COMMISSION OF THE EUROPEAN COMMUNITIES

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SEC(2009) 1455

COMMISSION STAFF WORKING DOCUMENT

SUMMARY OF THE IMPACT ASSESSMENT

Accompanying document to the

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

Setting emission performance standards for new light commercial vehicles as part of the Community's integrated approach to reduce CO_2 emissions from light-duty vehicles

{COM(2009) 593 final}
{SEC(2009) 1454}

1. PROBLEM DEFINITION

The overarching problem as identified in the earlier Communications (revised strategy on CO_2 and light-duty vehicles[1], impact assessment on the CO_2 and cars proposal[2]) is that the existing policies to reduce CO_2 emissions and improve fuel efficiency of new cars sold in the EU have not been able to deliver the progress needed for reaching the long-standing EU objective of an average new light duty vehicles fleet CO_2 emission of 120 g CO_2/km.

The revised strategy COM(2007) 19 announced that the Commission would propose a legislative framework to achieve the Community target of 120 g CO_2/km. A key element of the strategy consists in legislation on the CO_2 emissions of passenger cars which was agreed in co-decision in December 2008, reducing the CO_2 emissions of passenger cars to 130g/km on average. The strategy identifies additional measures to achieve a further reduction of CO_2 emissions by 10 g/km (the integrated approach). New legislation to reduce the CO_2 emissions of Light Commercial Vehicles (LCVs) is one of these measures. In view of the increasing share of LCVs in the European fleet, lack of efficiency measures for these vehicles would put at risk the full achievement of objectives of the revised strategy, including the objectives of the regulation on CO_2 from passenger cars.

An extensive discussion on the appropriate policy instruments that should be used to improve fuel efficiency and performance in terms of CO_2 emissions in light duty vehicles already took place in the context of the Commission's Communications and in the proposal for a regulation on CO_2 emissions from cars. The conclusion of this discussion was that voluntary agreements with industry did not bring the expected outcome and that a regulatory approach was the best solution to tackle the problem of rising CO_2 emissions from light-duty vehicles.

The EU is committed to reduce its total greenhouse gas emissions by 2020 by 20%, or by 30% if a comprehensive international agreement is reached. It is clear that all sectors have to contribute to the reduction effort. The emissions from LCVs represent around 1.5% of EU total CO_2 emissions and the demand for LCVs is growing. It is imperative that growing emissions from LCVs do not counter balance the effort made in other transport modes and sectors of the EU economy. Moreover, further to the adoption of the regulation on CO_2 from passenger cars there is a strong rationale for regulating other sectors of road transport, also in order not to create a potential regulatory gap where larger and highly emitting passenger cars could avoid the target. For these reasons, the business as usual option has been discarded from further analysis.

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1 COM(2007) 19.
2 SEC(2007) 1723.

2. OBJECTIVES

2.1. Policy objectives

The general policy objectives applicable for the legislative proposal on light commercial vehicles are very similar to those developed for the CO_2 and cars proposal, that is:

- Providing for a high level of environmental protection in the European Union and contributing to reaching the EU's climate change targets;

- Reducing oil consumption and thus improving the security of energy supply in the EU.

The specific objective covers:

- To reduce the climate change impacts and improve the fuel efficiency of light commercial vehicles by means of a specified emission reduction for new vehicles in line with the revised strategy COM(2007) 19.

The operational objectives include:

- Designing a legislative proposal that efficiently implements the fleet average emissions target for new LCVs and prevents any regulatory gap which could undermine the effectiveness of the regulation on CO_2 and cars;

- Making the legislation compatible with the regulation on CO_2 and cars for reasons of simplification; and

- Providing a regulatory framework that avoids any unjustified distortion of competition between automobile manufacturers.

2.2. Consistency with horizontal objectives of the European Union

The policy objectives promote innovation and technological development, enabling the EU industry to achieve global leadership in the field of fuel efficient technologies in view of oil scarcity and of fuel efficiency legislation in other countries, contribute to the Growth and Jobs agenda and promote highly qualified jobs in Europe. The policy objectives are in line with the Renewed Sustainable Development Strategy spelled out in June 2006 by the European Council which unanimously reconfirmed[3] that "*in line with the EU strategy on CO_2 emissions from light duty vehicles, the average new car fleet should achieve CO_2 emissions of 140g/km (2008/09) and 120g/km (2012)*". In addition, the objectives of the proposed Regulation to reduce CO_2 emissions from light commercial vehicles (in addition to the legislation on cars) will have important share in the GHG reduction in the non-ETS sector as required in the Effort Sharing Decision.

[3] Renewed EU Sustainable Development Strategy, June 2006.

