

Noise figures in vehicle Certificates of Conformity

versus

Noise as perceived by citizens

Latest evidence from NEFOM and LENS

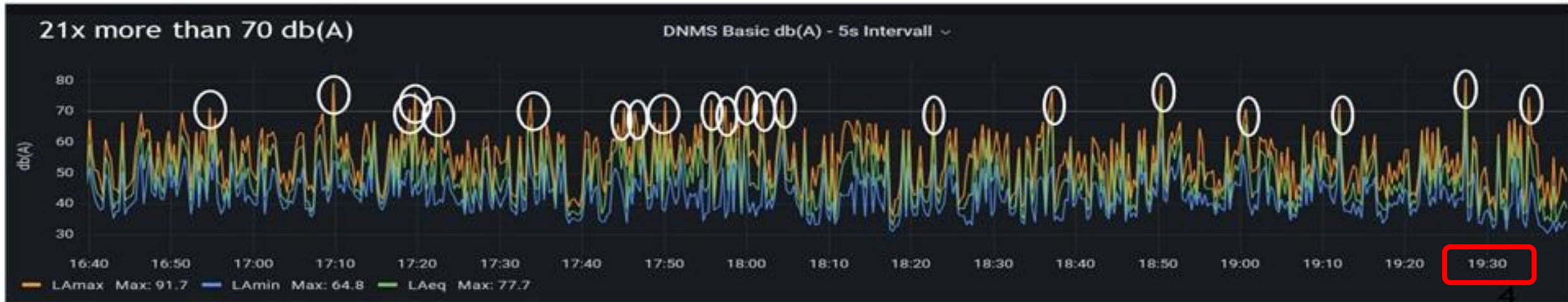
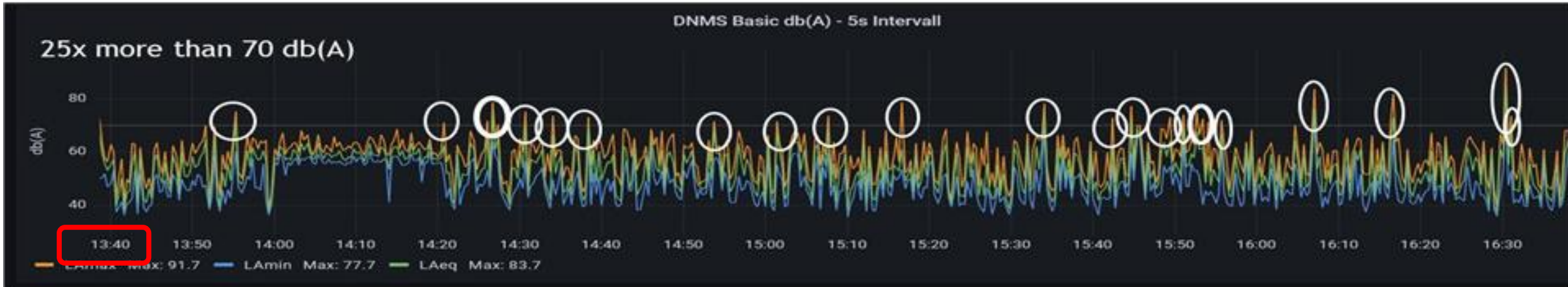


Short introduction

- Today I represent Dutch NEFOM and several other European citizen groups united in S.O.S.
 - **NEFOM:**
 - 120 citizen groups in NL representing
 - > 1 million individuals
 - in >100 cities and villages throughout The Netherlands
 - **SOS:**
 - Save Our Silence, cooperation of approximately 360 citizen groups throughout Europe
- **Ing. Rob Ziere**
 - member of the Board of NEFOM



A sunny day near a touristic route for bikers in a quiet small town in Holland



Source: Measurement with a calibrated sensor in
Haastrecht, at approx. 15 m from road axis
Copyright: NEFOM

Survey results among 60,000 residents of Krimpenerwaard



Bent u het eens of oneens met de volgende uitspraken?

