



A manufacturer cannot install a defeat device which systematically improves, during approval procedures, the performance of the vehicle emission control system and thus obtain approval of the vehicle

The fact that it contributes to preventing the ageing or clogging up of the engine cannot justify the presence of such a defeat device

Company X is a car manufacturer that markets motor vehicles in France. That company placed on the market vehicles equipped with software capable of distorting the results of type-approval tests for emissions of gaseous pollutants, such as nitrogen oxides ('NOx').

Following disclosures in the press, the Parquet de Paris (Prosecutor's Office, Paris, France) conducted an investigation which resulted in the launch of a judicial investigation in respect of Company X. That company is alleged to have deceived the purchasers of diesel engine vehicles as to the essential qualities of those vehicles and the controls carried out before they were placed on the market.

The vehicles at issue were fitted with an exhaust gas recirculation (EGR) valve. The EGR valve is one of the technologies used by car manufacturers in order to manage and reduce final NOx emissions. It is a system which consists in redirecting part of the exhaust gas from combustion engines to the gas inlet manifold, that is, the engine air supply, in order to reduce final NOx emissions.

Before being placed on the market, those vehicles were subject to vehicle approval tests conducted in a laboratory using the New European Driving Cycle, the technical parameters of which are predefined (temperature, speed etc.). The purpose of those tests is, amongst other things, to ascertain the level of NOx emissions and the observance of the limits set by Regulation (EC) No 715/2007¹ in that regard. The emissions of the vehicles at issue had therefore not been analysed under normal driving conditions.

An expert's report, produced in the context of the judicial investigation procedure, found that the vehicles in question were fitted with a device that allowed the phases of the approval procedure to be detected and the operation of the ERG system to be adjusted in order to observe the regulatory ceiling for emissions. Conversely, in conditions other than those of the approval tests, namely in normal conditions of vehicle use, that device leads to the (partial) deactivation of the EGR system and, as a result, to an increase in NOx emissions. The expert further stated that if the operation of the EGR system in actual traffic had been consistent with that during the approval tests, those vehicles would have produced significantly less NOx. Maintenance operations would, however, have been more frequent and expensive on account, amongst other things, of the engine clogging up more quickly.

Regulation No 715/2007 expressly prohibits the use of defeat devices which reduce the effectiveness of emission control systems under normal conditions of vehicle use.

¹ Regulation of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ 2007 L 171, p. 1).

The national court decided to refer the matter to the Court of Justice seeking clarifications, in particular with regard to the definition and the scope of the concepts of 'emission control system' and 'defeat device'.

In its judgment of today, the Court states that it must be examined, first, whether software installed on the engine control calculator or more generally acting on that calculator must be considered to be an 'element of design' for the purposes of Regulation No 715/2007. It recalls that the 'defeat device' is defined by that regulation as being 'any element of design which senses temperature, vehicle speed, engine speed (RPM), transmission, gear, manifold vacuum or any other parameter for the purpose of activating, modulating, delaying or deactivating the operation of any part of the emission control system, that reduces the effectiveness of the emission control system under conditions which may reasonably be expected to be encountered in normal vehicle operation and use'. Next, the Court finds that the concept of 'element of design' is not defined in the legislation. It then states that the term 'element of design' designates, in its usual sense, an object manufactured with a view to its inclusion in a functional unit, and that it is clear from the regulation that the concept of 'defeat device' referred to therein designates 'any' element of design. The Court observes that the effectiveness of the depollution is linked to the opening of the EGR valve, which is controlled by the source code of the software installed on the calculator, and that, as a consequence, where it acts on the operation of the emission control system and reduces the effectiveness thereof, **software, such as that at issue, installed on the engine control calculator, constitutes an 'element of design'**, for the purposes of Regulation No 715/2007.

