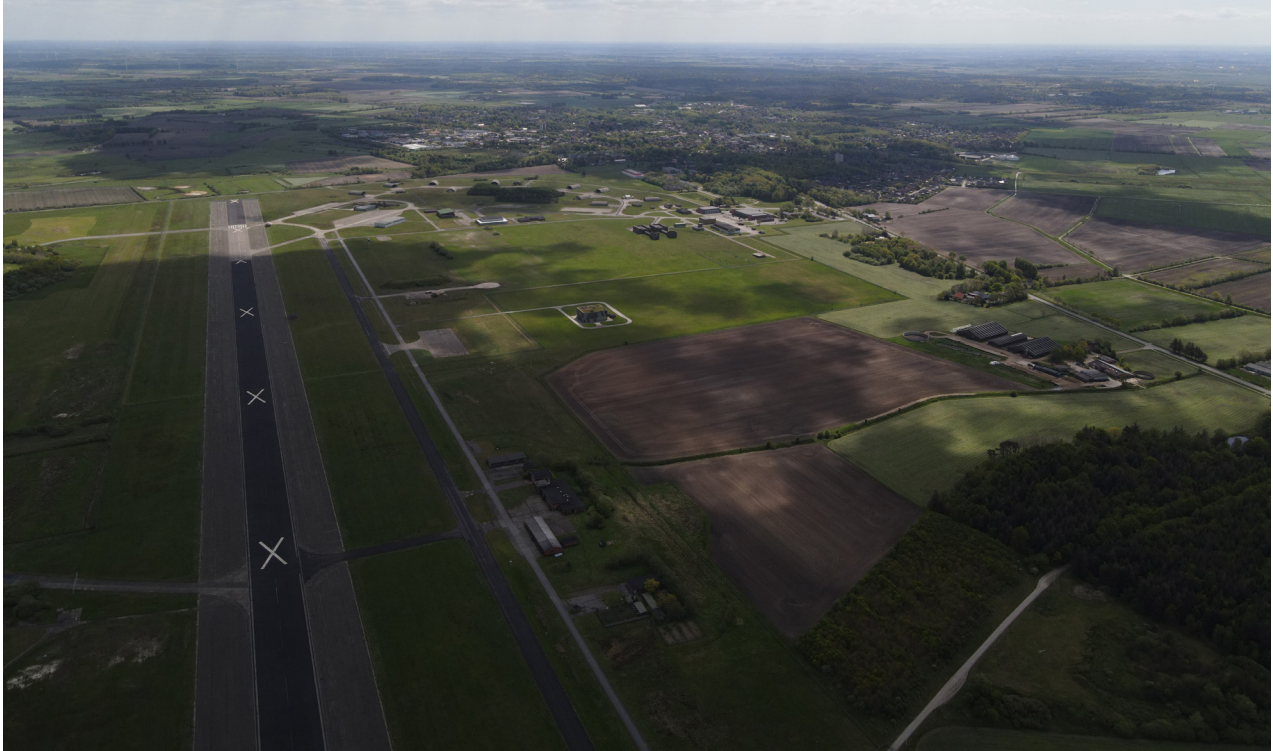
In its decision of 17 December 2020, the ECJ does not address the question of the admissibility of temperature-dependent defeat devices. This issue will be addressed in a separate ongoing ECJ case, on which a decision is expected in the second half of 2021.

In this ruling, the ECJ states that, in principle, all defeat devices that protect the engine from sudden and extraordinary damage are permissible. Temperature-dependent devices can also prevent sudden and extraordinary engine damage by preventing excessive deposits in the engine (sooting, varnishing) or dilution of the engine oil with fuel. This is also shown by a recent scientific study by the Technical Universities of Karlsruhe, Darmstadt and Magdeburg.

There are also other types of damage, such as those caused by icing in the engine intake system. Depending on the driving and ambient conditions, such damage can occur unpredictably quickly and suddenly and cannot be avoided by a suitable service interval. The thermodynamic complexity of such effects is high and the interaction with driving modes and driving conditions does not allow a reliable, generalised prediction of the effects of such damage.

In each individual case, KBA therefore checks whether such a case exists or whether the limits of the temperature-dependent device have not been selected too restrictively and the engine protection device has become an "engine easing device" that merely serves to extend service intervals or reduce regular inspections. Such thermal windows are generally not permitted and have not been accepted by KBA to date.