	Aantal reacties (N)	(Helemaal) mee eens	Neutraal	I totally disagree
Ik heb een auto nodig om bij mijn dagelijkse bestemmingen te komen.	1027	52%	21%	27%
Met mijn fiets kan ik alle bestemmingen bereiken die ik dagelijks nodig heb.	999	42%	15%	42%
Ik heb totaal geen last van landbouwverkeer waarmee ik de weg moet delen.	1040	41%	25%	34%
Ik heb totaal geen last van motorvoertuigen waarmee ik de weg moet delen.	1016	26%	27%	47%
I am not bothered by motor vehicles that make a lot of noise	1051	26%	19%	55%
Er is in de gemeente voldoende aandacht voor het mobiel houden van ouderen/mensen met een fysieke beperking.	725	15%	37%	48%
Er zijn genoeg laadpalen beschikbaar.	569	20%	33%	48%
Er is voldoende parkeergelegenheid bij mijn woning.	1036	49%	15%	36%
Ik vind het belangrijk dat mobiliteit duurzamer wordt de komende jaren, met minder CO2 uitstoot.	1003	50%	31%	19%
Ik zou best zonder eigen auto kunnen als er deelautos ter beschikking zijn.	954	15%	13%	73%



Ruim zeven op de tien (73%) deelnemers **niet** zonder eigen auto kunnen, ook als er deelauto's ter beschikking zijn.

De helft van de deelnemers vindt dat je een auto nodig hebt om bij dagelijkse bestemmingen te komen (52%), dat er voldoende parkeergelegenheid bij diens woning is (49%) en/of vindt het belangrijk dat mobiliteit de komende jaren duurzamer wordt (50%).

Ook (ruim) de helft van de deelnemers vindt dat er **niet** genoeg aandacht is voor het mobiel houden van ouderen/mensen met een fysieke beperking (48%), vindt **niet** dat er voldoende laadpalen beschikbaar zijn (48%) en/of geeft aan last te hebben van voertuigen die veel lawaai maken (55%).

