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Automotive

Consultation on Euro 5 emission limits for light duty vehicles

Contributions to the stakeholder consultation on Euro 5 emission limits for light duty vehicles

The document below contains the contributions received in reply to the Public Consultation. All contributions are published complete and unedited. There is also a summary of the results.

Contributions to the consultation  [3 MB]

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Stakeholder Consultation: Euro 5 emission limits for light duty vehicles - Contributions

This document contains the contributions received in reply to the [Stakeholder Consultation](#). All contributions are published complete and unedited.

Contributions (in alphabetical order)

- Alliance for the Freedom of Car Repair (AFCAR)
- Afton Chemical Ltd.
- Association des Constructeurs Européens d'Automobiles (ACEA)
- Association for Emissions Control by Catalyst AISBL (AECC)
- Association of International Motor Vehicle Manufacturers (VDIK)
- Automotive Industry Association of the Czech Republic (AIA CR)
- Autorités françaises
- Autotuojat ry (The Association of Automobile Importers in Finland)
- Ärztinnen und Ärzte für eine gesunde Umwelt (ÄGU)
- BIL Sweden
- Boehme, Dietrich
- Comité des Constructeurs Français d'Automobiles (CCFA)
- Danish Environmental Protection Agency
- Department for Transport (UK)
- Dutch Ministry of Environment and Dutch Type Approval Authority (RDW)
- European Association of Automotive Suppliers (CLEPA)
- European Conference of Ministers of Transport (ECMT/CEMT)
- European Council for Motor Trades and Repairs (CECRA)
- European Environmental Bureau (EEB)
- European Environmental Citizens' Organisation for Standardisation (ECOS)
- European Federation for Transport and Environment (T&E)
- European Federation of Associations of Environmental Professionals (EFAEP)
- European Natural Gas Vehicle Association (ENGVA)
- Fédération Internationale de l'Automobile (FIA)
- Ford
- Gemeentewerken Rotterdam - Public Works Rotterdam
- German Automobile Club ADAC e.V
- Groupe de travail des Stratégies et de l'Examen au sein de la Convention LRTAP
- Hyundai Motor Europe Technical Center GmbH and KIA Motors Corporation
- Italian Ministry of Infrastructure and Transport
- Japan Automobile Manufacturers Association, Inc. (JAMA)
- Land Berlin - Senate Department for Urban Affairs/ Protection of the Environment
- Lemaire, Jacques
- LTI Vehicles
- Mezaparks Neighbourhood Association
- Motor Vehicle Manufacturers Association of Italy (ANFIA)
- OEKOBUEO - Koordinationsstelle österreichischer Umweltorganisationen
- Sales, Maurici
- Society of Motor Manufacturers and Traders (SMMT)

- Stichting Natuur en Milieu and Vereniging Milieudefensie
- Swedish Environmental Protection Agency (SEPA)
- Swedish Gas Association (SGF)
- Swedish NGO Secretariat on Acid Rain
- Swedish Society for Nature Conservation
- Swiss Federal Roads Authority and Swiss Agency for the Environment, Forests and Landscape
- Umweltbundesamt GmbH
- Verband der Automobilindustrie e.V. (VDA)
- Verkeer en Leefomgeving
- Volvo
- Wirtschaftskammer Österreich

AFCAR - Alliance for the Freedom of Car Repair in the EU

AIRC * CECRA * EGEA * FIA * FIGIEFA

Commission stakeholder consultation on the

Preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of atmospheric pollutants from motor vehicles (EURO 5)

Comments of AFCAR

AFCAR¹ would first of all like to thank the European Commission services for the opportunity to comment on the preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of atmospheric pollutants from motor vehicles (EURO 5).

AFCAR welcomes in principle the objective of the proposal to lay down harmonised rules on the construction of motor vehicles with a view to ensuring the functioning of the internal market while at the same time providing for a high level of environmental protection regarding emissions of atmospheric pollutants.

However, AFCAR is concerned about the lack of, or inadequate, provisions for effective and competitive aftermarket care in the preliminary draft Euro 5 proposal in Article 4 (3).

Hence, specific provisions for access to technical information for independent market operators and for ensuring the development of replacement components and generic tools were included, also at the express wishes of the European Parliament, with the intention

- to maintain effective competition in the automotive aftermarket and thereby free consumer choice and affordable mobility;
- to ensure functionality and environmental compliance throughout the life of the vehicle;
- to protect the thousands of SME companies and more than 3,5 million European employees of the automotive aftermarket, and
- to reduce the cost burden of environmental legislation through free competition in the supply of aftermarket care;
- to uphold the residual value of vehicles by ensuring their ongoing compliance and reparability.

AFCAR is concerned about the proposal to repeal Directive 70/220/EC and its twenty adaptations and rectifications as mentioned in Article 12 without making clear that all principles and technical provisions required for *effective and competitive aftermarket care* are covered in the new Euro 5 Regulation.

¹ **AFCAR** (Alliance for the Freedom of Car Repair in the EU) is an alliance of independent European associations. Its objective is to maintain free competition in the automotive aftermarket. **Members of AFCAR** are **AIRC** (Vehicle Body Repairers), **CECRA** (Motor Traders and Repairers), **EGEA** (Garage Equipment Association), **FIA** (Tourism and Motorist Clubs) and **FIGIEFA** (Independent Automotive Aftermarket Distributors).

AFCAR therefore invites the European Commission:

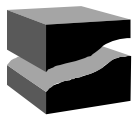
- 1) To provide for the unrestricted access to technical information for independent operators and to include all provisions already laid down in the OBD-Directive 98/69/EC into the new Euro 5 Regulation. To make unrestricted access to technical information *workable in practice*, and to require therefore that the information must be presented according to the standardised meta-data tagging structure developed with all stakeholders under the auspices of DG Enterprise.
- 2) To make sure that the development of replacement components and generic tools is not restricted due to the unavailability of pertinent OBD-related information. Therefore, the commission should incorporate into the new Euro 5 Regulation all provisions relating to the 'parts compatibility requirements' already laid down in the OBD-Directive 98/69/EC and more specifically in Directive 2002/80/EC.

and

- 3) To update these provisions and to adapt them to the needs of modern repair to cope with growing vehicle complexity. This updating exercise should take account of pertinent EU legislation in the field of competition law and international standards, and it should ensure consistency with world-wide requirements.

AFCAR would be pleased to see its suggestions incorporated in the official Commission proposal on a EURO 5 Regulation.

* * *



ACEA

Response to Stakeholder Consultation – Euro 5 Emission Limits for Light Duty Vehicles

Summary:

The ACEA response addresses a number of issues which are summarized below and addressed in more detail in the subsequent sections concerning specific parts of the stakeholder consultation document.

Timing

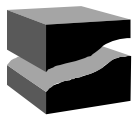
- The Commission proposes that the regulation comes into force 18 months after entry into force; this could, depending on the political process, introduce Euro 5 for new type approvals as early as mid 2008. Industry reminds that a 3 year minimum period is required for industrial development and that it has planned along with its supply base to introduce Euro 5 as from 2010 as indicated in the Commission Communication on Incentives early in 2005; earlier pull ahead is not possible. The proposed regulation should confirm January 2010 or 36 months after entry into force of this Regulation (new types and 1 year later for all new registrations), whichever is later. It is imperative that this lead time is maintained following the confirmation of the associated technical requirements (i.e. publication of the complementary comitology Regulation). A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Compression Ignition Measures

- The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x after-treatment system is not mature enough to comply with levels lower than 200 mg/km.
- ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance protocol due to test measurement and laboratory variability. ACEA does not believe a new method based on particle number would bring any added benefit.

Spark Ignition Measures

- The proposed spark ignition NO_x limit of 60mg/km is a 25% reduction against Euro 4. It is widely acknowledged that spark ignition vehicles are already clean and efficient and further measures are unnecessary. A further reduction is not a cost effective measure to improve air quality. The proposed 25% reduction in hydrocarbons (i.e. HC = 75 mg/km) is also an unnecessary and unjustified extra burden on industry in general and specifically for vehicles equipped with DI and CNG engines.



