

Proposed single AEBS regulation
(document ECE/TRANS/WP.29/GRRF/2011/25)
and its proposed concurrently running 01 series of amendments
(document ECE/TRANS/WP.29/2011/26)

By this document, OICA is keen to correct the formula put forward by the expert from CLEPA in document AEBS/LDWS-14-08.

Correction to the formula:

CLEPA used an incorrect formula for calculating the energy reduction:

$$\text{kinetik energy reduction} \neq \frac{m \cdot (v_0 - v_1)^2}{2}$$

Correct formula:

$$\text{kinetik energy reduction} = \frac{m \cdot (v_0^2 - v_1^2)}{2}$$

m = vehicle mass [kg]

v₀ = initial vehicle speed [m/s]

v₁ = final vehicle speed [m/s]

Vehicle speed [km/h]	80	32	12		68	48
Vehicle mass [kg]	40000	40000	40000		40000	40000
Vehicle speed [m/s]	22,22222	8,888889	3,333333		18,88889	13,33333
Kinetic energy [kJ]	9876,543	1580,247	222,2222		7135,802	3555,556
Reduced kinetic energy (from 80 km/h) [kJ]	0	8296,296	9654,321			
Reduced kinetic energy (from 80 km/h) [%]	0	84%	98%			

OICA Conclusion:

Correct kinetic energy reduction:

Step 1: 8296 kJ, 84% reduction

Step 2: 9654kJ, 98% reduction

Step 2 is 16% better than step1 (Not 100% better)

(9654-8296)/8296 = 16%