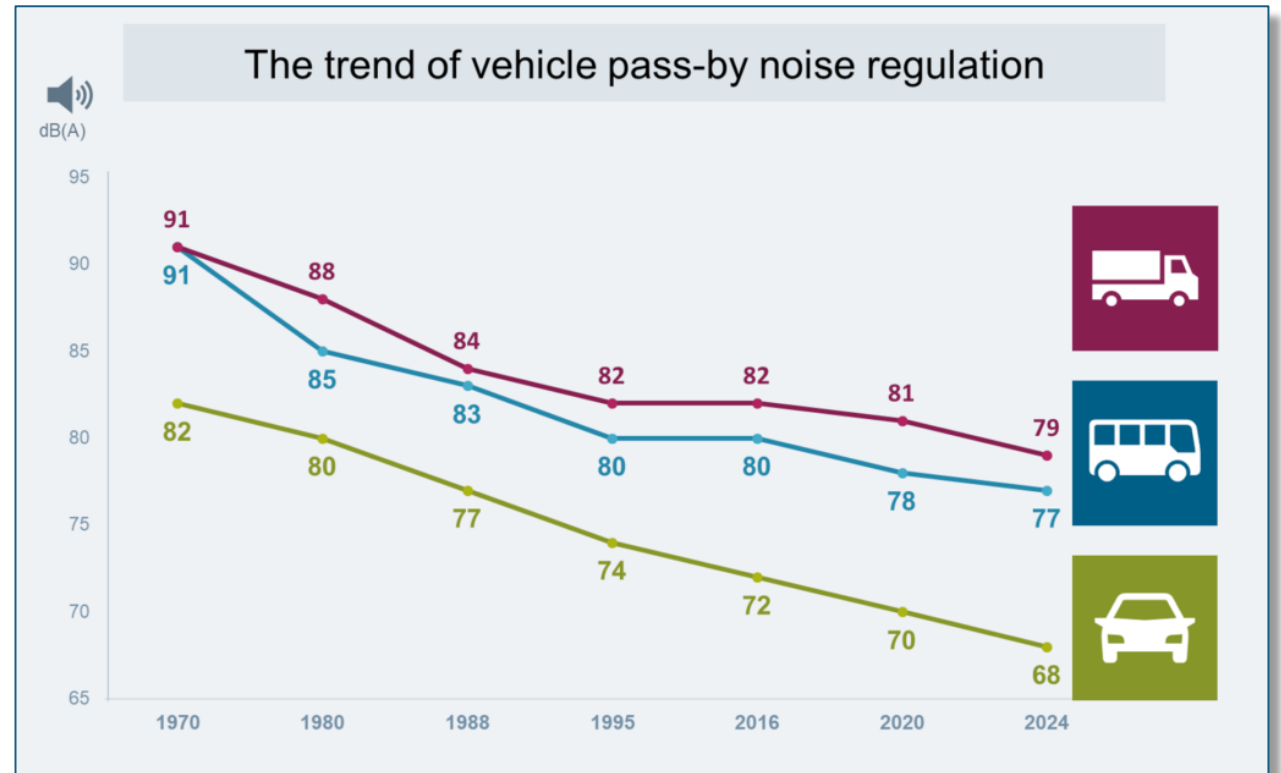
- Deelnemers onder de 65 jaar vinden vaker dat je een auto nodig hebt om op dagelijkse bestemmingen te komen, hebben minder last van landbouwverkeer en motorvoertuigen waarmee zij de weg moeten delen en hebben minder last van lawaai van motorvoertuigen dan deelnemers van 65 jaar en ouder.
- Deelnemers van 65 jaar en ouder vinden vaker dat je met de fiets alle bestemmingen kan bereiken die dagelijks nodig zijn en vinden het belangrijker dat mobiliteit in de komende jaren duurzamer wordt dan deelnemers onder de 65 jaar.

