The Greens | European Free Alliance
in the European Parliament

Putting the brakes on climate change

CO_2 *limit values for cars*

Green demands at a glance

An effective CO_2 reduction strategy must pursue the following objectives:

- An average CO_2 emissions limit value for passenger cars of 120 g/km by 2012 must be set, to be achieved solely by technical improvements to vehicles

- A follow-up limit value of 80 g/km for 2020 must be set now

- The parameters for determining the limit values for the various vehicle types must provide an incentive to cut down on weight

- Financial penalties, for exceeding limit values, must be considerably higher than the cost of CO2 reduction measures

In March 2007, the European Council took a decision to reduce greenhouse gas emissions in the EU 27 by 20% by 2020 or by 30% by 2020 if other countries also cut their emissions. In order to achieve this goal, measures to reduce emissions must be taken in all sectors. The transport sector should not be excepted, **particularly since it is one of the primary generators of greenhouse gases, and the only one of all the sectors where the trend is towards an increase**. With at least 12% of overall CO_2 emissions in the EU coming from passenger cars, clearly tackling the emissions of this sector must be a priority.

1. The Principle of self-regulation did not work

In 1996, the European Commission concluded an agreement with the European Automobile Association (ACEA) under which its members, automobile manufacturers, undertook to cut the average CO_2 emissions of new vehicles to 140 g/km by the end of 2008.

However, the ACEA's member companies have only managed to reduce emissions to around 160 g/km. In September 2007, the European Federation of Transport and Environmental Associations (T&E) reported a particularly poor performance by automobile manufacturers for emissions reductions in 2006: having cut CO_2 emissions by a mere 0.5 g/km in 2006, the ACEA will definitely fail to honour its voluntary undertaking.

2. Only strict CO_2 limit values for 2012 and 2020 can provide real climate protection

A scenario calculation undertaken on behalf of the Green grouping in the European Parliament shows that any departure from the target value of 120 g/km by 2012 would have negative effects on climate policy and the EU's ability to meet its overall CO_2 emissions reduction target for 2020.

Overview of CO_2 limit values and target years

	GREENS	ENVI	COM	ACEA
2012	120 g/km	120 g/km	130 g/km	
2015				130 g/km
2020	80 g/km	80-100 g/km		

CO_2 reduction potential in millions of tonnes per year and accumulated

	GREENS	ENVI	COM	ACEA
in **2015**	45	45	23	10
in **2020**	95	68-95	35	18

In order to meet even the base target of a 20% reduction in CO_2 emissions by 2020, the EU will have to reduce its emissions by around 830 million tonnes[1]. Based on the emissions reduction scenario in the study, **only by setting a 120 g/km limit for 2012 and a strong follow-up limit value in 2020, will the necessary emissions reductions from passenger cars be achieved**, relative to its proportion of overall CO_2 emissions: passenger cars already account for around 12% of overall EU CO_2 emissions. The proposals from ACEA and the European Commission clearly fall far short of what is required.

A reliable legal framework is needed in order to provide the necessary incentive for car manufacturers to push ahead in developing the cars of the future and to speed up innovation in the sector. In addition to the short-term objective for 2012, there is a clear need to set a **medium-term objective of 80 g/km limit value to be achieved by for 2020**.

The scenario calculations show that this is of considerable importance. Setting limits in advance will have a positive effect on the EU's greenhouse gas emissions as early as 2020.

In the long term, the follow-up limit value for 2020 will have had a full effect by 2030, once the entire vehicle fleet meets this standard. By setting a limit value for 2020, the EU would give manufacturers more than enough time to prepare for the necessary technological adaptation. The advancements required to progress towards the 80 g/km limit by 2020 would mean improvements will continue to be made year-on-year until 2020.

3. Stricter limit values are technologically feasible

Even with today's technology, considerably more efficient cars could be produced, which would meet ambitious CO_2 targets. The best mid-class cars in environmental terms already emit lower than 130g CO_2/km[2] on average.

In particular, there is great potential to build lower-consumption, smaller engines using direct injection, based on the new Otto engine. However, up to now, this engine concept has not been used for radically reducing consumption but rather for greatly increasing engine performance and speed.

The German Environment Agency is currently having a Golf model adapted, aiming at reducing its fuel consumption by about one-third. Instead of 7.2 l (corresponding to 174 g/km CO_2 emissions), the adapted car should only use around 4.9 l (corresponding to 116 g CO_2/km) with the same performance.

