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ICCT TRUE report: true or not? ACEM comments on the ICCT report on pollutant emissions from cars, mopeds, motorcycles and other vehicles in Paris

The International Clean Council on Transportation (ICCT) recently published a study on vehicle emissions in Paris, on behalf of the Real Urban Emissions (TRUE) Initiative¹. The study was mandated by the City Council of Paris and concludes that emissions from motorcycles in that city are higher than those of petrol cars.

ACEM seriously questions the reliability of the remote sensing technology used by the ICCT to measure real urban emissions from the wide range of motorcycles and other L-category vehicles. Whilst this limitation is to some extent acknowledged in the report, which reads: “the smaller engines used in these vehicles result in a smaller plume signal relative to vehicles with larger engines”, the authors also draw negative conclusions as to the environmental performance of motorcycles, including those meeting latest Euro 4 standards.

ACEM has grounds to believe that the report’s conclusions are based mainly on measurements of L-category vehicles during their acceleration phase. A generalisation of such results simply does not match real urban reality and results in a drastic overestimation of vehicle emissions.

Research carried out by the European Research on Mobile Emission Sources (ERMES) has clearly shown that the emission performance of Euro 4 motorcycles is similar to the one of Euro 5 and 6 petrol cars. These measurements were taken using well-established, lab measurement technology, as well as real world test cycles.

The ERMES findings were used by the European Environmental Agency to update its own emissions model (COPERT²) in 2019. The COPERT model is used by policy-makers across Europe to model vehicle fleet emissions in urban areas. Furthermore, the ERMES findings were also used by public authorities in Austria, Germany, Sweden and Switzerland to update the Handbook Emission Factors for Road Transport (HBEFA³).

¹ https://theicct.org/sites/default/files/publications/TRUE_ParisRS_study_20190909.pdf

² <https://www.emisia.com/utilities/copert/documentation>

³ <https://www.hbefa.net/e/index.html>

Quote

Commenting on the study, Antonio Perlot, ACEM Secretary General said:

“ACEM fully supports the principle of public authorities mandating independent studies to gather evidence for effective policy-making. However, it is of utmost importance that such independent studies are performed using validated, accurate testing methods.

“The ICCT report is inconsistent with recent independent research findings based on real world emissions for motorcycles. The large number of invalid measurements and the high level of uncertainty of the valid ones clearly indicate that the remote sensing technology in the ICCT report is unable to correctly measure emissions of L-category vehicles. In other words, ICCT should not have drawn any conclusions based on these measurements. This could lead to ill-advised policies, which is unacceptable”.

“ACEM has already contacted the authors of the study and will continue engaging constructively with the ICCT to discuss both the findings of their report and the possible limitations of the measurement technologies used. In any event, the motorcycle sector remains fully committed to continuing to invest in cleaner technologies and reducing its environmental footprint. The entry into force of the Euro 5 environmental standard in 2020 will be another important step in that direction”.

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NOTE FOR EDITORS

1. Inconsistency with prior findings

The findings of the report prepared by the ICCT for the the Real Urban Emissions (TRUE) Initiative are inconsistent with other measurements of real-world emissions recognised by European authorities. The authors of the study claim that Euro 4 motorcycles emit a level of carbon monoxide (CO) and nitrogen oxides (NOx) similar to Euro 2 and Euro 3 petrol cars.

However, research carried out by the European Research on Mobile Emission Sources (ERMES) has clearly shown that the emission performance of Euro 4 motorcycles is similar to that of Euro 5 and 6 petrol cars. These measurements were made using well-established, lab measurement technology, as well as realistic world test cycles.

The ERMES findings were used by the European Environmental Agency to update its own emissions model (COPERT) in 2019. The COPERT model is currently used by policy-makers across Europe to model total vehicle emissions in urban areas. Moreover, ERMES was also used by public authorities in Austria, Germany, Sweden and Switzerland to update the Handbook Emission Factors for Road Transport (HBEFA).

2. Limits of remote sensing devices (RSD)

Unlike other well-established measurement techniques, the remote sensing devices (RSD) used by the ICCT may lack the sensitivity required to capture all real world driving emissions, particularly for smaller motorcycles. This is acknowledged in the report which reads: “the smaller engines used in these vehicles result in a smaller plume signal relative to vehicles with larger engines”.

In other words, RSD measurements are likely to over-represent riding conditions with higher emission levels and to under-represent normal emission levels, which are not fully detected, especially for smaller motorcycles. The ICCT report refers to “3,455 valid measurements” of L-category vehicles’ emissions but it also makes it clear that there were a very high proportion of invalid measurements. For certain sub-category vehicles, the number of invalid (and discarded) measurements is almost as high as the number of valid measurements. This raises serious questions as to the overall reliability of the technology used in this project.

The report also shows that the degree of uncertainty in the measurements of emissions of L-category vehicles is extremely high for certain pollutants, much more so than for other means of transport. Considering this, the conclusions that can be drawn from such measurements are more than questionable.

3. Inadequate comparisons between cars and motorcycles

The comparison drawn in the report between motorcycles propelled by petrol engines and cars using the same fuel is to a large extent deceptive. Whilst motorcycles and mopeds are not fitted with diesel engines, 64% of the cars on Paris' roads run on diesel fuel. Except for the very latest generation (Euro 6d), diesel cars have a much higher level of NOx-emissions than motorcycles. A robust analysis of the vehicle fleet in Paris should take these facts into consideration.

Moreover, the study does not explore the reasons that may explain a higher level of NOx emissions for some of the measurements. Possible causes may include poorly maintained or illegally tampered motorcycles and mopeds, as well as vehicles that have not undergone periodical technical inspections. These aspects should be duly taken into consideration in future studies.

About ACEM

The European Association of Motorcycle Manufacturers (ACEM) represents manufacturers of mopeds, motorcycles, three-wheelers and quadricycles (L-category vehicles) in Europe.

ACEM members include 18 manufacturing companies: BMW Motorrad, Bombardier Recreational Products (BRP), Ducati Motor holding, Harley-Davidson, Honda, Kawasaki, KTM, KYMCO, MV Agusta, Peugeot Scooters, Piaggio, Polaris Industries, Renault, Royal Enfield, Suzuki, Triumph Motorcycles and Yamaha.

ACEM also represents 18 motorcycle industry associations operating in 15 European countries.