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Heavy M1

- The Commission proposes to remove the provision for M1 vehicles over 2500kg to meet N1 emission limits. For these diesel engined vehicles, to meet passenger car limits, will either require NOx aftertreatment or, if such technology is not mature, a switch to gasoline engines with an associated negative impact on fuel economy. The majority of these vehicles are designed to have a greater utility and / or off road capability, and this should be part of the requirement. ACEA would support limiting the use of this provision to vehicles designed and equipped to mount 7 or more seats and/ or off road capability. The latter can be defined as per the definitions in the framework Directive. Motor-caravans and other special purpose vehicles should also be included in this provision.

Durability/Compliance

- ACEA welcomes the retention of in service emissions testing at 100,000 km or 5 years. The draft proposal extends durability to 160,000 km. A durability demonstration is mentioned, the detail of which is unclear and open to interpretation. There is no justification for further regulation in this area and as such this provision should be deleted.

1. Explanatory Memorandum

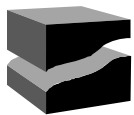
With reference to the “preliminary draft proposal for a Regulation of the EP and Council relating to the emissions of atmospheric pollutants from motor vehicles (Euro 5)” recently published on the DG ENTR web-site, ACEA would like first to address the comments made in the explanatory memorandum, with reference to the following subjects:

- Split level approach
- Clean Air for Europe (CAFE)
- Compression Ignition Measures
- Spark Ignition measures
- Particle number measurement
- Durability
- Heavy Passenger Cars

Split level approach

Although the reasons for the new regulatory approach (the split-level approach) described in section 2 are understood, it is not absolutely clear which details will be included in which of the two documents i.e. the co-decision and the comitology proposals. It is therefore difficult to comment on any omissions from this preliminary draft proposal without seeing a draft of both proposed Regulations. ACEA believes that the rules under which the split approach will operate should be defined in advance.

The process of development of this new legislation must be conducted for both proposed Regulations in parallel.



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Clean Air for Europe (CAFE)

The explanatory memorandum states in the last paragraph of section 3:

“The “Clean Air For Europe” (CAFE) programme provided the technical basis for the preparation of the Thematic Strategy on air pollution. CAFE assessed emissions, current and future air quality and the costs and benefits of further measures to improve air quality”.

On this basis, the Commission will identify the measures which are required in order to attain the necessary air quality levels. Euro 5 is one among several such measures that are important to reduce NOx and particulate matter emissions. “

In fact, due to the delay in the availability of cost and effect data from DG Enterprise, DG Environment was forced to use data from another source very late in the process. These data have been shown to be incorrect and have resulted in major underestimation of costs for further vehicle measures. Furthermore, due to the time pressure, there has been no proper cost-effectiveness analysis with respect to road transport measures as only one set of assumptions for vehicles has been used for all scenario runs.

The automotive industry has been supportive of the CAFE process in the belief that proposals supported by solid facts would be accepted by the other EU institutions without delay. ACEA urges the Commission to update the Thematic Strategy on Air Pollution by including additional vehicle scenarios with the costs agreed by the DG ENTR panel and to take this update into account in redrafting the Euro 5 proposal.

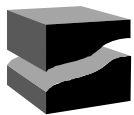
Compression Ignition measures

The proposed diesel passenger car NOx limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NOx after-treatment system is not mature enough to comply with levels lower than 200 mg/km.

Furthermore, there is a trade off between NOx emission levels and fuel consumption.

ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance test protocol due to test measurement and laboratory variability even with the draft new PMP mass measurement method as the quality control for the test facility may be outside the control of the vehicle manufacturer.

Testing for these technologies requires much extended test duration by nature of the regeneration process compared to non-regenerating technologies; the development and certification workload is therefore significantly increased for manufacturers and the technical services regardless of limit for these technologies.



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ACEA notes the document refers to the need to recalibrate the PM mass emission limits set out in this proposal when the new measurement procedure is implemented. The correlation of the two methods will require a European study across a number of different laboratories using a wide range of vehicles. This type of exercise is not planned within the PMP activities.

Spark Ignition measures

In section 4, the first paragraph states:

“The main aspect of this Regulation is that it requires a further tightening of vehicle emission limits for NOx and particulate matter.”

The proposal then goes on to reduce the limit for hydrocarbon and NOx emissions from vehicles with a positive ignition engine by 25 %, which is definitely not a minor step. The Auto Oil II program findings and CAFE do not support any further reduction of hydrocarbon emissions on account of air quality. No gasoline scenario was identified as maximum technical feasible reduction scenario.

The major challenge, which engineers are facing today, is improving the fuel consumption of positive ignition engines. This is a sine qua non objective for meeting the commitment on CO₂ emission reduction, whilst these vehicles contribute to less than 10% of the total road transport NOx emissions.

Lowering NOx emissions hinders lowering fuel consumption at the same time. The proposal is in contradiction with the principle that new policy proposals are to be assessed in terms of their consistency with existing and other pending measures (ref. CARS-21.Rev. 1 prepared by the SHERPA group and agreed on 4 July).

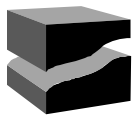
Lowering total HC emissions will impose an unattainable burden to CNG vehicles against the 5% substitution target of the Commission communication on alternative fuels (Nov 2001). As a matter of fact, if the HC reduction is confirmed, it will be no more possible to produce and put on the market CNG vehicles. It is also an extra burden for vehicles equipped with a DI lean-burn spark ignition engine.

The proposal to apply a PM = 5mg/km limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not mature and requires more time to meet such a limit.

Particle number measurement

Also in section 4, paragraph 4 states:

“To prevent the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass, it is foreseen to introduce at a later stage a new standard limiting the number of particles that can be emitted. At the moment, it is not appropriate to define a number standard as



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research is being conducted at the UN/ECE - the Particulate Measurement Programme (PMP) - and is still examining this issue. Once the results of the PMP programme are available, a number standard will be implemented through Comitology."

Previous stages of the UN/ECE PMP have demonstrated the correlation between particle mass and particle number, thus negating the justification for the enormous cost of introducing a particle counting requirement throughout the type approval and conformity systems. This correlation is also recognized in the proposed Regulation which states in a footnote to Table 1:

"The standards would be set so that they broadly correlate with the petrol and diesel mass standards."

ACEA will comment further on the subject of particle count in the response to the relevant proposed Regulation when it is published. This subject is however under discussion within the UN-ECE and such investigations should not be doubled.

Durability

The penultimate paragraph of section 4 states:

"A further change is the proposal that the durability period over which manufacturers must ensure the functioning of pollution control devices has been extended from 80,000 km to 160,000 km. This change is to more realistically reflect the actual life of vehicles and ensure that emission control systems continue to function throughout the life of the vehicle."

The **160,000 km durability requirement** introduces an additional, impractical burden not evaluated within the Thematic Strategy on Air Pollution. A durability demonstration at the time of type approval is mentioned, the detail of which is unclear and open to interpretation. Additionally, this is equivalent to further tightening of the standards in a non-transparent way as the air quality and cost-effectiveness models are unable to take account of such scenarios.

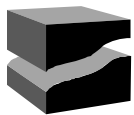
Heavy Passenger Cars

The final paragraph of section 4 states:

"A final aspect is the removal of the exception in previous legislation which enabled heavy passenger vehicles (Class M1, over 2500 kg) to be type approved as light commercial vehicles. There is no longer seen to be any justification for this exemption. "

ACEA believes that there are vehicles of category M1 that certainly justify the same considerations which apply to light commercial vehicles.

The first group is vehicles with 7 or more seating positions. These vehicles fill the social needs of large families (they provide an environmentally attractive alternative to the use of 2 "normal" passenger cars) and of dedicated transport functions e.g. shuttle buses, minibuses, large taxi cabs. The packaging of 7 or more seats however necessitates the



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design of a heavier and often higher and/or wider vehicle with specific gearing, and hence slightly higher emissions. Motor caravans and other special purpose vehicles (e.g. ambulances, first-aid) also need to be considered under the same argument.