Considerable consumption reduction can already be achieved using current technologies, for example:

- **Start-stop auto control**, which means that coasting vehicles do not create emissions and braking energy can be fed back in; this alone allows consumption cuts of up to 15%;
- **Downsizing**, i.e. smaller engines with sufficient performance and lower consumption;

[1] Öko-Institut
[2] Verkehrsclub Deutschland VCD: Auto-Umweltliste 2007/2008, Berlin 2007

- **Engine management** with low-consumption transmission, e.g. 6-level gearshift;
- **Improving cold start behaviour** by incorporating heat storage.

Given the current prospects for development in vehicle production, a CO_2 limit value of 80 g/km for 2020 is technically feasible, in particular if electromobility is incorporated. For example, instead of the whole drive train (consisting of combustion engine, gears and right up to the exhaust), there could be a small engine at each wheel, replacing mechanical and hydraulic parts. The lower weight this would entail would lead to lower consumption.

4. The 'integrated approach' is a smokescreen

The European car manufacturers are trying to disguise their very low contribution to climate protection by adopting the 'integrated approach', according to which 10 g/km of CO_2 emissions reductions from passenger cars should be achieved by so-called "additional measures", which require no technological innovation from the car manufacturers.

The integrated approach includes:

- *more efficient driving behaviour:* This approach shifts responsibility onto drivers; methodologically, it is difficult to measure and inspect the consumption reduction due to a different driving style.

- *the use of agro-fuels:* Factoring agro-fuels into limit values for passenger cars is clearly a flawed approach. Based on this logic, manufacturers of electrical equipment could request that efficiency standards for new fridges and washing machines should be lowered on the basis that the energy powering them could come from renewable sources! Moreover, EU leaders have already agreed to a 10% target for the future use of agro-fuels by 2020 and, in the fuel quality directive, the EU Commission has already legally regulated the inclusion of agro-fuels and the adjustments this will require for the automobile industry.

- *Low rolling-resistance tyres:* CO_2 savings from tyres cannot be included, since the standardised tests used to establish CO_2 values are already achieved today using low rolling resistance tyres, indeed even with 3 bar over-inflation. Thus, CO_2 savings from low rolling resistance tyres have already been taken into account today in the CO_2 values of new vehicles in favour of the automobile companies.

Thus the inclusion of supplementary measures, like those outlined above, in order to meet binding limit values for CO_2 emissions is clearly not possible, because of a number of factors, particularly because the contribution they can make is not possible to measure and because they are already accounted for.

5. The CO_2 limit value must provide an incentive for weight reduction and downsizing

Since the beginning of the discussion on limit values for CO2 emissions, the automobile lobby and the politicians who are close to it have been systematically misinforming the public as regards the consequences for certain types of vehicles.

The limit value to be set will not be a value to be achieved by all vehicle types but rather it will be an **average limit value to be achieved by all new cars sold in 2012**. There will be cars that exceed this limit value and others that have lower values. There will be **an individual limit value for each individual vehicle type**. In order to implement this, a parameter must be set which can be applied to all cars.

The **parameter of weight empty**, which is being promoted by the car manufacturers, has the clear disadvantage that it removes the incentive to save weight, since a lower vehicle weight leads to an allocation of a stricter CO_2 value for the car in question. Manufacturers might even be tempted to deliberately make individual vehicle types heavier so that they will be entitled to more CO_2 emissions!

The parameter to be set should relate to the vehicle's transport volume and must encourage a reduction of vehicles' weight when empty. Various possibilities are conceivable. Both the so-called **'footprint'** and **the area or volume of the vehicle** would meet these requirements.

The resulting CO_2 value should not be set in direct relation to vehicle size, however. It should put a greater onus on large cars to achieve reductions than on small cars that are by definition more economical.

6. Only a penalty charge can ensure that target values are met

A critical comparison with other non-compliance mechanisms reveals that the introduction of a **defined penalty charge for each gram by which the CO_2 limit value is exceeded and per car** is the most effective means of actually getting car manufacturers to reduce consumption for new models. This penalty charge should be **higher than the cost of retrofitting the car** (i.e. higher than costs entailed for achieving the necessary emissions reduction). It should be allocated directly to the relevant Member State and used for financing climate protection measures aimed at sustainable mobility.

7. An ambitious CO_2 limit value will safeguard the future of the European car manufacturers and suppliers

A limit value of 120 g CO_2/km for 2012 and 80 g/km for 2020 will place Europe **at the forefront of the world's production regions in terms of energy-efficient technology** and will guarantee jobs in the EU:

- For the European automobile supplier industry - approximately 1 million jobs in the EU automobile sector - because this will quickly create a large market for innovative technology in the EU;
- For employees in automobile assembly - 1.5 million jobs - because it will become more difficult to import cheap cars that fail to meet these standards.