Let op: 'Weet ik niet / geen mening' is niet meegenomen in deze tabel

Sound limits for motorcycles are lagging

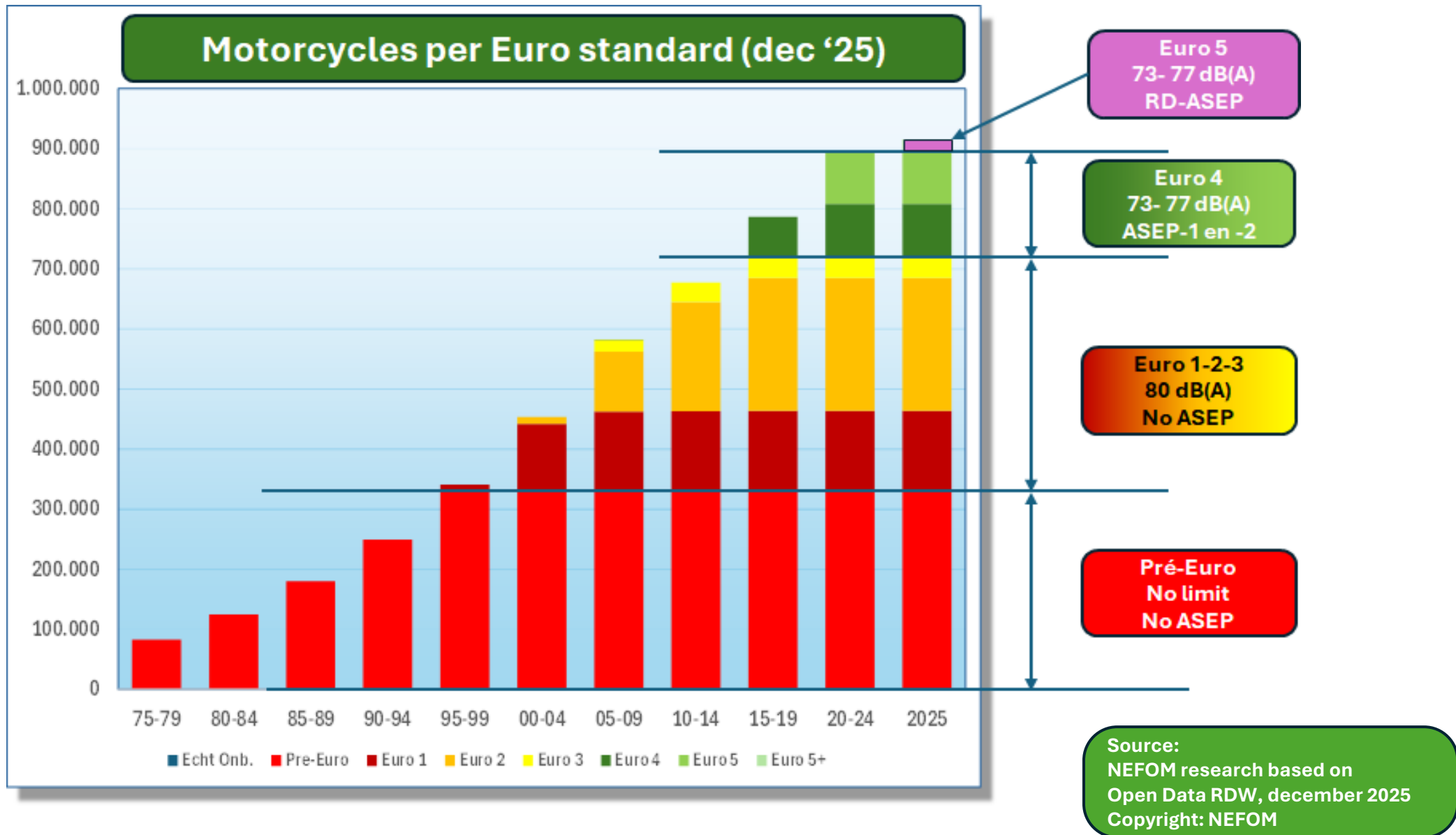
- Sound limits for cars have been tightened several times since 2015
- Sound limits for motorcycles:
 - have not been changed since 2015
 - are still way too high, close to busses and heavy trucks

Max CoC noise levels should be brought down significantly



Source: Siemens Digital Industries Software (Simcenter), 2019

L3/5/7 Fleet composition in The Netherlands



The LENS Project

- The EU LENS project focused on Light Vehicles (LVs), aims were:
 - Develop techniques to measure noise from LVs in practice
 - Make recommendations for regulations for future vehicles
 - Reduce noise & pollution from mopeds, motorcycles, and quads (LVs)
- Scientifically verified measurements performed
 - Leuven, Paris region, Barcelona
 - In total about 2300 measurements and 260 vehicles road-side inspected

- *The LENS project received funding from the European Union's Horizon Europe research and innovation programme under grant agreement no. 10105677*



Road-side inspection procedure (Leuven campaign).

© Åke Sjödin

Source: LENS report , L-vehicles Emissions and Noise mitigation Solutions, 2025
<https://lens-horizoneurope.eu/deliverables/>

Noise limits & testing need further tightening

- Euro 5+ (R041.05): a test that approaches reality better than ever (great!)
- But still not complete: 8 of 9 ‘real driving circumstances’ pointed at by LENS are not in R041.05 yet
- Some now in R41.06 (great!), but this is not EU-law yet
- Limitation of sound level at high rpm is a good step, but up to 100 dB?! No car under R51 is allowed more than 85 dB!!

