

# Questionnaire to Member States' authorities concerning emission measurements in automotive sector: response by the Netherlands

The government of the Netherlands has received a questionnaire from the *Committee of Inquiry into Emission Measurements in the Automotive Sector* [EMIS] of the European Parliament. This committee aims to investigate in detail alleged contraventions and maladministration in relation to emission measurements in the automotive sector.

The following questions have been answered by the responsible Netherlands Ministry of Infrastructure and the Environment and the Dutch type-approval authority (RDW).

RDW is the Netherlands Vehicle Authority in the mobility chain. RDW is a non-departmental public body (NDPB). It performs its tasks on behalf of the Ministry of Infrastructure and the Environment, as one of the implementing bodies resorting under ministerial responsibility. Tasks include the area of the licensing of vehicles and vehicle parts, supervision and enforcement, registration, information provision and issuing documents. In addition, RDW participates in various consultation structures in which international regulations are prepared, on behalf of and in close cooperation with the ministry. RDW also closely cooperates with sister organizations in the field of European legislation.

## **Part 1 Questions to Ministries**

### **1. What instruments, measures and procedures have been put in place in order to correctly monitor, enforce and implement the requirements under Regulation (EC) No 715/2007 and Directive 2007/46/EC, in particular provisions in national law addressing the use of defeat mechanisms and procedures for verification of possible software adaptations?**

Directive 2007/46/EC is implemented in the “Wegenverkeerswet” and particularly in the “Regeling voertuigen”, concerning the rules of type-approval of vehicles. Violation of the rules can be sanctioned by administrative penalties or criminal sanctions.

Regulation (EC) No 715/2007 – being a regulation - is not implemented itself in national law, but according to article 13 of the Regulation national law must provide the provisions on penalties applicable for infringement by manufacturers of the provisions of the Regulation. Therefore the use of defeat mechanisms (Article 5(2) of the Regulation) is forbidden according to the “Besluit typekeuring motorrijtuigen luchtverontreiniging”, and sanctioned by administrative penalties or criminal sanctions.

### **2. Which provisions are available in national law for implementing the measures addressing the use of defeat mechanisms? Under EU and national law, including relevant case-law, what do you understand to be the scope of the "protecting the engine" and "safety" exemptions on the ban on defeat devices as described under Art. 5(2a) of the Regulation 715/2007/EC.**

See also the answer to question 1. There are no provisions in national law addressing the use of forbidden defeat mechanisms, except the aforementioned provisions on penalties. And there is no relevant case-law also, on the scope of the “protecting the engine” and “safety” exemptions under Art. 5(2a) of the Regulation. Since the Regulation can be enforced directly without implementation in national legislation, no specific national interpretations have previously been made. The Netherlands has therefore requested the European Commission to stimulate discussion and clarity on this topic on European level. Moreover, during the Dutch EU presidency the transport ministers requested the

European Commission at the Council of Transport on June 7<sup>th</sup> 2016 to clarify the interpretation of the current EU legislation with regards to the derogation of prohibited defeat devices.

**3. Which instruments do the European Commission and the relevant Member State authorities have at their disposal under EU and national law to monitor and verify emission information of vehicles?**

Emission information of vehicles can be monitored and verified by measuring the exhaust gas emissions during the type approval test cycle (NEDC) as well as under real world test conditions. Measurements can be done by competent research centers, such as The European Commission's science and knowledge service, Joint Research Center, or in the Netherlands by the research center TNO. The results of these tests can be forwarded to the national type approval authorities of the member state that submitted the type approval for the car that has been measured. If the emissions are not in accordance with the type approval requirements, the type approval authority has the possibility to address the manufacturer of the tested vehicle.

**4. At what point in time were you informed about real-world exceedances of NOx emissions by cars in the EU, including the ones type-approved in your Member State? How many vehicles are tested for in-service conformity on an annual basis in respect of cars type approved and in respect of cars sold per year in your country?**

Various reports by TNO have shown that through a period of time NOx emissions of modern diesel cars under normal circumstances on the road can turn out up to five or six times higher than the type-approval norm. This information can be found in the reports on the following websites:

- <https://www.tno.nl/en/focus-area/urbanisation/mobility-logistics/clean-mobility/emissions-of-nitrogen-oxides-of-diesel-vehicles/>
- <https://www.rijksoverheid.nl/documenten/rapporten/2016/03/10/tno-overzichtsrapport-nox-emissies-euro-5-en-euro-6-dieselpersonenauto-s>
- <https://www.rijksoverheid.nl/documenten/rapporten/2016/05/19/tno-report>

The studies undertaken by TNO were aimed at making average indications in order for calculation models to determine air quality in the Netherlands. The goal was not to investigate the possible use of defeat devices in vehicles. Accordingly, the research has not delivered results on specific cases.