The second of these groups is off-road vehicles with a maximum mass of more than 2,5 tons. These vehicles are an essential tool in rural communities throughout the world as well as for rescue and recovery services, public utility companies and many other essential applications and thus their specific needs are accounted for in many of the world's major legislative systems. A definition already exists in the Framework Directive which requires approach, departure and ramp angles as well as ground clearances that are greater than those employed on standard cars. Compliance with these requirements, all of which are essential to off-road usage, along with the additional drive train losses of four wheel drive and often a secondary transmission, produces a vehicle with higher total loading, physically larger size akin to light commercial vehicles and hence again slightly elevated emissions.

The segment volumes of these vehicles are very low and the slightly elevated emissions if given the same provisions as light commercial vehicles (LCV) are negligible in terms of the overall traffic emissions and hence impact on air quality. Such measures can not be evaluated in air quality models as they would fall well below the sensitivity threshold.

If the above 2 groups are not considered in the same way as light commercial vehicles, this would demand either NO_x aftertreatment technology (not currently technically feasible) or a switch to gasoline versions of these products, with a corresponding detrimental impact on fuel economy and CO₂ emissions. Costs of NO_x aftertreatment technology for application in 2010 have already been submitted to the Commission as part of the Euro 5 questionnaire early in 2005.

As the air quality impact is negligible and the costs are substantial (particularly considering the low volume of these products), this measure can not be justified on an air quality basis.

2. Proposed Regulation

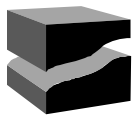
Moving on from the explanatory memorandum to the text of the proposed Regulation, ACEA addresses the following issues

- Scope
- Application Dates
- OBD service information
- Particulate number measurement
- Table 1: scope

Scope

Article 2 states that *“this Regulation applies to all motor vehicles with positive ignition engines and ..”*.

Article 5, section 3, which appears to replace section 5.2 in Annex I to Directive 70/220/EEC as latest amended (also summarized in Figure I.5.2.), then lists the requirements the vehicles must comply with to obtain type approval.



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The proposed Regulation however does not contain the **Maximum Vehicle Weight limit of 3500 kg** that has been a part of European Emissions legislation since 1983 (M vehicles with a positive ignition engine with a total mass higher than 3500 kg have to comply only with Type II, idle CO, and Type III, crankcase emissions, tests). Although the category N1 is itself limited to 3500 kg, category M or M1 are unlimited. In practice the vast majority of passenger cars have maximum technically permissible masses well below 3500 kg but there are a very small number of specialist vehicles above this limit (e.g. armored vehicles). Some types of special vehicles are exempted from the requirements of the framework Directive and ACEA does not see any logic in introducing the potential confusion of including these vehicles in the future emissions legislation. It is also unclear which requirements would apply to CNG buses, today covered by Directive 88/77/EEC.

OBD service information

Article 4, paragraph 3, states "...This OBD related information will be made available on a non discriminatory basis to any interested component, diagnostic tool or test equipment manufacturer and/or repairer". Similar wording can already be found in the Block Exemption Directive and should not reappear in this proposal.

Application Dates

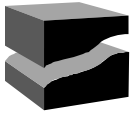
Article 6 includes the **introduction dates** of the proposal. An 18-month lead-time from the entry into force of this new Regulation is not sufficient since bringing a known but new technology into full production requires at least 3 years.

The proposed regulation should confirm January 2010 as date of entry into force of the new requirements for new vehicle types or impose 36 months after entry into force of the Regulation, whichever is later. A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Following the initial process of adaptation/development, manufacturers require two complete iterative cycles of summer and winter testing with sufficient time in between for implementation and validation of changes. Finally, the type approval process requires between 6 and 9 months to complete.

Industry has planned along with its supply base to introduce Euro 5 at 2010; as also indicated clearly in the Commission communication on Incentives which was published early in 2005. Vehicle model changes and the associated production line rebuilds have already been scheduled. Earlier pull ahead is not possible given the short time between now and the mandatory application of Euro 5. Additionally, model cycle plans would thereby be significantly shortened for the preceding specifications, so driving unit cost upwards (lower number of units over which to amortize fixed costs).

When a major new engine emissions programme is Type Approved – it means not only redoing the emissions Approval, but many other Approvals could be affected such as:



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- *EMC/RFI,*
- *Noise,*
- *Fuel economy / CO₂,*
- *End of Life (Bill of Materials)*
- *Power*
- *Smoke*
- *Masses and Dimensions including gradability checks*
- *Fire risk prevention*
- *Crash (frontal / side)*

These Approvals may need to be updated, depending on the extent of the changes, this can be done either as a paperwork exercise or with completely new testing. Again, this places additional resource burdens on the Manufacturer and the Type Approval Authority.

Additionally, the same dates of entry into force for M₁ and N₁ vehicles class II and III will impose a burden to type approval authorities which have limited resources for the review of the extensive documentation needed to grant type approval for each of the many different vehicle types presently offered on the market.

Article 9 section 2 attempts to give a 3 month grace period between implementation of the measures of the Regulation and their application. The proposed text however states: *"If the adoption of the implementing measures is delayed beyond [18 months after the date of adoption of this Regulation] the dates mentioned in Articles: 6 (2), 6(3), 12(1) and 12(3) shall be replaced by a date 3 months after entry into force of these implementing measures."*

The lead-time for the entry into force of any new requirement should in reality be based on the date of entry into force of the comitology Regulation, which complements the co-decision Regulation, since the stringency of the requirements and the measures that have to be adopted depend on the test and enforcement protocols

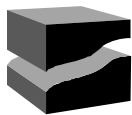
Particulate number measurement

"Whereas" (13) states:

"In order to ensure that emissions of ultra fine particulate matter (PM) are controlled, the Commission should also give consideration to the adoption of a number based approach to emissions of PM, in addition to the mass based approach which is currently used."

But, the table of limit values in Annex I already contains a column for Number of Particulates. Furthermore, the heading of this column refers to a footnote which reads: *"In the absence of a number standard, manufacturers should collect the PM number data and make these available at type approval. This shall be done according to the procedure referred to in Article 9."*

As the Commission is merely considering a number standard, no provision needs yet be made for its inclusion in the legislation. Regarding the above mentioned data collection, the automotive industry currently knows of no accepted and practical measurement method or calibration procedure (Article 9 refers to the introduction timing of the Regulation).



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Table 1: scope

The first row of limit values in Table 1 is headed Category M. As the scope of this Regulation should only cover M1 (and by manufacturer's request M2), this row heading should be corrected to read M 1.

3. General Comments

Finally, ACEA has some general comments regarding the **development and consultation process** being employed for this legislation. Until recently, DG ENTR has always developed new proposals concerning emission requirements within the Motor Vehicle Emission Group (MVEG), the expert group involving national delegations, industry associations and NGOs. This was not the case this time.

The above approach allowed an in-depth review of the data which supports the setting of new emission limit values and discussions on many other technical aspects of the new requirements beyond their feasibility and costs such as dates of implementation for the different vehicle categories, lead-time, the impact on other community objectives and the consequence of the extension of certain requirements to vehicle categories not covered in the past.

Pre-discussions within MVEG would also allow Member State experts to be better informed on the Commission's objectives and the details of its proposal well ahead of the debate at Council level.

Finally, the process leading to this draft proposal does not seem to be in conformity with the better regulation principles and the need to improve the competitiveness of the EU motor vehicle industry as presently discussed under the CARS 21 initiative.

AECC RESPONSE TO STAKEHOLDER CONSULTATION ON EURO 5 EMISSION LIMITS FOR LIGHT-DUTY VEHICLES

AECC* is pleased to provide input to the Commission stakeholder consultation on the draft proposal for Euro 5 Emissions legislation for Light-duty Vehicles.

AECC believes that the European automotive industry is not only a key player in sustaining long-term growth and jobs throughout the European Union, but is also a crucial participant in the drive to improve air quality and minimise related health effects to the benefit of European society as a whole.

European legislators should present challenging EU emissions legislation for the future. This will then drive innovation and development in the motor industry. In turn it will result in economic growth and better air quality to the benefit of the whole community. Future emissions standards therefore need to include a clear long-term view of future requirements. These standards will determine whether or not active development of emerging technologies proceeds. Challenging emissions legislation will enable the industry's world-wide application of available and appropriate emissions control technologies.