3. POLICY OPTIONS

The supporting study on light commercial vehicles analysed the target levels set in the revised Strategy on CO_2 emissions from light duty vehicles, that is: 175 g/km target in 2012 and 160 g/km target in 2015. However, further to the major developments since the publication of the revised Strategy, i.e. improvement of available dataset and agreement of the Regulation on CO_2/cars (with new target dates), an alternative date of introduction from the range 2013 to 2015 is also considered. The second step of 160 g/km envisaged in the Strategy was discarded as unrealistic in the 2015 time horizon, and thus is considered as part of the discussion on an additional target for 2020.

The impact assessment analyses the following policy options:

Option 1- 175 g/km target in 2012 with mass as utility parameter;

Option 2- 175 g/km target in 2013-2015 with mass as utility parameter

Option 3- 175 g/km target in 2012 with pan area as utility parameter;

Option 4- 175 g/km target in 2013-2015 with pan area as utility parameter;

Option 5- percentage reduction targets considered for both 2012 and 2013-2015.

All the above options are also assessed in view of the slope of the utility curve and autonomous mass increase (AMI) of 0% and 1.5%.

In terms of flexibility mechanisms, the options of fleet averaging by individual manufacturers, averaging amongst manufacturers of LCVs (pooling), as well as between both passenger cars and LCVs are examined.

Following the approach taken in the impact assessment for regulation on CO_2 from passenger cars, the excess emissions premium has been identified as being the most suitable way of enforcing the regulation. The level of premium is of crucial importance for the effectiveness of the scheme. In line with the regulation on CO_2 from passenger car, the premium should be consistent with the marginal CO_2 abatement cost.

Finally, the additional target for 2020 (the long-term target) complementing the short term options listed above is analysed. Further to the analysis performed by the consultant, the emissions levels from the range 125 to 160 g CO_2/km have been identified as potential future targets for LCVs.

4. ANALYSIS OF IMPACTS

4.1. Economic impacts

The distributional analysis of options listed above leads to conclusions that the utility parameter based on pan area (**option 3** and **4**) is less cost-effective than the mass-based parameter (**option 1** and **2**). A serious drawback of pan area-based parameter is that the distributional impacts are much more spread out than in case of a mass-based utility. The individual targets for some manufacturers become more stringent for pan area as

compared to mass. Also **option 5**, despite the lowest average costs and the most even distribution of reduction effort between manufacturers, proves to have serious drawbacks of penalising past effort to reduce CO_2 emissions (discouraging early introduction of measures to reduce CO_2 emissions) and creates difficulties in defining the target for new market entrants.

Utility curves with lower slopes, i.e. 0% to 40% seem less suitable for LCVs than for passenger cars where perverse incentives of increasing weight in order to gain a less stringent target are of greater importance. Light commercial vehicles are used to transport goods therefore there are fewer incentives to make them heavier. Also market shifts on the LCV market are usually not driven to the same extent by such incentives as luxury or increased comfort. Therefore, it is concluded that the risk of perverse incentives in LCVs is limited, and a higher slope than the one used for passenger cars can be applied.

A comparison of slope variants for limit functions of all options shows that the sales-weighted average retail price increase per vehicle is lower for higher values of the slope, although the difference in average costs is not very significant. The most even distribution of retail price increase is observed between 100% and 120% slopes. However, even though the risk of perverse incentives of increasing the mass of vehicles to receive less stringent targets in LCVs is regarded as low, the slope of 120% is more likely to provoke these adjustments than the **100% slope**.

Further to the analysis conducted in the impact assessment on CO_2 from passenger cars, an account of possible future developments (increase of the mass) of the market for light-commercial vehicles is taken. The **autonomous mass increase** (AMI) set at the level greater than 0% increases the cost of meeting the average target and makes it more difficult for certain manufacturers to meet their targets. In view of a less significant probability of increase of mass of LCVs, a zero autonomous mass increase is therefore considered as the most suitable for this category of vehicles.

The analysis of cost-effectiveness for the short-listed options (mass-based utility parameter) concludes that in case of zero AMI the emissions reduction target of 175 g/km for light commercial vehicles is cost effective to society (i.e. the abatement costs are negative) at both, 60% and 100% slope. Costs to society become negative at oil prices ranging from 50 to 54 €/bbl and above. The difference between the two options is negligible in terms of costs to society and CO_2 abatement costs. The overall amount of CO_2 saved is slightly lower in the options with a later start date (2013-2015), because of the delay in the implementation of the target. The analysis of fuel price sensitivity shows that if the fuel prices decrease by half, the GHG abatement costs will be positive for 60% and 100% slope respectively (€12.9 – €15.7 per tonne CO_2 eq.) as the higher purchase costs will not be fully offset by the fuel savings. However, even in this unfavourable case they are within the range of the EU ETS price as well as being comparable to the abatement costs for cars as presented in the CO_2 from cars impact assessment.

4.2. Social impacts

The assessment of the costs to the society revealed that the retail price increase of vehicles will be compensated by the fuel savings over the lifetime of the vehicle.