**RD-ASEP needs further tightening
Max noise level at high rpm should be brought down significantly**

Condition	Vehicle operation	Short name	Already in noise TA?	Remarks
(1) Cold start (mainly for emissions)	Engine start	'coldstart'	No	
(2) rpm burst	Stationary, short activation and release of accelerator	'rpmburst'	No	From idling, 3x 50% max rpm
(3) Acceleration from standstill, G1, G2 Loaded + unloaded	Acceleration, late gear change	'rpmlongacc'	R41.06	
(4) Max rpm passby esp. mopeds, scooters, sports MCs	Constant speed with max rpm	'rpmconthi'	R41.06 ...100 dB?!	
(5) Transition from constant speed or acceleration phases to deceleration phases	Deceleration	'rpmdropoff'	R41.06	
(6) 'Max' acceleration from standstill, G1, G2	Acceleration	'rpmshortacc'	R41.06	
(7) Acceleration at speed, from 50 to 100 kmh	Acceleration, may be varied	'rpmidspeedacc'	R41.06	
(8) rpm fluctuation	Variable speed	'rpmfluct'	No	Accelerator intermittent
(9) Backfire (occurrence, distance not critical)	Multiple gear changing or manual operation	'bang'	R41.06	Condition at which backfire would be most likely

Source: LENS report , L-vehicles Emissions and Noise mitigation Solutions, 2025
<https://lens-horizoneurope.eu/deliverables/>

CoC noise figures do not reflect perception of citizens

The Lens report (slide 1/3)

- General conclusions of the LENS report
 - LVs make a significant contribution to environmental noise in urban and rural environments.
 - Measured noise levels in practice are much higher than type approval
 - Measured noise levels sometimes reach 100 dB(A), measured drive-by
 - About 20% of inspected LVs have had their vehicle tampered with (e.g. "dB killers removed").
 - Tampering significantly increases noise levels and characteristics.

Max CoC noise levels should be brought down significantly



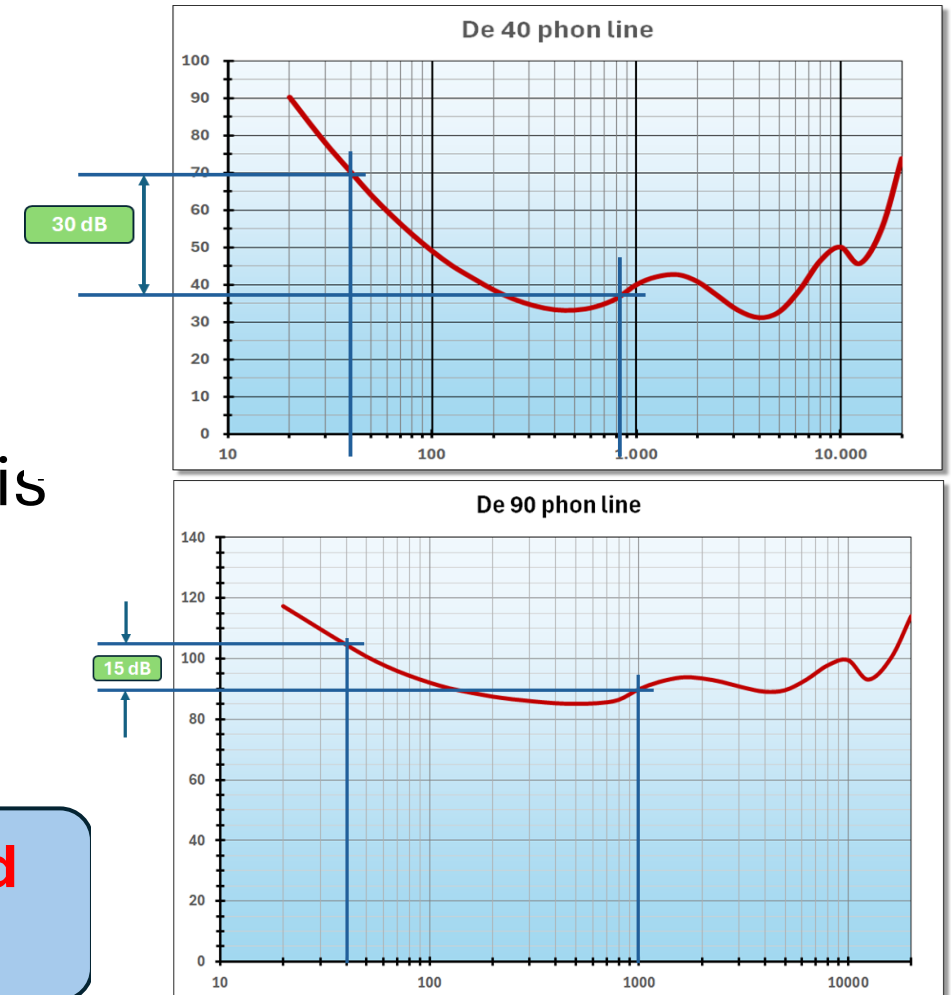
Source: LENS report , L-vehicles Emissions and Noise mitigation Solutions, 2025
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CoC noise figures do not reflect perception of citizens