Manufacturers are required to test vehicles for in-service compliance. It is not possible for authorities to give any indication of the number of cars involved, because they are not responsible for this.

**5. Did you have or receive any relevant knowledge or did you actively investigate the possible use of defeat devices in vehicles during laboratory test cycles after the establishment of the EU ban in 2007 and before the Notice of Violation issued by the US Environmental Protection Agency on 18 September 2015?**

RDW conducts vehicle emission laboratory tests for some vehicle manufactures. RDW strictly follows the implementing EU Regulation 692/2008 of the EU Regulation 715/2007. Despite the fact that defeat devices are forbidden, there are no specific procedures or guidance in the implementing regulation to investigate the possible use of defeat devices. Furthermore, there has previously been no specific concern for RDW to actively start an investigation during a vehicle certification process to find any defeat device.

**6. At what point in time have you been informed about the likely existence of defeat devices in the engines type-approved in the EU, including the ones type-approved, if so, in your Member State? What kind of action, if any, has been taken, at the level of your Member State in reaction to**

**emerging suspicion about the existence of defeat devices? What are the planned concrete next steps to better assess emission levels or to prevent potential manipulations?**

RDW was informed about the possible existence of defeat devices after the publications of EPA and CARB on September 18th 2015. On the 25<sup>th</sup> September 2015 RDW was formally informed by a note of the Kraftfahrt-Bundesamt (KBA) to the European Approval Authorities that VW also acknowledged manipulations in the European Union during the legally required emission type-approval test. These manipulations affect the Euro 5 vehicles with compression ignition engines (EA 189, 1,2l, 1,6 l und 2,0 l).

Information about the NO<sub>x</sub> emission differences between optimal laboratory conditions and under normal driving circumstances on the road, have been used in order to formally call for improvement of the test methods. The Netherlands is actively involved in European working groups for the development of real driving emission tests in the EU emission regulation. The Netherlands has actively pledged for a fast and effective introduction of a new Real Driving Emissions test procedure that encompasses additional requirements, which tackle the phenomenon of higher real world driving emissions. The Netherlands has also supported a unified European response and recall, ensuring the removal of faulty software from the market and replacement by proper software.

**7. The Commission's Joint Research Centre had warned in a 2013 report that defeat devices could falsify the results of emissions measurements. What measures did you take to investigate what is really happening and to prevent the violation of the law?**

Observations in the field showed for a longer time differences between the performance in laboratory tests and real driving tests. As mentioned in the answer to question 4, studies reveal a significant difference between the level of NO<sub>x</sub> emissions measured under optimal laboratory conditions as part of a formal type approval procedure and the real level of NO<sub>x</sub> emissions measured under normal driving circumstances on the road. The Dutch field test system has generated an enormous amount of data. The Netherlands has shared these Dutch test data, in order to clarify whether manufacturers besides Volkswagen have also used defeat devices. The Netherlands has additionally commissioned extra research on vehicles that already have type approval certificates. This research started in the beginning of October 2015 and is expected to be finalized this year. The study is directed towards vehicles that are not compliant and aims to identify the presence of defeat devices with manufacturers which have emission certificates. Thorough research is necessary before solid conclusions on fraud can be proven.

**8. In which cases have the national authorities considered, in line with Article 10 or Regulation 715/2007/EC, certificates of conformity to be no longer valid for the purposes of Article 7(1) of Directive 70/158/EEC and the registration, sale or entry into service been prohibited on grounds relating to emissions?**

RDW has not withdrawn certificates for the above mentioned purposes.

