

EC sound level study (Euro 5)

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IMMA comments and request for clarification

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Industry position:

Policy measures should have a REAL WORLD EFFECT

1. Lowering the TA limits will not solve TRUE problem: single events!

What is the problem the EC wants to address?

- Sound emission of L-category at fleet level? (vs. cars)

complementary factors, ranging from noise type approval test quality, OEM and aftermarket surveillance, tampering control stringency, on-road vehicle monitoring systems in place, etc. The European Commission, through the new sound level limits for Euro 5, tries to provide an improved sound level range in order to contribute in delivering real world traffic noise reduction on a fleet level.

p. 24 of the EC study report

- Noise disturbances from single events?

L-vehicle owners sometimes manipulate the exhaust system in order to 'improve' (increase) the sound emission in practice. However, it is believed that most of the excessive sound emissions (noise) come from illegal usage or tuning of NORESS and, especially, the non-type approved ones and those using devices such as dB-killers (which can be removed easily), active chambers, manually operated chambers. These systems are easily altered producing higher peak levels, generating more annoyance for the public.

p. 22 of the EC study report

1. Lowering the TA limits will not solve TRUE problem: single events! (cont.)

- Lowering TA limits
 - will mainly lower fleet sound emissions, of new vehicles
 - will have no/very limited real world effect and risks to have the opposite effect by encouraging tampering

- Reducing single events should be priority of policy measures
 - Enforcement
 - R41 ASEP revision
 - R92 (e.g. *GRB-67-03*)
 - Rider education

Table 30: Benefit to cost ratios for 4 scenarios, for motorcycles, based on single event analysis.

	B/C
L-cat limits -2 dB, 25% IL	2,8
L-cat limits -5 dB, 25% IL	5,5
L-cat limits -2 dB, 0% IL	37,8
L-cat limits -5 dB, 0% IL	30,5

p. 191 of the EC study report

2. Wide variety of vehicle types not properly addressed

- Number of vehicles tested is too low
 - E.g. only one bigger motorcycle (L3 \geq 800 cc)
 - E.g. only one tricycle (passenger L5e-A)

Not representative for the wide variety of L-category vehicle

- Noise Source Ranking
 - Only 3 vehicles tested → Conclusions are not representative

It is not appropriate to have the same proposal for all L3 vehicles for Euro 5 sound limits.

3. Questions on the CBA

- Cost and technology assumptions
 - -2dB(A) not only achievable by changing the exhaust system
 - Sensitivity indication?
- Traffic flow rates (cfr slide 7)
 - Traffic flow increases during the night in Southern Europe?
 - Same motorcycle & moped flow in southern Europe for all 3 time frames during the day?
- CNOSSOS +5dB (cfr slide 8)
- Users reactions on lower limits not taken into account

Questions on CBA – Traffic flow

Table 23: Traffic flow rates for road types considered in numbers of vehicles per hour, left for Northern Europe, right for Southern Europe. p. 180 of the EC study report

	Northern Europe: Vehicle flow in no./hour					Southern Europe: Vehicle flow in no./hour			
Day 12 h	Residential	Main	Arterial	Rural	Day 12 h	Residential	Main	Arterial	Rural
Cars	30,0	302,6	2030,6	356,9	Cars	25,0	236,8	842,5	250,0
Medium veh.	4,0	11,1	78,9	16,0	Medium veh.	4,6	43,4	154,5	45,8
Heavy veh.	0,0	11,4	81,0	17,2	Heavy veh.	1,7	15,8	56,2	16,7
Motorcycles	0,0	15,1	101,5	17,8	Motorcycles	2,1	19,7	70,2	20,8
Mopeds	1,5	15,1	101,5	0,0	Mopeds	8,3	78,9	280,8	83,3
Evening 4 h					Evening 4 h				
Cars	15,0	154,7	1039,4	183,3	Cars	28,3	268,3	954,8	283,3
Medium veh.	2,0	2,9	21,9	4,5	Medium veh.	2,5	23,7	84,3	25,0
Heavy veh.	0,0	4,9	34,0	7,2	Heavy veh.	0,4	3,9	14,0	4,2
Motorcycles	0,0	7,7	52,0	9,2	Motorcycles	2,1	19,7	70,2	20,8
Mopeds	0,8	7,7	52,0	0,0	Mopeds	8,3	78,9	280,8	83,3
Night 8 h					Night 8 h				
Cars	10,0	50,4	338,2	58,9	Cars	28,8	272,3	968,9	287,5
Medium veh.	0,0	2,4	16,3	3,4	Medium veh.	2,1	19,7	70,2	20,8
Heavy veh.	0,0	3,5	24,6	5,1	Heavy veh.	0,4	3,9	14,0	4,2
Motorcycles	0,0	2,5	16,9	2,9	Motorcycles	2,1	19,7	70,2	20,8
Mopeds	0,5	2,5	16,9	0,0	Mopeds	8,3	78,9	280,8	83,3

