



Transport sustainability, sound emissions and noise: A collective response for a shared responsibility

Whilst modern transport systems largely contribute to the high levels of economic and social welfare in our societies, they also generate downsides in terms of traffic congestion, traffic casualties, climate change, air pollution and noise. The World Health Organization (WHO) has classified traffic noise, including road, rail and air traffic, as the second most important cause of ill health in Western Europe, second only to air pollution caused by very fine particulate matter.

According to the European Environment Agency about 100 million people are affected by harmful levels of noise, mostly in heavily populated areas. As part of the ambition of improving the sustainability of transport, Europe is increasingly focusing on reducing transport externalities such as noise. The balance between economic growth and noise levels is therefore a Europe-wide challenge that must be addressed through effective and well-targeted policies, including at local level.

The European Association of Motorcycle Manufacturers (ACEM) understands that citizens, politicians and regulators have concerns regarding high levels of noise on the road. Emissions of noise at source have been regulated in the EU, with maximum permitted sound levels defined for PTWs since the 1990s, as part of European type approval requirements. ACEM manufacturers continue working on exciting, sustainable, personal transport solutions for today and the future; ensuring safe, clean, smart, fun and efficient mobility for all.

PTW sound: supporting an appropriate eu legislative framework

PTW sounds are generated from multiple sources, including the gear box, the chain drive, the rolling resistance noise from the tyres, as well as from the engine itself. Unlike cars, almost all of the mechanical parts of a PTW are exposed. This makes it far more challenging to reduce the overall sound.

For PTWs, the current Euro 5 type approval framework legislation sets a maximum sound limit of 77 dB(A) to be achieved under specific test conditions. Regardless of technical feasibility and costs, ACEM believes that a further decrease in the noise limits for new vehicles would have a very limited effect on real world noise emissions.

As part of its commitment to the environment, ACEM is actively working on several aspects to reduce motorcycle sound emissions in real traffic conditions, pushing to ensure continuous improvements in the representativity of the test method, both in Europe and as part of the globally harmonised UNECE regulations.

UNECE Regulation 41 governs the testing of PTW sound and is adopted by the EU. In addition to the overall sound limits, this regulation also includes Additional Sound Emission Provisions (ASEP). The Additional Sound Emission Provisions were included in the sound regulations, addressing concerns that only one riding condition was being tested and ensuring that the rest of the range would be



The testing of PTW sound is governed by UNECE Regulation 41, that sets the overall sound limits and includes the Additional Sound Emission Provisions (ASEP).

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compliant. The current ASEP test takes 4 additional sound measurements, which can be taken at random in any one of 2nd, 3rd or 4th gear.

In March 2019, the PTW industry successfully proposed an amendment and changed Regulation 41 to ensure that ASEP testing became a mandatory part of the procedure. In the past, a manufacturer declaration was sufficient for ASEP approval. This also ensures a level playing field across the sector, whereas previously, ASEP testing was only an optional step, decided by type approval authorities. Furthermore, in 2019 the PTW industry also introduced an amendment to make ASEP mandatory in UNECE Regulation 9 for 3-wheelers.

PTW noise: dealing with peak events and hot spots

ACEM understands that in some European regions some citizens are disturbed by motorcycle noise. Whilst sound is an inherent part of the motorcycle architecture (exposed mechanical parts...), the industry does not support anti-social rider behaviour nor illegal modification of vehicles taking them out of the legal sound limits.

The share of motorcycles and mopeds in overall surface transport in Western Europe is on average about 3%, although the density of these vehicles is much higher in big cities. When fitted with well-maintained road-legal exhaust systems, these vehicles emit similar sound levels to passenger cars, therefore going largely unnoticed within normal vehicle flow.

However, a tampered, illegally modified motorcycle, fitted with non-road legal exhausts, will create peak events and be perceived as highly disturbing – especially in densely populated areas, such as cities, and at specific times of the day.



Riding responsibly, avoiding excessive noise emissions, is key to ensure the future of the motorcycling way of life.

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Further to that, it cannot be denied that at so-called “hot spots” in Europe, such as mountainous areas with scenic roads attracting many tourists, the local residents may be disturbed by traffic sounds, including by the sound levels originating from some motorcycles, especially on weekends and during holidays.

An original and well-maintained motorcycle will always be considerably quieter than the same vehicle, illegally modified and/or poorly maintained. Equally, a vehicle ridden smoothly will also be quieter than a vehicles ridden in an aggressive manner.

Awareness is therefore of paramount importance to reduce sound emissions, through communication campaigns supported by the motorcycle sector (manufacturers, dealers, industry and user associations), aimed at reaching motorcycle riders and the wider community, and supporting mutual understanding.

Continued police enforcement action is essential in the market to prevent the use of non-road legal exhaust systems. The industry has noted that several Member States have recently begun trials of acoustic cameras to enforce legal sound levels, in a similar approach to speed cameras. It is possible that these cameras may be able to efficiently identify non-road legal exhausts and the PTW industry cautiously welcomes this effort to improve legal enforcement (subject to learning more about the accuracy of such cameras, and pending assurance that compliant vehicles are not wrongly penalized). Importantly, the antisocial behavior of a minority should not impact the legitimate mobility rights of the majority. Furthermore, any usage restrictions based on sound levels should equally apply to trucks, buses, tractors and cars which may use these routes causing disturbances.



Continued police enforcement action is essential in the market to prevent the use of non-road legal exhaust systems and to limit vehicle excessive noise.

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A multi-stakeholder approach is needed to address the real issue

ACEM commits to working with all stakeholders involved to prevent excessive motorcycle noise:

- working in synergy with all actors in the motorcycle sector, and in particular motorcycle users associations, to reach riders and raise their awareness on social responsibilities. Individual riders should choose to be part of the solution, not part of the problem.
- increasing collaboration with policy makers and authorities, at European and National level, to guide on appropriate technical requirements and increase oversight of the after-market by third parties.
- supporting local and regional administrators, through participation in roundtables, to properly address specific noise issues in the urban environment and at hot spots (targeting riding behaviour, building awareness, contributing to the development of meaningful local policy measures...)

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, Qooder, Royal Enfield, Suzuki, Triumph Motorcycles, Yamaha and Zero Motorcycles.

ACEM also represents 20 motorcycle industry associations in 17 different European countries. About 300,000 jobs depend on the L-category industry in Europe. There are more than 39 million motorcycles and scooters on Europe's roads (2019 estimate).

To find out more about ACEM please visit www.acem.eu