**9. Have you established relevant penalty rules due to non-compliance in line with EU law and whether such penalties have been issued since 2007? If yes, please specify their overall number and/or describe briefly concrete cases.**

See also the answer to question 1. European legislation prohibits the use of so-called defeat devices that reduce the effectiveness of emission control systems. The use of defeat mechanisms (Article 5(2) of the Regulation) is forbidden according to the "Besluit typekeuring motorrijtuigen luchtverontreiniging", and sanctioned by administrative or criminal sanctions through enforcement

of the “Wet milieubeheer” and the “Wet op de economische delicten” (WED). Concerning defeat devices there is no information indicating that there are specific cases of sanctioning.

**10. What measures have been taken to enforce the provision of Regulation 715/2007/EC Article 5(1) which requires manufacturers to equip vehicles so as to enable the vehicle to comply with the emission limit values contained in the Regulation “in normal use”, in particular in view of the evidence regarding the discrepancy of Euro 5 and Euro 6 vehicle emissions on the road compared to the laboratory conditions that has been available at least since 2011? What measures have national authorities taken to verify and bring the vehicles in compliance?**

Since a long period of time the Dutch government commissions research projects to the research organization TNO to measure polluting emissions (NO<sub>x</sub>, PM<sub>10</sub>) and CO<sub>2</sub>-emissions of passenger cars, vans, trucks and busses. The reports of these measuring projects are published and made available to national and European stakeholders and the Netherlands House of Parliament. This was done to support the Netherlands’ position that a new Real Driving Emission test procedure should be introduced as part of the European type approval procedure to reduce NO<sub>x</sub>-emissions of diesel cars under real world driving conditions.

The only possibility for enforcement of compliance with article 5 (1), is the harmonized measure in the implementing EU Regulation 692/2008 conducted by the type approval authorities. If a vehicle fulfills the requirements of 692/2008, without the RDE, the vehicle has demonstrated to be in compliance with article 5 (1).

**11. Article 5(2) of Regulation 715/2007/EC allows for certain derogations to the prohibition of defeat devices that reduce the effectiveness of emission control systems. In case of which manufacturers and for how many vehicle types and models have the use of the derogation been indicated to the type approval authority? What measures have the national authorities taken to verify the validity/correct justification of technical reasons for the applications of Article 5(2)?**

The use of these derogations is not indicated in the type-approval. It was never explicitly requested or mentioned by manufacturers. The focus of the tests is on the type approval method and the conditions.

**12. What provisions did the Member States foresee to ensure that type approval authorities could verify that no software adaptations were used?**

Type approval authorities do not check software adaptations as such. The software version is registered in the information document after the introduction of the on-board diagnostics (OBD) in the regulation. The results on emissions are also checked in the COP-procedures (Conformity of Production) for manufacturers.

**13. Why was the process of introducing the Real Driving Emission Test (RDE) so delayed despite the common knowledge of illegal NO<sub>x</sub> limits in the real world driving since 2011 and the obligation to introduce such test enshrined in Regulation 715/2007?**

Negotiations on new European legislation concerning reduction of vehicle emissions are complex and multifaceted processes during which the lobby of car industry has shown to be quite influential within the EU. The kick-off meeting for the working group for the development on real driving emissions of light duty vehicles (RDE-LDV) was held on the 31<sup>st</sup> January 2011, immediately after the news that in the NEDC the NO<sub>x</sub> results of diesel cars were not reflecting the performance in real driving conditions.

**14. Is there a possible conflict of interests between the car manufacturers and technical services given that many of the tests are carried out in the laboratories at manufacturers' premises and technical services are directly paid by the manufacturer?**

Manufacturers need emission laboratories at their own premises for research & development. These laboratories are calibrated by independent accredited institutes. From the perspective of efficiency, effectiveness and costs, the use of the manufacturers facilities is a reasonable choice. RDW has not seen signs of the suggested manipulation and is itself present for witness-inspections at manufacturers labs and independent labs.

**15. How does the decision-making process on new test procedures work in theory and in practice? How does the Technical Committee Motor Vehicles (TCMV) and its subcommittees with experts work? Who participates in the meetings of the TCMV and the subcommittees? How do industry stakeholders participate? Can industry participation in the subcommittees be considered balanced, and does its functioning correspond with EU rules and principles of good governance?**

The decision making process is as follows. If the Commission has a mandate by decision to change requirements, the Commission can draft a proposal which will be voted in the TCMV. For the development of such a Commission proposal normally a working group is set up, in this case the RDE-LDV working group. The RDE-LDV working group is open to stakeholder experts and accompanies the development of a RDE-LDV test procedure by the Commission and JRC. In particular, the group provides technical advice and information.