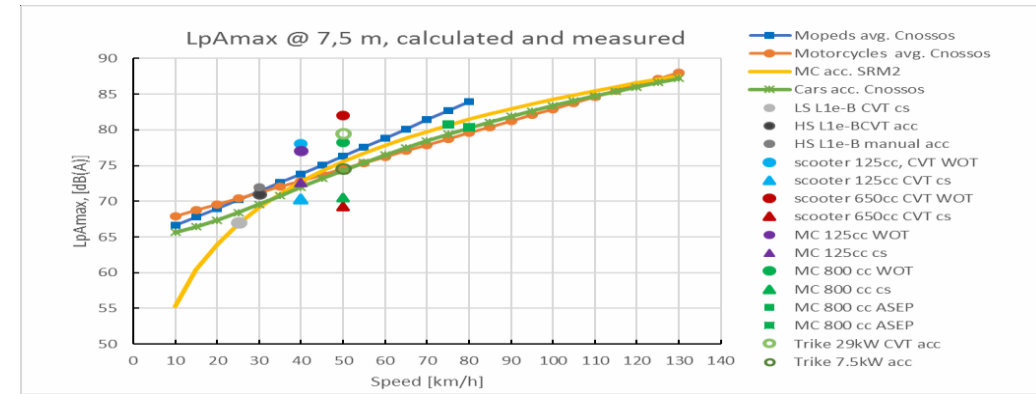
- Traffic flow increases during the night in Southern Europe (for Cars and Medium veh.)?
- Same motorcycle & moped flow in southern Europe for all 3 time frames during the day?
- **If incorrect, this would imply that the calculated L_{DEN} for Southern Europe is incorrect.**

3.2 CBA assumptions (CNOSSOS)

4.2.7 Relevant findings from the stakeholder survey, literature review, and vehicle testing (p. 174 of the EC study)

Measured levels compared to CNOSSOS calculated levels (p. 175 of EC study)

As the environmental impact and benefits need to be based on a calculation model with some relation to measured values from the type test, the test results presented in section 3 were evaluated to compare the LWOT and Lcrs values with values calculated with the CNOSSOS noise emission model. As shown in Figure 25, these indicate that for L3e vehicles the calculated sound level is approximately in between the acceleration level LWOT and the constant speed level Lcrs. For the L1e vehicles the measured levels are within 1 dB of the calculated levels, and for one of the L5e vehicles about 3-5 dB above the calculated levels. The implication of this is that for the L3e and L5e vehicles the calculated level should be increased by around 5 dB. For mopeds, an increase of 3 dB is applied.



Southern EU (p. 165 of EC study)

All accelerating traffic including motorcycles and mopeds, all of the year, but selecting 50% of the roads with lower proportions of heavy vehicles. The proportion of L-category vehicles to other traffic is much higher in Southern European countries. The sound power level as calculated by CNOSSOS is increased for motorcycles by 5 dB to represent real traffic noise levels under acceleration conditions, reflecting findings from the L3e and L5e measurements in this study.

- By adding 5 dB(A) to CNOSSOS levels, the study seems to assume that MC are constantly driving WOT.
- Conclusion drawn upon testing one motorcycle (800cc) → Not representative

SUMMARY

- **View on EC study**

1. Lowering the TA limits will not solve TRUE problem: single events!
2. Wide variety of vehicle types not properly addressed
3. Questions on CBA

- **Policy measures should have a REAL WORLD EFFECT**

- **Total L-cat fleet sound emission is NOT the key issue!**
- **Better work on single events to tackle citizen nuisances**