The Court goes on to determine whether the technology used in the EGR system which reduces emissions produced upstream – that is, when they are produced within the engine itself – comes within the scope of the concept of 'emission control system', for the purposes of the regulation. The Court finds that the regulation does not define the concept of 'emission control system' as such but recalls in its preamble that, having regard to the objective of reducing emissions set out therein, it is necessary to make provision for devices intended to measure and manage emissions while a vehicle is in use. The Court states, moreover, that **the regulation sets the objective to be met by car manufacturers, namely to limit tailpipe emissions, without specifying the means to achieve it**. The text provides that any technical measures taken by the manufacturer must be such as to guarantee the effective limitation, amongst other things, of tailpipe emissions, throughout the normal life of vehicles, under normal conditions of use. The Court recalls that, in vehicle type-approval procedures, emissions levels are always measured at the outlet of the exhaust pipe. Thus no distinction can be made between the strategy for reducing exhaust gas emissions after these are produced and that intended to limit the production of those emissions. It is therefore apparent from Regulation No 715/2007 that the concept of 'emission control system' includes, on the one hand, the technologies and the strategy internal to vehicle engines which seek to limit the production of emissions and, on the other hand, those intended to reduce emissions after these have been produced. The Court therefore concludes that **the technologies and strategy which reduce emissions 'downstream' – that is, once these are produced – and those which, like the EGR system, reduce emissions 'upstream' – that is, when they are produced – come within the scope of the concept of 'emission control system'**.

The Court goes on to examine whether a device which detects any parameter associated with the conduct of approval procedures for the purposes of improving performance, during those procedures, of the emission control system constitutes a 'defeat device', even where such an improvement can also be observed, on specific occasions, in normal conditions of vehicle use. The Court recalls that, in the context of partial approval relating to the emission of pollutants, vehicles are tested using the NEDC speed profile, which consists of replicating, in a laboratory, four urban cycles followed by one extra-urban cycle. This is intended, amongst other things, to ascertain that the quantity of NO_x emitted is below the threshold laid down by Regulation No 715/2007. Thus, **the test cycles for vehicle emissions in that procedure are not based on real traffic conditions**. The Court finds that the software at issue allows the parameters corresponding to those of laboratory tests under the NEDC profile to be detected and, where appropriate, the EGR valve to be opened wider in order to redirect a greater proportion of the exhaust gases to the gas inlet manifold and thus reduce the emissions of the vehicle being tested. It therefore allows the

operation of the EGR valve to be intensified, so that emissions are in line with the thresholds set by Regulation No 715/2007. Having examined the concept of 'defeat device' within the meaning of that regulation, the Court holds that **software, such as that at issue, which alters the level of vehicle emissions in relation to the driving conditions which it detects and guarantees that emission limits are observed only when those conditions correspond to those applied during approval procedures constitutes a defeat device.** In addition, **that software constitutes a defeat device even if an improvement in the performance of the emission control system can be observed, on specific occasions, in normal conditions of vehicle use.** The Court adds that the fact that normal conditions of vehicle use can exceptionally correspond to the driving conditions applied during approval procedures and improve, on specific occasions, the performance of the device in question is irrelevant to that interpretation, as the objective of reducing NOx emissions is usually not met in normal conditions of vehicle use.

As to the question whether the installation of a defeat device which reduces the effectiveness of the emission control system – which is, in principle, prohibited – may be justified, the Court points out that, **in order to be justified, the presence of such a device must allow the engine to be protected against sudden and exceptional damage, and that only those immediate risks of damage which give rise to a specific hazard when the vehicle is driven are such as to justify the use of a defeat device.** The prohibition laid down by the regulation would be rendered meaningless and deprived of any useful effect if the use of prohibited defeat devices were to be permitted with the sole aim of guarding the engine against clogging up and ageing. The Court therefore concludes that **a defeat device which systematically improves, during approval procedures, the performance of the vehicle emission control system so as to observe the emission limits set by Regulation No 715/2007 and thus obtain approval of the vehicle cannot come within the scope of the exception to the prohibition on such devices provided for by the regulation, even if that device contributes to preventing the ageing or clogging up of the engine.**

NOTE: A reference for a preliminary ruling allows the courts and tribunals of the Member States, in disputes which have been brought before them, to refer questions to the Court of Justice about the interpretation of European Union law or the validity of a European Union act. The Court of Justice does not decide the dispute itself. It is for the national court or tribunal to dispose of the case in accordance with the Court's decision, which is similarly binding on other national courts or tribunals before which a similar issue is raised.

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