european aluminium association

**POSITION PAPER** **03.03.2008**

The aluminium industry has taken note of the European Commission proposal for a Regulation of the European Parliament and of the Council for setting emission performance standards for new passenger cars (2007/0297(COD)).

The aluminium industry supports the proposed "Utility Approach" for the definition of the $CO_2$ targets for passenger cars. Yet we would like to draw the attention of the European legislators on our concerns regarding the proposed weight-based formula. This formula has serious shortcomings.

A formula based on vehicle footprint represents the best option to achieve the ambitious overall $CO_2$ reduction target and to ensure technological neutrality

## 1. SHORTCOMINGS OF THE PROPOSED WEIGHT-BASED REGULATION

In the present regulation proposal, the formula defining $CO_2$ targets for new passenger cars is as follows:

- permitted specific emissions of $CO_2$ per km = $130 + a \times (M - M_0)$
- where M = vehicle mass in kg, $M_0 = 1289.0$ and $a = 0.0457$

### 1.1. THE FORMULA GOES AGAINST COMMON SENSE

As the mechanical energy required for moving a vehicle is, except for aerodynamic resistance, directly proportional to its mass, the proposal to have $CO_2$ targets dependent on vehicle mass goes against common sense.

The impact assessment document (SEC(2007)1723), accompanying the proposal from the Commission, also clearly states (in Table 8, page 91):
*Mass reduction is a prominent way to reduce $CO_2$. If mass is the parameter, some of its "reduction" potential will be annihilated by a mass based curve.*

### 1.2. THE FORMULA IS NOT TECHNOLOGY-NEUTRAL

Among the technologies that can be used to reduce $CO_2$ emissions of cars, the use of lightweight materials is penalized.

Indeed, when lightweighting a vehicle, the proposed formula reduces the vehicle $CO_2$ target simultaneously so that less than 60% of the actual reduction of $CO_2$ emissions is useful to comply with the regulation. (See annex 1)

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The proposed formula also implies that the discrimination of lightweight technologies will further increase with time, so that in 2012, **no more than 40% of the actual reduction of $CO_2$ emissions through light-weighting will be useful to comply with the regulation**. (See annex 2)

We would also like to remind that light-weight metals have already been penalized by the End-of-Life Vehicles Directive, and now the aluminium industry would be penalized twice. (See Annex 5)

### 1.3. THE FORMULA DOES NOT SECURE THAT THE AVERAGE TARGET OF 130 GRAMS WILL BE REACHED

With the present formula, car manufacturers would be able to meet their $CO_2$ targets without the average target of 130 grams being reached, simply because of a higher average vehicle mass than $M_0$, presently set at 1289kg. (See annex 3)

A mechanism to revise $M_0$ is described in Article 10(2). As it is a non-essential element of the regulation, its application is not certain.

Assuming $M_0$ would be revised according to Article 10(2) and should the autonomous mass increase actually be higher during the period 2010 to 2012 than during the reference period 2006 to 2009, the formula would already be obsolete in 2012.

Furthermore, the impact assessment was considering a reduction of the parameter "a" as a function of the autonomous mass increase, and that revision is totally absent from the proposed regulation. (See annex 4)

Last but not least, the proposed regulation does not contain any measure to revise the formula after 2012 (neither $M_0$ nor “a”), so that the temptation to increase vehicle mass and miss the 130g target will grow further during the period 2012-2015.

## 2. FOOTPRINT IS THE BEST OPTION FOR THE ENVIRONMENT AND TECHNOLOGICAL NEUTRALITY

With the footprint option, the natural $CO_2$ reduction through light-weighting would no longer be watered down and all $CO_2$ reduction measures would have the same value to comply with the regulation.

Furthermore and as stated in the impact assessment (Table 8, page 90 & 91):

- *“Mass is a proxy for other utility parameters”* while *“Footprint is directly linked to the utility*”
- *“Footprint is less likely to be manipulated to follow market trend*s.”
- *“Both parameters result in comparable impacts in terms of relative price increase for manufacturers”*

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## CONCLUSION

There is a clear inconsistency between the impact assessment done by the Commission and the proposed regulation which contradicts the intent of the legislator to reach the $CO_2$ target of 130g/km.

The weight parameter should be excluded of the formula. A new formula based on footprint is the best option for the environment and technological neutrality.

The impact assessment document already contains the necessary elements to choose a formula based on footprint, the latter being defined as vehicle pan area.

## ANNEXES

1. According to various sources (public presentations, impact assessment), reducing the weight of a 2006 car model by 100kg would typically reduce its $CO_2$ emissions by a value somewhere between 8.8 and 11.7 g/km.
Applying the proposed formula, this diet would also mean a reduction of the $CO_2$ target of 4.57 g/km.
In other words, 40 to 50% of the actual progress made to reduce $CO_2$ emissions would be ignored by the regulation.

2. Based on extrapolations for 2012 (impact assessment), a manufacturer reducing the weight of a car model by 100kg would on average reduce its $CO_2$ emissions by a value somewhere between 7.14 and 7.60 g/km.
Applying the proposed formula, this diet would also mean a reduction of the $CO_2$ target of 4.57 g/km.
In other words, 60% of the actual progress made to reduce $CO_2$ emissions would be ignored by the regulation.

3. In case the average vehicle mass would remain stable at 1289kg till 2009 and increase up to 2000kg in 2015, no revision of "$M_0$" or "a" will occur and the regulation would allow average $CO_2$ emissions of 162gr (130+0.0457x(2000-1289)), i.e. a higher value than today's 160.

4. The impact assessment contains a table on page 27 showing what the parameter "a" should be defined as a function of the autonomous mass increase. According to that table, the parameter "a" should be reduced from the proposed 0.0457 down to 0.0428 in case of autonomous mass increase of 1.5%. Not reducing "a" as a function of the autonomous mass increase is equivalent to an increase of the slope of the curve that further deteriorates the light-weighting incentive.

5. The End-of-Life Vehicles Directive penalizes light-weight metals because recycling/recovery targets are defined as a percentage of vehicles mass. Substituting a standard metal by aluminium increases the relative mass share of non-metallic materials that are less easy to recycle and therefore complicate the compliance with the End-of-Life Vehicle Directive.