CONTENT OF THE PROPOSAL

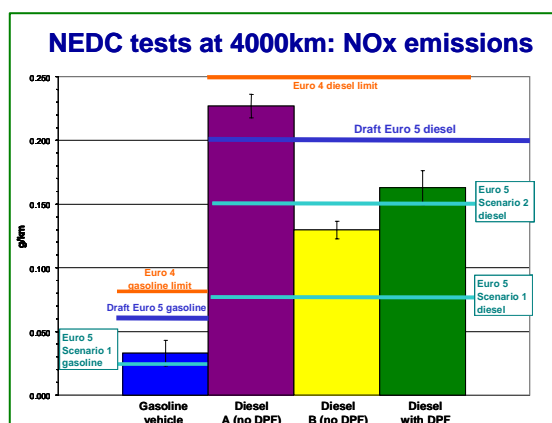
AECC would like to comment on the main issues raised in the Euro 5 proposal.

Our comments include reference to data drawn from the AECC Light-duty Test Programme conducted in the second half of 2004 at an accredited European type-approval laboratory and using four European-market Euro 4-certified production vehicles. The vehicles (one gasoline, one diesel with particulate filter and two diesels without particulate filter having different fuelling and emission control systems) were tested over the regulated (NEDC) test and other test cycles, with measurement of regulated emissions and of particulate mass and number to the PMP protocol being developed by the UN/ECE GRPE working group.

Note: Where "Scenario n" is shown on graphs or in text, this refers to the Scenarios used in the Commission's 2004 Stakeholder questionnaire on Euro 5 technology potential and cost.

DIESEL NOx

AECC's recent test programme on light-duty vehicles showed that a range of NO_x levels within the current limits of 250 mg/km are possible with today's vehicles. The AECC test programme showed that a state-of-the-art Euro 4 diesel vehicle with good fuel economy already meets 150 mg/km, which was proposed in the Commission's 'Scenario 2'[‡].



The Euro 5 proposal of 200 mg/km calls for only a small (20%) reduction in diesel NO_x emissions from the current Euro 4 limit on the basis that the technology for NO_x after-treatment is not yet mature. Euro 5 vehicles will therefore continue to rely on mechanical engine measures such as exhaust gas recirculation (EGR) to control emissions over the test cycle.

The UK's Vehicle Certification Agency's database of Type Approval emissions results[§] shows that already almost one in two (45%) of diesel vehicles certified to Euro 4 levels meet this 200 mg/km limit.

[‡] average NEDC results for 3 different diesel vehicles were 227, 130, and 163 mg/km in the AECC test programme. Type approval results for the three vehicles were 196, 180 and 199 mg/km respectively.

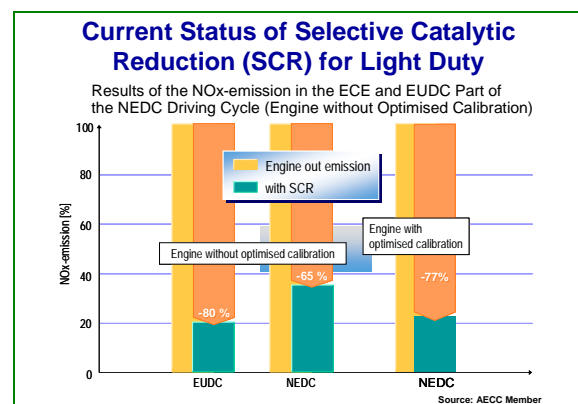
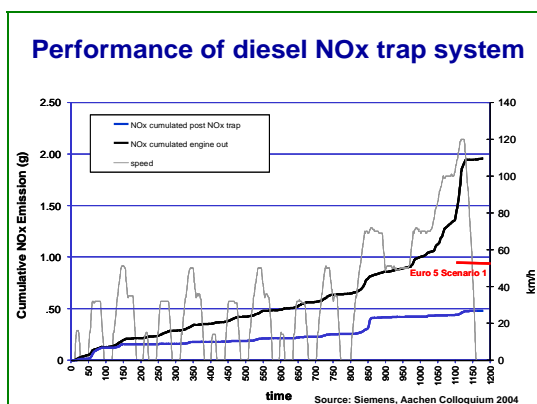
[§] <http://www.vcacarfueldata.org.uk/>: Status August 2005

AECC recognises that NO_x aftertreatment for light-duty diesel vehicles is at the stage of applications development: the technology is fully-researched, practicable and available for productionisation. It should be recognised that these catalyst-based NO_x reduction technologies are already in use in vehicles on the market in Europe:

- NO_x adsorbers are used with direct injection gasoline and diesel engines,
- Lean NO_x (HC-SCR) catalysts are coming in to use on a few light-duty diesel engines,
- Selective Catalytic Reduction (SCR) is the European motor industry's main technology choice to meet Euro 4 and Euro 5 emissions requirements for heavy-duty diesel engines and has been announced by some manufacturers for light-duty applications in the US.

In addition, the application development of NO_x reduction aftertreatment to light-duty diesels is already under way to enable European manufacturers to meet US requirements for diesel emissions^{1,2} and hence to build upon the European motor industry's pre-eminent position in the light-duty diesel vehicle market.

The following results of tests on Light-duty NO_x adsorber and SCR systems have recently been published.



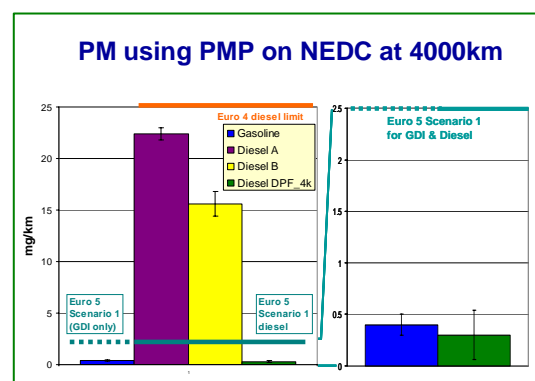
AECC recognises that the introduction of new technologies to reduce NO_x emissions does pose cost issues for the motor industry. However, if there is no prospect of NO_x control systems being required for future European vehicles, then there will be no impetus for their application in Europe and hence no forward movement on their development.

In view of the Member States' concerns over their ability to meet NO_x air quality requirements in future, it would be appropriate to define a second stage for diesel NO_x reduction to be applied at a later date. This approach has already been used for heavy-duty engine emissions, where definition of a two-stage approach for NO_x has permitted development of the technologies to meet Euro 5 which are now already in use for Euro 4. This approach would then give the motor industry and their suppliers a long-term view of requirements and provide the impetus needed to ensure continued application development for NO_x control.

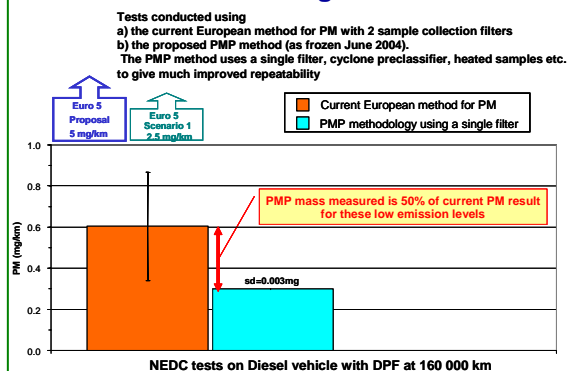
PARTICULATE MASS AND NUMBER

AECC Members are fully committed to the mass production of Diesel Particulate Filters (DPFs) that will be needed to meet the proposed requirements, and are rapidly expanding production in the EU25 to support the vehicle manufacturers' requirements. Type Approval data shows that vehicles across the size and power range already meet the proposed limit when fitted with a Diesel Particulate Filter.

The AECC test programme and the PMP programme have shown that current production vehicles incorporating a DPF emit less than 1 mg/km PM, readily meeting the Commission questionnaire 'scenario 1' figure of 2.5 mg/km.