The A-filter is not suited for 70+ dB (slide 2/3)

- The A-filter correction is designed for noise levels of 40 dB (phon)
- Most motorcycles produce noise levels between 80 and 100 dB (LENS-report)
- At 40 Hz this means perceived loudness is about 15 dB more than CoC's show
- C-filter should be applied, more realistic

C-level filter should be applied, which would cause lower sound level limits < 200 Hz



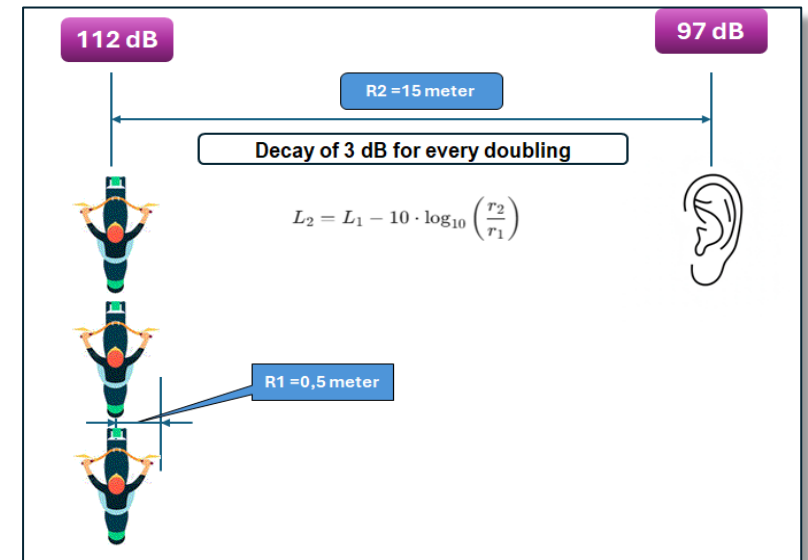
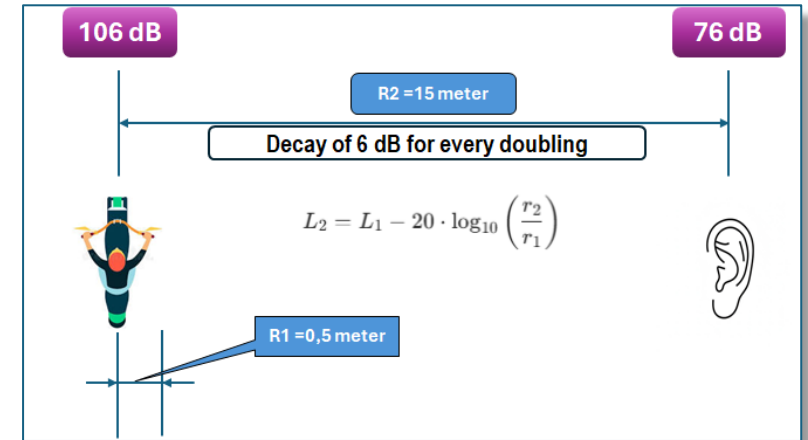
Graphics: NEFOM