5G-TELK-NF: Joint Research Project Tests Applications of Automated and Connected Driving with 5G Technology



Source: KBA

KBA is striving for close cooperation with universities that have specialized in the areas of (partially) autonomous driving and cyber security of vehicle systems. However, these collaborations do not have to be limited to these specific application areas of the universities, as the automation and networking of systems is finding its way into a wide variety of sectors. For example, transportation, especially in the area of passenger transport, both on the road and in aviation, is a conceivable application of these new automated technologies. In order to test various applications of automated and connected driving,

KBA is working with 17 project partners in the 5G-TELK-NF project to expand a 5G campus network at the Test Center Leck (TeCeL) and at the GreenTEC Campus in the municipality of Enge-Sande. At TeCeL, various communication options (Car2X, Car2Infrastructure, Car2Car) between vehicles and the infrastructure in the traffic area are to be investigated.

With the help of 5G-TELK-NF, a wide range of research projects for the technical implementation of autonomous driving systems will be possible in the future. In addition, the project will enable KBA to define and

implement new, extended test procedures, especially for tests of approval-relevant functions and also penetration tests on its own test facilities.

Since this project requires a high data transmission rate, a high-performance 5G network will be set up at the project sites and in the local communities of Tinningstedt, Enge-Sande, Leck and Klixbüll.

KBA and BSI Strengthen Their Cooperation in Vehicle Cyber Security



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Digital technologies have long since conquered the vehicle market. In the future, driving will become increasingly networked and “smarter”. This makes effective solutions for IT-security all the more important: Anyone buying a new car today expects to receive a secure vehicle. Modern cars are

high-performance computers on the move, which depend to a considerable extent on digital technology and will also be controlled autonomously by it in the future. To protect vehicles from possible cyber attacks, security precautions and prevention strategies are become increasingly important.

The digital transformation on four wheels is therefore also presenting KBA with new tasks: Particularly with regard to market surveillance and type approval, cyber security is proving to be another important component in testing the functionality and safety of vehicles and components. One of the specific tasks is to identify vulnerabilities in IT systems by means of so-called penetration tests (“pentests” in short). This involves attempting to penetrate the relevant system via possible gateways, such as the (wireless) communication interfaces of a vehicle. For this purpose, KBA uses test scenarios that can also be carried out in real world tests at the test site in Leck (Schleswig-Holstein).

The primary goal is to ensure that potential cyber attacks have no impact on driving safety. For this reason, KBA and the Federal Office for Information Security (BSI) concluded an administrative agreement on 12 October 2020, laying the foundation for effective, interdepartmental cooperation between the two authorities. BSI is the responsible cyber security authority and is responsible, among other things, for protecting government networks and the

federal administration from cyber attacks. The collaboration will advance automated and connected driving in Germany with the necessary care and prudence – for greater road safety and environmental protection.

In this context, UN Regulation No. 155 came into force at the beginning of this year. UN Regulation No. 155 has made it possible to issue specific regulations at the international level for compliance with cyber security. Vehicle manufacturers will be able to have their products approved with regard to cyber security and the Cyber Security Management System (CSMS). Within the scope of this approval, it is verified, among other things, whether the necessary processes for risk assessment as well as the corresponding response of the manufacturer to cyber attacks or threats comply with the requirements. Testing authorities such as KBA have, through UN Regulation No. 155, specific “testing tools” with which they can decide on admissibility. The regulations were developed under the chairmanship of the president of KBA, Richard Damm, by an international working group with a global focus.

/ Outlook to 2021

With application of Regulation (EU) 2018/858, KBA has been able to expand its scope for action. Since 1 September 2020, KBA has been conducting new supplementary tests on vehicle safety and environmental protection in accordance with the Europe-wide regulation and comparing the results with the other member states via the coordinating European Commission. Furthermore, KBA will continue to carry out its own additional test projects independently of external test schemes in order to follow up on current events and information from the public and non-governmental organizations. With regard to the European vehicle market, KBA carries out the majority of official product tests.

The emissions laboratory in Harrislee will be used for testing projects from May 2021. The test track in Leck will be used to test and assess more innovative technologies such as automated and connected driving. In this context, framework conditions for the evaluation of these technologies will be developed and applied.

KBA is aware of the public's increasing need for information on current and individual safety and environmental issues in motor vehicle traffic and is constantly developing its systems to adapt them to the needs of the public. The recall database is a key element here: in addition to the telephone information service, citizens can obtain detailed information there on the recall specifications. The possibilities offered by the recall database will therefore be further expanded in the coming years. In addition, the information on the KBA website will be continuously increased.

In 2021, KBA's core tasks will again include protecting the public from unapproved products. The entry into force of the EU Vehicle Approval and Market Surveillance Regulation will also expand the scope for action in the area of sanctions.

KBA will continue to further develop and optimize the possibilities and procedures in all three pillars of market surveillance so that KBA can continue to effectively stand up for safety, the environment and fair competition.

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