PMP versus current EU gravimetric method

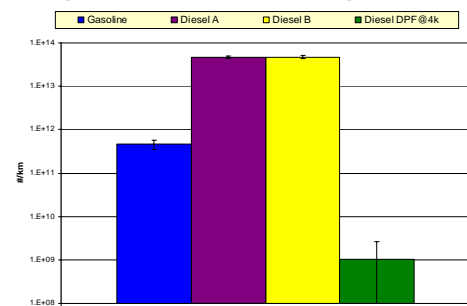


AECC is also active in supporting the development of improved, more repeatable mass measurement methodology in the UN/ECE GRPE Particulate Measurement Programme (PMP). AECC's contribution includes the provision of a standard production filter-equipped car as the 'golden vehicle' for the programme in addition to provision of results from AECC's own test work³ which used a different filter-equipped car and two diesel cars without filters. Reproducibility of the new procedure will be determined by the PMP programme.

AECC's results show that the new procedure provides improved repeatability but for filter-equipped cars records only about half the mass of the current Euro 4 procedure. This therefore aligns with the Commission statement that the PM mass emission limit will have to be recalibrated when a new PM measurement procedure is introduced.

AECC has also examined particle numbers and again has provided data on number measurement to the PMP programme. AECC's data showed that particle numbers were similar for two non-DPF diesel vehicles using different technologies, but those from a current DPF-equipped vehicle were several orders of magnitude lower and even lower than a gasoline vehicle. This applied not only to the NEDC but to all driving cycles tested.

Average particle numbers using CPC (NEDC)

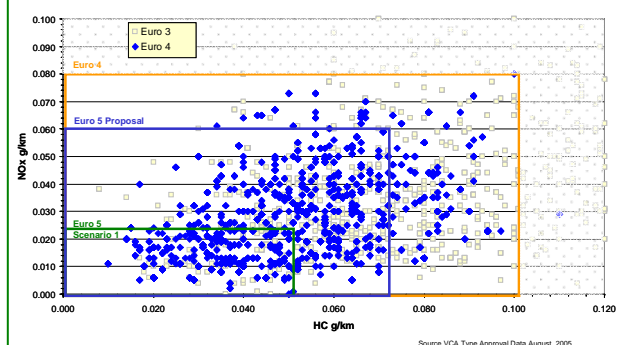


GASOLINE ENGINE NOx AND HC

The explanatory memorandum refers to the proposal for a 25% reduction in NO_x and HC limit values and notes that "many petrol vehicles currently sold in the EU are comfortably beneath this proposed emission limit, others can be made to respect it at relatively low cost."

Examining the UK's Vehicle Certification Agency database of Type Approval emissions results shows that of the Euro 4 gasoline vehicles listed^{**}, 88% already meet both these limits. It is possible to achieve lower emissions at very limited on-cost. AECC provided a full and detailed response to the Commission Euro 5 questionnaire on Euro 5 technologies and their costs. The VCA data 'cloud' shows the wide range of emissions results for petrol vehicles. Detailed examination of the data shows that all types and sizes of vehicles can have very low emissions. The data show that 35% of today's Euro 4 petrol cars meet the most stringent of the Commission's questionnaire scenarios (Scenario 1).

Gasoline passenger cars Type Approval values



Reducing NO_x emissions from gasoline vehicles can contribute to the overall reduction in NO_x – especially given the limited reduction proposed for diesel NO_x – and hence assist with meeting the Member States' air quality requirements. The increasing market share of diesel vehicles across the European Union will inevitably lead to an increase in the total fleet NO_x emissions between

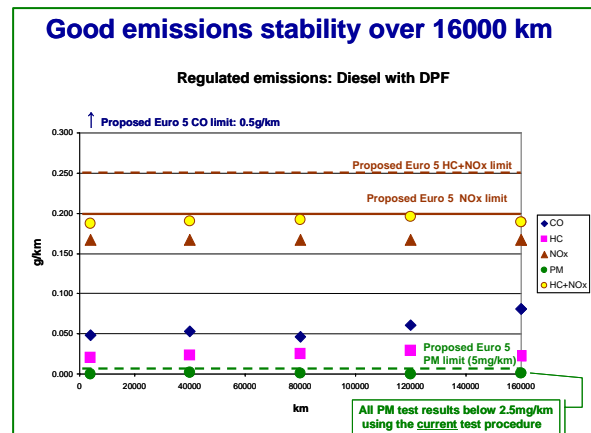
^{**} <http://www.vcacarfueldata.org.uk/>: Status August 2005

now and 2010 despite the Euro 5 proposals. Lower emissions from gasoline vehicles can help offset this increase. The evidence from test work is that gasoline engine three-way catalysts ensure low NO_x emissions under all driving conditions, not just on the NEDC, which should be especially helpful in reducing real-world emissions. Technology is already available for European vehicles sold in the US to meet limits significantly lower than those proposed. The on-going development of improved catalysts formulations has ensured and will continue to ensure that improved emission levels can be achieved with no or minimal additional cost.

DURABILITY

The US Tier 2 requirements for durability already exceed the proposed figure of 160000km. Tier II requires 120000 miles (just under 200000km) durability to be demonstrated.

The recent AECC test programme demonstrated the durability of a current-production diesel vehicle with Diesel Particulate Filter (DPF) system to 160000km.



HEAVY PASSENGER VEHICLES

Similar technologies to those used for passenger cars are applicable to and available for Sports Utility Vehicles and other heavy (M1, >2500kg) passenger vehicles. As some of these vehicles may be special-purpose vehicles and will until now have had to meet less stringent standards than other passenger cars, it may be appropriate to allow such vehicles a slightly longer period for the transition to Euro 5 standards.

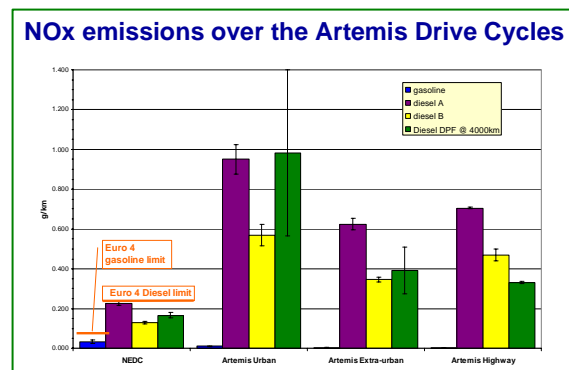
GENERAL

The preliminary draft proposal for a regulation refers to the requirement for the Commission to keep under review the need to revise the New European Drive Cycle (NEDC) to ensure the real world emissions correspond to those measured at Type Approval.

The AECC test programme incorporated emissions measurements for Euro 4 cars on the Artemis Drive Cycles. These demonstrated that emission levels on these cycles are not, in all cases, the same as those observed over the NEDC. As an example, vehicle NO_x emissions over the NEDC and the three Artemis drive cycles are shown in this graph.

Any future test cycle should reflect real-world operating and usage conditions.

In Table 1 the proposal refers only to emissions from petrol and diesel engines rather than from Spark Ignition and Compression Ignition engines. It needs to be made clear whether the same limits apply to other fuels such as LPG or natural gas.



Article 2 (Scope) of the proposed text states that the regulation “applies to all motor vehicles with positive ignition engines....” and Table 1 shows the proposed limits as applying to All Category M. On the other hand, its applicability to compression ignition engines is limited to categories M₁ and N₁ in both places. It therefore appears that the same requirements and limit values that are proposed for passenger cars would apply to, for instance, full-size buses powered by natural gas and even to category N vehicles such as refuse trucks if powered by natural gas, LPG or petrol.

NEW REGULATORY APPROACH

AECC welcomes the proposal to replace Directive 70/220/EEC and its numerous amendments with a new consolidated document, which will make the requirements clearer and more useable. The proposal for this to be a Regulation, rather than a Directive, will ensure consistent application across the Member States without inhibiting the option for them to put in place incentives for early application of future requirements if they deem it necessary.

The stakeholder consultation document covers only the co-decision (European Parliament and Council) part of the proposals. Technical details such as the test procedures and the composition and specifications of reference fuels are strongly linked to the measured vehicle emissions and to the relative severity of the limit values. To fully evaluate any proposals it is thus essential that both parts of the proposals are reviewed in parallel. It has been assumed throughout this response that the technical specifications implementing these provisions (the comitology proposal) will maintain the details shown in the current Directives, except where this has been indicated in the co-decision proposal. Nevertheless, it is essential that both parts of the 'split level' procedure are developed in tandem, to enable proper review and to ensure the correct interaction between them.