The regulation on CO_2 from LCVs is not expected to have a significant impact on employment. The potential impacts will be similar to those expected for passenger cars

however, as the light commercial vehicles constitute only 10% of the automotive market, the share in the overall employment will be proportionally lower.

The demand for light commercial vehicles is less elastic than in case of passenger cars and an increase in the retail price resulting from the legislation is expected to have a marginal impact of less than 1% on LCV sales by 2020 compared to the base case, and decrease by less than 2,7% in 2030.

4.3. Environmental impacts

The average emission reduction for the 2010-2020 in **option 1** is about 67-77 million tonnes, with savings being slightly higher at the 100% slope. The CO_2 reduction delivered in **option 2** in 2020 amounts to about 60 million tonnes. The difference between the options is caused by the fact that the target of 175 g/km will be achieved later than in **option 1**.

The introduction of a **long-term target** from the range of 125-160 g/km in 2020, in addition to the short-term target, allows for cumulative savings of 59-82 Mt CO_2 eq. from 2010 to 2020 depending on the chosen scenario (i.e. combination of short- and long-term targets) and 247-342 Mt CO_2 eq. from 2010 to 2030.

A reduction in the GHG emissions from LCVs for option 2 in year 2020 corresponds roughly to around 4% of the total reduction effort under the decisions of European Parliament and of the Council on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020. This is lower than 4.4% for option 1 which is due to the later implementation of the target. The introduction of the long-term target increases the non-ETS effort share of light-commercial vehicles to 5-6%.

5. COMPARING THE OPTIONS

5.1. Comparison of the two options

<table>
<tr><th></th><th>Option 1
Mass-based utility
Target year – 2012
Slope: 60% - 100%</th><th>Option 2
Mass-based utility
Target year – 2013-2015
Slope: 60% - 100%</th></tr>
<tr><td>Environmental impacts (i.e. CO_2 reductions)</td><td>☺
67 to 77 Mt CO_2 eq. until 2020</td><td>😐
At least around 60 Mt CO_2 until 2020</td></tr>
<tr><td rowspan="2">Average compliance costs (expressed as relative retail price increase for 60%-100% slope)</td><td colspan="2">5,4% - 5,8% per vehicle
The cost of meeting this target for both start dates is similar if zero AMI increase is assumed</td></tr>
<tr><td>7.9% - 8.3% per vehicle</td><td>9.5% - 9.9% per vehicle</td></tr>
</table>

	Option 1 **Mass-based utility** **Target year – 2012** **Slope: 60% - 100%**	**Option 2** **Mass-based utility** **Target year – 2013-2015** **Slope: 60% - 100%**
	Higher cost results from the need to compensate for the autonomous mass increase of 1.5% (AMI=1.5%)	Higher cost results from the need to compensate for the autonomous mass increase of 1.5% (AMI=1.5%)
Cost-effectiveness	☺ -13.5 to -10.2 €/ton CO_2 eq.	☺ Around -13.5 €/ton CO_2 eq.
Other economic impacts (incl. competitive neutrality)	😐 The slope of 60% makes it very challenging for some manufacturers producing larger vehicles (class III) to meet their respective targets. The slope of 100% gives a more even distribution of costs over different manufacturers and on average a lower cost of compliance for the industry. The start date of 2012 is very challenging and does not leave enough lead time for manufacturers to adjust their production cycles.	😐/☺ Concerning slope and costs this option has similar characteristics as option 1. However, it provides manufacturers with more time to respond to the requirements of the legislation.
Other economic impacts - impact on businesses including SMEs	☺ Light Commercial Vehicles are mostly used by commercial enterprises including SMEs. At both slopes there are net benefits to the vehicle operator.	☺ At both slopes there are net benefits to the vehicle operator. Option 2 also offers net benefits per vehicle to the vehicle operator in the same order as option 1.
Social impacts (employment)	☺ The higher added value on the vehicle is likely to lead to more employment along the value chain (similarly to effects of CO_2/cars	☺ The higher added value on the vehicle is likely to lead to more employment along the value chain (similarly to effects of CO_2/cars

	Option 1 Mass-based utility Target year – 2012 Slope: 60% - 100%	Option 2 Mass-based utility Target year – 2013-2015 Slope: 60% - 100%
	regulation). The adverse impacts on the sales of new vehicles are estimated to be very small: -0.69% to – 1.33%	regulation). The adverse impacts on the sales of new vehicles are estimated to be very small, around -1%.

Option 2 seems to be **the most promising** with an assumption of **zero AMI** and a **100% slope** of the utility curve. The introductory date from the range 2013-2015 provides manufacturers with more time to meet the regulation however CO_2 savings are higher for earlier dates. The excess emissions premium should be set at the level of the marginal cost of abatement of € 120/g to ensure compliance. Finally, the long-term target of **135 g/km by 2020** would be comparable to the target of 95g/km set for emissions from passenger cars and should be taken forward as a second step of the reduction effort.