CoC noise figures do not reflect perception of citizens

Motor cyclists often ride in groups (slide 3/3)

- The noise from motor cyclists driving in groups is NOT a point source, it's a line source
- Three drivers together is sufficient to create a line source
- Point source: sound level decreases 6 dB / 2 x distance
- Line source : sound level decreases 3 dB / 2 x distance
- Sound level of 106 dB (L_{stat}) is not exceptional
 - One driver (point source) at 15 meter: 76 dB
 - **Three drivers (line source) at 15 meter: 97 dB**

Max CoC noise levels should be brought down significantly



Societal protests are rising

Road closures and sound radars are upcoming

“Research shows that 19% of serious noise pollution in the city is **caused by motorcycles**, even though they make up only a fraction of the traffic. This has a disproportionate impact on the peace, quiet and health of residents”

Municipal Health Service Amsterdam

“Many **people are extremely annoyed** by the noise of motorcycles - motorcycles with modified exhausts cause noise pollution that we want to do something about.”

Amsterdam Alderman for Mobility (Egbert de Vries)

“Noise pollution from motor vehicles with crackling exhausts and roaring engines can **cause significant annoyance, feelings of insecurity, and sleepless nights**. Noise-detecting speed cameras are necessary”

van Groningen and Veltman, Members of Dutch Parliament

“The loud noise of motorcycles [...] **affects the quality of life**, as it makes it less pleasant to spend time outdoors or open the windows”

Barendrecht Council in a letter to the Minister of Mobility

“The city council calls on the Region to “quickly enable **acoustic speed cameras** and develop regulations regarding noise from motorized vehicles.”

Vanden Borre's motion approved by the Brussels City Council

“**A motorcycle tearing through the city in the middle of the night can wake up as many as 10,000 people**. Road noise is the main source of noise pollution in Paris. It weighs heavily on the health of Parisians, who pay a high price, losing an average of eight months of healthy life” Dan Lert, Paris Alderman, Ecology

“75% of the motorcycle drivers are fully aware they are driving a vehicle that **does not meet applicable vehicle regulations**”

Vincent Karremans, Alderman for Enforcement, Supervision and Safety, Rotterdam

“Motorcycle noise constantly causes conflict. In residential and recreational areas, where people seek peace and quiet, motorcycles produce an unbearably loud noise. This is **a major and growing problem for residents and recreational users**”

Winfried Hermann, Minister of Transport of Baden-Württemberg, The Greens

“**Traffic noise can cause serious health problems**. More than 50,000 people in the urban area are “very irritated,” more than 25,000 say their sleep is “extremely disturbed,” and a measurable risk of heart disease has even been identified, with 56 cases attributed solely to road traffic noise”

Linda Gaasch, Luxembourg City Council

“**Close the Biesbosch National Park to motorcyclists!** Residents have regularly requested enforcement from the municipality and the police, but this has had little effect so far. ... 'For the sake of people and animals, serious action must be taken **now!**”

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Party for the Animals, Municipality of Oosterhout

In summary ...

Conclusions

- A really “street-representative” Real Driving test is still not realized
- More than 10 years after the introduction of new sound limits, civilians still experience much higher sound levels than CoC figures suggest
- The A-filter is deceptive, does not represent human perception at > 70 dB sound levels
- Effects of line sources formed by groups of cyclists have never been considered
- Consequence:
 - Road closures for motorcycles enforced by ANPR-cameras
 - Sound radars (Hydra, BruitParif) will fill the gap that’s been left
- ***Motorcyclists will be forced to buy motorcycles with lower noise levels***

Requested actions

- Further improve RD-ASEP
- Replace the A-filter by a C-filter
- Further reduce the sound level limits (more) in line with M-Vehicles
- Consider how long motorcycles stay on the road: act faster!



Questions?

Reactions?

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