The 'split level' approach will assist in enabling the more rapid updating of the technical requirements as control and measurement technologies develop in future. It is important that this clear and vital link between limit values and the test procedure by which emissions are determined is maintained in future updates even though the two aspects may be separated in legislation.

The technical detail included in the current Directive is necessarily complex but has been found to be necessary to ensure good technical clarity for those operating and implementing the requirements (including the motor industry itself). The technical requirements are also critical to the effective operation and enforcement of legislation on vehicle emissions. AECC strongly believes that the detail of any new or revised text should therefore be subject to critical review through the existing mechanism of the Motor Vehicles Emissions Group (MVEG) during the process of development so as to fully ensure the involvement of experts from both the Member States and Stakeholders including Industries and NGOs.

The new proposal includes an effective date for Type Approval of 18 months after the date of entry into force. AECC is concerned that for future developments which (unlike the current move to fitment of Diesel Particulate Filters) have not been anticipated by the industry, this lead time may be too short, and suggests a Type Approval lead time of 2 years may be more appropriate whilst retaining the 'all registrations' proposal of 36 months from entry into force. Appropriate fixed Entry into Force dates could also be beneficial in this respect.

IN SUMMARY

AECC welcomes the proposals on Euro 5 and the opportunity to comment on them.

Diesel NOx: Today's state-of-the-art diesel vehicles are below the 150 mg/km NOx 'Scenario 2' value from the Commission's questionnaire. The motor industry, its supply base and European technology providers would be assisted by defining a second stage (Euro 6) for diesel NOx. Without this, application development of existing emission control technologies for Europe will not proceed.

Diesel PM: Today's state-of-the-art diesel vehicles are below the 2.5 mg/km PM 'Scenario 1' value from the Commission's questionnaire. The limit proposed is readily achievable by currently available technology and vehicles across the size and power range already meet it when fitted with a Diesel Particulate Filter. For vehicles with particulate filters, AECC concurs the statement in the proposal that improved particulate mass measurement methods yield lower mass results than the current procedure. The new procedure also provides significantly better repeatability. AECC's data also show that the particle number measurement procedure is robust and that particle numbers can be reduced by several orders of magnitude through the fitment of Diesel Particulate Filters.

Gasoline NOx and HC: Over 88% of current Euro 4 vehicles already meet the proposed limits. It is possible to achieve lower emissions at very limited on-cost. Technology is available for European vehicles sold in the US to meet limits significantly lower than those proposed for Euro 5.



Durability: The proposal of 160,000km is achievable and has been demonstrated for both gasoline and diesel vehicles.

Heavy Passenger Vehicles: Technologies similar to those used for passenger cars are equally applicable.

General: Technical details such as the test procedures and the specification of the reference fuels affect both the relative severity of the limit values and measured vehicle emissions. It is essential that both parts of the 'split level' procedure are developed and reviewed in tandem, to ensure the correct interaction between them. Clarification is needed on whether the limits proposed are intended to apply to Spark Ignition-engined vehicles other than Categories M₁ and N₁ and to other fuels such as LPG and CNG.

New Regulatory Approach: AECC welcomes the proposal to consolidate the existing Directive and its amendments into a Regulation using the split level approach. The mechanism of the Motor Vehicle Emissions Group (MVEG) remains essential to the effective development and operation of emissions requirements. AECC is concerned that for future developments which (unlike the current move to fitment of Diesel Particulate Filters) have not been anticipated by the industry, the 18 month lead time for Type Approval may be too short, and extending it to 2 years or defining fixed dates may be more appropriate.

You can contact AECC at info@aecc.be or +32 2 7068160.

Dirk Bosteels
Executive Director
AECC

07 September 2005

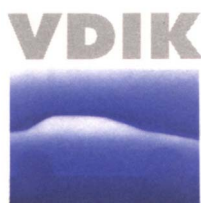
**AECC is an international non-profit scientific association of European companies engaged in the development, production and testing of catalyst and filter based technologies for vehicle and engine emissions control. This includes the research, development, testing and manufacture of autocatalysts, ceramic and metallic substrates and speciality materials incorporated into the catalytic converter and filter and catalyst based technologies to control diesel engine emissions (especially particulates and nitrogen oxides). Members' technology is incorporated in the exhaust emission control systems on all new cars and an increasing number of commercial vehicles, buses and motorcycles in Europe.*

AECC's members are: Argillon GmbH, Germany; Corning GmbH, Germany; Delphi Automotive Systems SA, Luxembourg; Emitec Gesellschaft für Emissionstechnologie mbH, Germany; Engelhard Technologies GmbH, Germany; Ibiden Deutschland GmbH, Germany; Johnson Matthey PLC, United Kingdom; NGK Europe GmbH, Germany; Rhodia Electronics & Catalysis, France and Umicore AG & Co. KG, Germany.

¹ Enderle, Breitbach, Paule & Keppeler (DaimlerChrysler AG); Selective Catalytic Reduction with Urea - The most effective Nitrogen Oxide Aftertreatment for Light-duty Diesel Engines; 26th Vienna International Motorsymposium, 28-29/04/2005

² Hammerle et al (Ford); Urea SCR and DPF System for Diesel Sport Utility Vehicle Meeting Tier II Bin 5; Diesel Engine Emission Reduction Conference (DEER), August 2003

³ AECC light-duty test programme – PMP measurement; UN GRPE/PMP meeting, Geneva, 31/05/2005;
<http://www.unece.org/trans/doc/2005/wp29grpe/PMP-2005-15-01e.pdf>



07. September 2005

**Position
of the Association of International Motor Vehicle Manufacturers (VDIK)
on the preliminary proposal for an EC directive on exhaust
emissions of passenger cars and light commercial vehicles (Euro5)**

The VDIK thanks the EC Commission for giving interested circles an opportunity to state their position on the preliminary draft for the Euro5 exhaust emission standard for passenger cars and light commercial vehicles at an early stage. Moreover, the Commission's intention to replace the current exhaust emission directive 70/220/EEC by a completely new directive is seen as a positive development.

The VDIK also welcomes the fact that the proposed directive establishes clear requirements with respect to the exhaust emission behavior of future vehicles (effect-based regulations) and, as in the past, refrains from legislating specific technical solutions (design regulations). This allows the international motor vehicle manufacturers to opt for the most innovative way of meeting the requirements.

The proposed limits for particulate emissions and nitrogen oxide emissions for diesel vehicles are feasible from a technology perspective. The NO_x limit for M vehicles (less than 2,500 kg total mass) has been chosen such that it can be achieved within the engine without leading to higher CO₂ emissions.

We oppose the elimination of the exceptions (less strict exhaust emission limits) for passenger cars over 2,500 kg total mass, as it will create substantial costs for the testing and installation of exhaust gas after-treatment systems for the vehicle classes in question. These systems may have to be developed from scratch and tested for their real-life suitability and durability. In addition, the impact of such systems on CO₂ emissions would have to be examined.

The extension of the durability requirements for exhaust gas after-treatment systems is also being rejected as it makes more sense to first gain experience with the current requirements. In light of the related higher costs, any extension would first have to be checked for its justification. Another factor that will also have to be taken into account here is fact that overall mileage in the area of passenger cars is dropping.

The linear reduction of the NO_x and HC emission limits for vehicles with Otto engines is not justified, in particular in light of the minimal pollutant contribution by these vehicles and the known long-term emission projections for these two pollutants. In this context, one must question whether the lowering of these two exhaust limits for vehicles with Otto engines means that the goal formulated repeatedly by the German government will have to be abandoned, according to which diesel and Otto engines are to be subject to the same requirements in the medium to long term. If this goal is to be maintained, lowering the NO_x and HC limits would be counterproductive in the opinion of the VDIK.

The effective dates and transition periods set forth in the proposed directive are fairly tight, taking into consideration the above comments. An extension of the transition periods to 24 and/or 48 months from the effective date of the Directive should be investigated. For M₁ vehicles over 2,500 kg total mass and N₁ vehicles, categories 2 and 3, the said timelines should be extended by an additional year, i.e. to 36 and 60 months, respectively. Moreover, the VDIK does not see any reason why the proposed directive refrains from setting specific dates, as of which the new limits are to apply. When considering making changes in this area, one should think about making the new directive mandatory as of a certain date only for new vehicle types, and to dispense with establishing mandatory effective dates based on the first-time registration of new vehicles.