The RDE-LDV group focuses on technical issues of the RDE test procedure. Political and legal questions regarding the introduction level and timing of the RDE implementation for Euro 6 vehicles are handled under the scope of the decision making process of the TCMV, with only the involvement of Member States experts.

The RDE-LDV working group has one main group and one subgroup dealing with the development of the evaluation tool. The main group is open for different stakeholders. A few member states experts are attending these meetings and also some technical institutes like TNO, TUV, TU Graz (TUG), and also PEMS equipment manufacturers. NGO's like ICCT, T&E and AECC and several vehicle and component manufacture experts are attending these RDE-LDV meetings. The subgroup is attended by experts on data evaluation e.g. JRC, TNO, TUG and vehicle manufacturers experts. All experts give input on their own field of knowledge and interest and they all have in common that they bring valuable technical information to the table. Therefore, it is possible to conclude that the decision making process is in the TCMV with only Commission and Member States involved.

**16. What could and should a comprehensive RDE- test cycle look like in EU?**

The RDE test should reflect real driving in the EU under large driving and ambient conditions we see in reality. A demonstration test during the type approval test under that condition is one part of the RDE process. The most important part is the market surveillance requirements at a later stage of the RDE process.

**17. What procedures are used to audit / control the work of the type-approval authority?**

Every five year the work of RDW is evaluated by the ministry. Also, the activities are reported in an annual report. The ministry is involved by means of a final approval of the report. Besides this, learning and the improvement of processes are enabled by dealing with issues on a day-to-day basis.

The most recent and public annual report “*Wettelijk jaarverslag 2015*” can be found on the RDW website: [jaarverslag.rdw.nl](http://jaarverslag.rdw.nl).

**18. What is the legal procedure to be followed in your country when a vehicle fails to get type-approval? Is it allowed to approach another TAA (in another MS) after a failure to get approval? Is it allowed under your national law to type-approve a vehicle which has failed to get a type-approval in another MSs? If so, how many vehicles have been in this case in 2014 and in 2015?**

When a vehicle fails it needs to be adapted to fulfill the requirements of the regulations. It is not allowed to apply for an approval at another TAA if it's the same type. It is not allowed to issue a Dutch Type Approval on a failed vehicle from a non-Dutch TAA.

**19. Has your Member State supported, with direct or indirect financial schemes, sales of less pollutant vehicles as a measure to improve air quality? Which procedures have been implemented to ensure that such financial support will be granted only for car models which respect emissions limits in real driving conditions?**

In the period 2005-2008 there were tax incentives in the registration tax for diesel passenger cars that were equipped with a diesel particulate filter (DPF) that were required because of Euro 5. Furthermore Euro 6 diesel passenger cars were stimulated with tax incentives in the registration tax and vehicle tax. From about 2007 up to 2010 in total about 500.000 diesel passenger cars with DPF were sold with this incentive. Currently, no tax incentives persist in the Netherlands for car models which respect emissions limits in real driving conditions.

## **Part 2 Questions to Type-approval Authorities**

**1. What is exactly the role of type approval bodies in your country? How are they managed and audited - including number of authorized technical services, testing systems, number of tested cars etc.? Do you act also as private company providing technical, consultancy and laboratory services? Do you provide advice to car manufacturers on how to prepare vehicles for a test?**

RDW is responsible for issuing type approvals certificates and is responsible for the surveillance of the conformity of production at the manufacturer and the surveillance of the technical services. RDW is an independent agency under the responsibility of the Minister of Infrastructure. At this moment RDW has 37 designated technical services (TS). RDW is a non-profit organization and does not provide any consultancy services. RDW provides laboratory tests for manufacturers and runs an independent test center (ISO 17025). RDW only provides advice in relation to efficiency of the test, not in relation to the vehicle.

**2. Are you sufficiently equipped with legal and monitoring tools to verify the conformity of production and presence of software that can manipulate emissions?**

No, in the production phase of vehicles, Conformity of Production only requires to produce the results of the laboratory emission tests. No tests will be done during the surveillance of COP.

