

Safeguarding compliance with new vehicle emissions legislation

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The emissions performance of vehicles is improving, but continuous monitoring is needed to follow the implementation of the new vehicle emissions legislation and compliance with it, according to a new Science for Policy report from the Joint Research centre, the European Commission's science and knowledge service.

The JRC assists other services of the European Commission in preparing the groundwork for the entry into force of the new EU Type Approval framework, in particular [vehicle](#) emissions legislation. This framework has introduced new testing procedures for measuring pollutant emissions under a wide range of real driving conditions.

The JRC continues to assess vehicle emissions control technologies and their emissions performance. Within its most recent emissions testing activities, a sample of 15 vehicles complying with Euro 5b and Euro 6b standards, representing brands with high sales numbers and using the most common technologies available, was built and their emissions performance assessed, both in laboratory and on-road tests.

The European methodology developed by the JRC to detect defeat devices—illegal emissions control strategies—was also applied to these vehicles, to improve the methodology and to support the investigations conducted by EU Member States.

This work also serves as a pilot activity to prepare the JRC for the future market surveillance role under the new Type Approval Regulation, from

1st September 2020. Moreover, from January 2019, the JRC will check—on behalf of the Commission—the compliance of light-duty vehicles on the market with the recently adopted Real-Driving Emissions (RDE) requirements.

Emissions performance of Euro 6b vehicles

In 2017, the JRC tested a number of vehicles, most of which were type approved for Euro 6b [emission](#) limits (i.e. pre-RDE vehicles). The tests were carried out both in the laboratory and on the road and were conducted to evaluate the emissions performance of these vehicles.

The tests primarily contribute to an understanding of which technologies are the cleanest at a given point in time. They also allow for checking whether there have been improvements to the nitrogen oxide (NO_x) emissions performance of diesel vehicles.

All the tested vehicles complied with the applicable [pollutant emissions](#) limits on the New European Driving Cycle (NEDC) tests. With respect to RDE tests, while all the tested gasoline Euro 6b vehicles were already below the future NO_x Euro 6d-TEMP conformity threshold, only 2 of the 7 diesel Euro 6b vehicles tested were found to be below the NO_x Euro 6d-TEMP conformity threshold.

Under laboratory and RDE tests, and for the (small) vehicle sample, the NO_x emissions of Euro 6b diesel vehicles were still, on average, eight times higher than those of Euro 6b gasoline vehicles. However, the diesel cars performed much better than gasoline cars in tests on other regulated pollutants—carbon monoxide, hydrocarbons (measured only in laboratory conditions only) and ultrafine particulate matter.

The NO_x emissions of diesel cars are expected to be substantially reduced following the introduction of the RDE requirements, in force

for type approval of vehicles since September 2017. The situation will be monitored continuously by the Commission (and the JRC in particular) over the coming years.

Developing tools to detect illegal practices

To support Member States' investigations on the use of defeat devices, the JRC has contributed to the development of emissions testing methodologies which can be used to build evidence of potential illegal strategies.

To carry out this work, the JRC tested a selection of vehicles—including those for which the presence of a defeat device was already established—to verify that the developed testing methodologies were able to detect the presence of the defeat devices.

The methodologies were made available to national authorities via the European Commission Type Approval Authorities Expert Group (TAAEG) in January 2017, when the European Commission also published a guidance document on the evaluation of emissions strategies and for detecting suspicious behaviour that could be caused by the presence of defeat devices.

JRC Science for Policy report

The results of the tests carried out by the JRC are summarised in a [Science for Policy report](#), which is publicly available on the JRC's website.

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