In light of the fact that the discussions around the promotion of vehicles with low particulate emissions have already progressed quite far at the national level, it would be desirable if the final and binding definition of the Euro5 exhaust emission standard for passenger cars and light commercial vehicles could be announced as soon as possible, while taking the observations made above into consideration.

Bad Homburg, 07. September 2005

AIA CR - AUTOMOTIVE INDUSTRY ASSOCIATION OF THE CZECH REPUBLIC
SDRUŽENÍ AUTOMOBILOVÉHO PRŮMYSLU

Re: Euro 5 - Response to the stakeholder consultation

Dear Sirs,

We refer to the Stakeholder Consultation - Euro 5 emission limits for light duty vehicles you launched on your website.

We discussed this matter with companies and experts concerned within our association. In this connection the AIA CR Steering Committee decided that AIA CR should support the ACEA standpoint and response sent recently by ACEA to the mailbox of this consultation.

Yours sincerely,
AIA CR Secretariat



NOTE DES AUTORITES FRANCAISES

Objet : EURO 5 – Projet de la Commission européenne – Commentaires des autorités françaises

Les autorités françaises prient la Commission européenne de bien vouloir trouver ci-après leurs commentaires écrits sur le projet de règlement « EURO 5 » soumis à la consultation des parties intéressées et des Etats membres via le site Internet de la Direction Générale « Entreprises et Industrie ».

*

* *

Les autorités françaises accueillent favorablement le projet de règlement EURO 5, qui constitue la première proposition concrète découlant du programme CAFE.

Elles désirent néanmoins adresser à la Commission européenne quelques commentaires, ainsi que des questions qui permettront à la France de prendre ultérieurement position sur les principales propositions présentées dans ce projet de règlement.

I – Commentaires généraux :

Concernant le calendrier d'adoption du projet de règlement EURO V, les autorités françaises souhaitent rappeler leur attachement à une mise en œuvre effective de ces dispositions à l'horizon 2010. Elles souhaitent donc que la Commission européenne adopte sa proposition officielle dès la fin de l'année 2005.

En ce qui concerne la forme juridique proposée par la Commission européenne, les autorités françaises sont favorables d'une part à un règlement remplaçant à terme l'ensemble des directives existantes, et d'autre part à son adoption selon un principe à deux niveaux (« *split approach* ») ; en effet, cette approche, en plus de simplifier le travail de transposition des Etats membres, permet non seulement une sécurité juridique accrue, mais également une meilleure harmonisation des mesures prises au niveau communautaire.

Néanmoins, les autorités françaises jugent essentiel que la Commission européenne mette tout en œuvre pour que les deux procédures complémentaires d'adoption de ce projet de règlement (codécision / comité d'adaptation au progrès technique) soient coordonnées pour aboutir sensiblement à la même date et ne pas retarder la mise en œuvre effective de ce règlement. Elles souhaitent que les dates d'application du règlement soient définies à partir de la date de mise en vigueur complète du règlement, incluant l'ensemble de ses annexes techniques.

Par ailleurs, les autorités françaises souhaitent attirer l'attention de la Commission sur la nécessité d'introduire, pour la période transitoire, les dispositions existantes au titre d'EURO 4 dans le nouveau règlement EURO 5, dispositions qui resteront en vigueur jusqu'à l'application des nouvelles normes EURO 5 à tous les véhicules neufs immatriculés (Articles 6 et 12). En effet, si de telles mesures transitoires n'étaient pas introduites, un important vide juridique apparaîtrait lors de l'abrogation d'EURO 4.

Les autorités françaises souhaiteraient en outre que la Commission européenne lui confirme que, conformément à la directive cadre de réception des véhicules (70/156/CEE), les véhicules tactiques militaires, et en particulier les véhicules légers tout-terrain, ne seront pas soumis de manière obligatoire aux exigences imposées par EURO 5 aux véhicules particuliers et utilitaires légers. En effet, lorsqu'ils sont envoyés en opération extérieure, ces véhicules sont contraints d'utiliser des essences issues du marché local, d'un niveau de qualité généralement inférieur à ceux mis sur le marché européen, et donc souvent incompatibles avec les moteurs et équipements permettant de répondre aux exigences communautaires en termes d'émissions polluantes.

Les autorités françaises souhaitent enfin souligner la nécessité d'assurer une cohérence entre le projet de règlement EURO 5 et les recommandations pour l'usage d'incitations fiscales préalables à l'entrée en vigueur d'EURO 5 publiées en janvier 2005 par la Commission européenne.

II – Commentaires spécifiques et demandes de clarification :

Champ d'application : cohérence entre l'article 2 et l'annexe II :

Les autorités françaises souhaitent que la Commission européenne modifie l'annexe II du projet de règlement EURO V afin d'assurer la cohérence avec les catégories de véhicules strictement visées à l'article 2 et éviter toute interprétation erronée pouvant laisser croire que les véhicules des catégories M2 et N2 seraient soumis à la fois aux dispositions du présent règlement et de la directive 88/77/CEE.

Définitions – Article 3 :

D'une manière générale, les autorités françaises souhaitent que les définitions introduites par le nouveau règlement EURO 5 soient mises en cohérence avec les définitions existantes.

Concernant la définition de la notion de « type de véhicule » (Article 3-2), les autorités françaises souhaitent qu'une clarification soit effectuée entre la notion générale de type en regard de la directive de réception complète CE (70/156/CEE) et celle de type spécifique en regard du présent règlement.

Il en va de même concernant la définition de « véhicule hybride » (Article 3-3), qui doit également être mise en cohérence avec les règlements adoptés à Genève (règlements n°83 et 101) et la définition à introduire dans la version consolidée de la directive de réception 70/156/CEE.

Enfin, les autorités françaises proposent que la définition de « masse en ordre de marche » fasse référence explicite à la définition indiquée par la directive de réception 70/156/CEE.

Contrôles et essais :

Les autorités françaises considèrent que la rédaction des articles 4-1, 4-3, 5-3 et 6 demeure ambiguë en ce qui concerne les responsabilités respectives des constructeurs automobiles d'une part, et des autorités administratives et techniques d'autre part, dans la réalisation des contrôles et des essais. Les autorités françaises souhaitent que le cadre actuel de la réception et des contrôles et essais effectués par les services techniques agréés soit maintenu ; elles sont donc opposées à toute forme de certification interne (« *self-certification* ») ou d'essais réalisés en interne (« *self-testing* ») par les constructeurs automobiles pour l'application de ce nouveau règlement.

Les autorités françaises souhaitent en outre que la Commission européenne apporte des éléments techniques et économiques concernant l'impact potentiel du passage d'une exigence de durabilité de 100 000 km à 160 000 km sur les procédures de contrôles et d'essais.

Les autorités françaises proposent enfin que les procédures spécifiques pour les véhicules hybrides préconisés à l'article 5, paragraphe 5, du projet de règlement soient celles déjà adoptées à Genève (règlements n°83 et 101).

Dates d'application – Article 6 :

Les autorités françaises souhaitent obtenir de la part de la Commission européenne les éléments l'ayant conduit d'une part à proposer des délais d'application de 18 et 36 mois respectivement pour les nouveaux types et les nouveaux véhicules, et d'autre part à ne pas reconduire le principe de dates d'application différenciées pour les classes II et III de la catégorie N1.

Incitations fiscales – Article 7 :

Les autorités françaises sont favorables au maintien, à l'article 7 du projet de règlement EURO 5, des dispositions existantes encadrant les incitations fiscales.

Régime de sanctions – Article 11 :

Les autorités françaises proposent à la Commission européenne de supprimer les paragraphes 1 et 2 de l'article 11 et de ne faire référence qu'au régime de sanctions instauré par la directive cadre 70/156/CEE. En effet, le dispositif général de réception de la directive cadre prévoit déjà, en cas de non-conformité, le refus d'immatriculation ou, le cas échéant, le rappel des véhicules.