**3. How was the obligation on the conformity of production implemented in your country (verification whether produced cars comply with the prototype type-approved)? Are the conformity of production tests done randomly on a random vehicle or on a sample car provided by the manufacturer?**

RDW performs system audits based on a risk-based system. During the audit the RDW assesses and witnesses the COP tests performed by the manufacturer.

**4. Were the type approval bodies in your country approached by third parties with information or evidence indicating the use or possible use of defeat devices?**

No.

**5. How does type approval and testing work in practice? What is the particular role of technical services, laboratories, car manufacturers and national type approval organisations in your country? Are vehicle manufacturers represented in any governing or advisory bodies of the type approval authority?**

RDW has an annual stakeholders meeting. National stakeholders, trade organizations and manufacturers are represented in these meetings. The process is explained in the document titled: *"Information for manufacturers - Surveillance and CoP EC Directives and ECE Regulations"*. This document can be found on the [RDW website](#).

**6. Do type approval bodies and test organisations across Europe apply comparable standards, instruments and procedures?**

Type Approval Bodies and test organisations apply comparable standards based on EU-legislation, TAAM- and TAAEG-interpretations and ISO17025 accreditations.

**7. May type approval authorities and/or technical services test cars on the road or apply a different laboratory test, if they consider this necessary (e.g. to verify the use of a defeat device)?**

This is not a common practice. It is very difficult for a TA to judge the necessity of an additional test based on the test report and the information document. A general additional test can be done by market surveillance.

**8. How many emission measurements are carried out in your organisation in a year? And by how many persons?**

More than 200 measurements in a year, carried out by 15 persons.

**9. How and in what extent is the type-approval authority financed, publicly and privately, what is the price of type approval and how are fees, if any, collected?**

Type-approvals are financed based on covering the expenses of the TAA. Tariffs are set by the ministry and the price for 2016 is 263 EUR. Fees are collected by sending an invoice to the applicant.

**10. Have there been cases where national type approval organisations intervened in companies providing technical services or laboratories? What happened after that?**

Yes, if necessary the TS will be forced to take corrective and preventive actions and the implementation of these action will be assessed.

**11. Where your authority also acts as a technical service, how are lines of management organised and independence assured?**

The independency is assured by an organizational separation and partial responsibility. Decisions in the process are backwards traceable to the qualified inspector.

**12. Do you have procedures for dealing with conflicts of interest?**

There are general procedures for integrity. RDW performs system-audits according to ISO9001 and ISO17025(for testing). Conflict of interests is part of these quality-systems. We do sample checks on the reports and certificates to assure the correct results.

**13. Whether and in which cases have the national authorities considered in line with Article 10 or Regulation 715/2007/EC certificates of conformity to be no longer valid for the purposes of Article 7(1) of Directive 70/158/EEC and the registration, sale or entry into service been prohibited on grounds relating to emissions?**

There have been no such cases.

**14. Are you aware of car manufacturers using specifically selected cars ("golden cars") for emission measurements and type approval?**

No.

**15. What is legally the procedure when a car fails the emissions tests or fails to get a type approval? Is it legally allowed to engage another test organisation after a failed test or failure to get approval?**

The manufacturer is free to choose a TS, also after a failing test.

**16. Would you confirm that there exists a 'type approval shopping' phenomenon in Europe? Do your type approval authorities have an unusual high share of type approvals of cars in general or specific automotive parts?**



Manufacturers can freely choose an authority. Multiple factors influence their choices, like the price and quality of type approval. The Netherlands has no unusual share of type-approvals of cars in general or specific automotive parts.

**17. In your understanding, what are technically safe operating conditions, including temperature, for emission technologies such as SCR, LNT and EGR? What are the minimum and maximum temperature conditions?**

There are many specific technical conditions where adjustments in the calibrations for emission technology is needed. For instance if the SCR system itself is below his own operating temperature of about 200 °C, the urea injection is temporary stopped. However concerning ambient temperature the RDE minimum and maximum temperatures are set between -7 °C and + 35 °C so emission technologies (EGR-LNT- SCR) should in combination have to deal with these ambient temperatures.

**18. How many type approval applications have been rejected, recalled or withdrawn as regards Euro5 or Euro6 applications? How do you inform other authorities and the Commission of such cases?**

No applications have been rejected, withdrawn or recalled by RDW.

**19. Have any of the engines installed in the faulty Volkswagen cars been type-approved by your national type approval authority?**

No.