Valeurs limites d'émissions – Annexe I :

Les autorités françaises souhaiteraient tout d'abord que la Commission européenne indique les raisons pour lesquelles elle propose de ne pas introduire, comme cela était le cas dans la législation existante, de dérogation pour les véhicules de plus de 2,5 tonnes de la catégorie M1. Les autorités françaises souhaiteraient notamment obtenir des informations sur le niveau de disponibilité des technologies nécessaires au respect, par ces véhicules, des valeurs limites prévues, sur le surcoût qu'occasionneraient les adaptations techniques nécessaires au respect de ces dernières, ainsi que sur les catégories de véhicules qui devront faire l'objet d'adaptations techniques spécifiques.

Concernant les valeurs limites d'émissions de NOx, les autorités françaises sont favorables à la valeur de 200 mg/km à l'horizon 2010. Au vu notamment des difficultés rencontrées par les Etats membres pour respecter les directives relatives à la qualité de l'air, elles souhaitent néanmoins que le projet de règlement EURO 5 comporte une clause de réexamen, avec rapport et propositions de la Commission, permettant de prendre rendez-vous pour une seconde étape de réduction, au vu des évolutions technologiques. Afin de pouvoir fixer l'échéance de cette clause de rendez-vous, les autorités françaises souhaiteraient donc que la Commission européenne présente d'ores et déjà un bilan de l'état d'avancement de la mise au point des technologies qui seront nécessaires à l'entrée en vigueur de cette seconde étape.

Concernant enfin les valeurs limites d'émissions de particules que la Commission européenne propose d'appliquer aux véhicules à essence, et notamment ceux dotés d'une motorisation à injection directe, les autorités françaises souhaiteraient obtenir des éléments sur la faisabilité technique d'une telle mesure, ainsi que sur son impact en termes de rejets de CO₂ des véhicules concernés. Elles souhaiteraient connaître en outre les valeurs d'émissions actuellement envisagées, sans traitement particulier, pour les véhicules dotés de moteur essence à injection directe.

Response to the Stakeholder Consultation on Euro 5 Emission Limits

Autotuojat ry (The Association of Automobile Importers in Finland) recognizes the importance emission limits have had in the past and still have in safeguarding a healthy environment in the EU and in minimizing the harmful impact on the environment. The emission limits have been tightened a number of times during the past 15 years and this has dramatically lowered the emissions from new vehicles and has solved or will in the relatively near future solve most of the problems related to “traditional” exhaust emissions caused by light duty vehicles.

Problems however still remain in lowering the CO₂-emissions of these vehicles. The task of simultaneously lowering the “traditional” emissions and the emissions of CO₂ is very difficult as many of the solutions that limit the “traditional” emissions have an opposite effect on CO₂-emissions. This means that we have to decide which of the two forms of emissions is more important to reduce. In our opinion, the emission reductions of CO₂ should have higher priority than further reductions of “traditional” emissions in the case where simultaneous reductions are difficult to achieve.

Against this background it seems that the proposal for Euro 5 emission limits contains a number of problematic issues. The problems relate to

1. emission limits that are so demanding that they probably will have a negative impact on CO₂-emissions from new vehicles
2. testing procedures that add complexity and cost to the type-approval of vehicles (without a corresponding gain for the environment), thus taking away resources from the developing of more fuel efficient vehicles and
3. unnecessary tight timetables that makes a balanced and long term development of the vehicles difficult

At least the proposal of a 5 mg/km PM limit for lean burn direct injection spark ignition engines seems to be so demanding that it would affect the whole technology negatively, at least by doing the technology so expensive that customers would probably not be ready to pay the extra price this would cause. As this technology is particularly developed to have low emissions of CO₂ such an effect would not be wanted. The proposal of a limit value of 200 mg/km for NO_x-emissions from compression ignition engines might also have a similar effect on fuel efficient diesel technologies. If aftertreatment would be necessary to reach the emission target, the cost of the technology might affect customer behaviour in a way (a shift towards traditional gasoline engines) that would cause higher emissions of CO₂.

The adding of a new, obviously very complex and costly testing procedure in order to determine the number of particles is not justified, as the number of particles according to our knowledge correlates reasonably well with the weight of particles determined with the present testing procedure. Tests should be cost effective from an environmental point of view in order not to misuse limited resources.

Finally timetables should be reasonable and should take into account the complexity of engine and vehicle developing. In general a minimum period of at least three years is needed in order for industry to develop new technology.

To the European Commission
concerning the
Preliminary draft proposal for a
Regulation of the European Parliament and of the Council
relating to emissions of atmospheric pollutants from motor vehicles (Euro 5)

Madam, sir,

we are an Austrian NGO of medical doctors working in the field of environmental health. Recent scientific evidence has undoubtedly shown that current air pollution still has considerable health impact (ranging from mortality and hospital admissions to symptoms and loss of productivity). The research focus lies on fine particles and growing evidence suggests that particles from mobile incineration sources play a major part in the aforementioned severe health effects.

In the European urban settings motor vehicles contribute substantially to the air pollution mixture and therefore stricter regulations on emissions are urgently wanted. But we want to point out that we doubt that emission control (for the single vehicle) can solve the air pollution problem. Still increasing numbers of cars (especially in the new member states) and an increase in kilometers travelled counteract any improvements in single vehicle emissions. So new approaches (including reconsidering of free trade, spatial and city planning, redirecting of financial resources to public transport, research and investment in new cleaner technologies, etc.) are needed apart from EURO 5 emission limits.

Having said this we want to congratulate you on the historical step forward with new emission limits for CO, HC, NOx, and PM. We are especially glad that for the first time limits for particle numbers are considered although no definite figures are yet proposed. (We believe that the data are sufficient already to propose such values!) We encourage the setting of limit values in such a way that only modern particle filter technology can achieve these limits. Undoubtedly these stringent values will improve the health of European citizens. But we also want to express our hope that they will encourage the European car industry to move forward with technological developments and to invent and introduce new technologies with even less fuel consumption and less emissions. This will not only lead to a better environment but also to better competitiveness of the European industry.

Ärztinnen und Ärzte für eine gesunde Umwelt (www.aegu.net)

BIL Sweden would like to respond to your Euro 5 stakeholder consultation by enclosed comments which are identical to the Association des Constructeurs Europeens d'Automobiles - Acea position.

Bil Sweden is the trade organisation for companies manufacturing and importing passenger cars, trucks and buses

Best regards

BIL Sweden

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Response to Stakeholder Consultation – Euro 5 Emission Limits for Light Duty Vehicles

Summary:

The ACEA response addresses a number of issues which are summarized below and addressed in more detail in the subsequent sections concerning specific parts of the stakeholder consultation document.

Timing

- The Commission proposes that the regulation comes into force 18 months after entry into force; this could, depending on the political process, introduce Euro 5 for new type approvals as early as mid 2008.. Industry reminds that a 3 year minimum period is required for industrial development and that it has planned along with its supply base to introduce Euro 5 as from 2010 as indicated in the Commission Communication on Incentives early in 2005; earlier pull ahead is not possible. The proposed regulation should be modified to 2010 or 24 months after entry into force of comitology Regulation (new types and 1 year later for all new registrations), whichever is later. A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Compression Ignition Measures

- The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x aftertreatment system is not mature enough to comply with levels lower than 200 mg/km within the 2010 time frame.
- ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance protocol due to test measurement and laboratory variability even with the draft new PMP mass measurement method as the quality control for the test facility may be outside the control of the vehicle manufacturer. ACEA does not believe a new method based on particle number would bring any added benefit.

Spark Ignition Measures

- The proposed spark ignition NO_x limit of 60mg/km is a 25% reduction against Euro 4. It is widely acknowledged that spark ignition vehicles are already clean and efficient and further measures are unnecessary. A further reduction is not a

cost effective measure to improve air quality. The proposed 25% reduction in hydrocarbons (i.e. HC = 75 mg/km) is also an unnecessary and unjustified extra burden on industry in general and specifically for vehicles equipped with DI and CNG engines.

2

- The proposal to apply a 5mg/km Particulate Matter (PM) limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not mature and requires more time to meet such a limit.

Heavy M1

- The Commission proposes to remove the provision for M1 vehicles over 2500kg to meet N1 emission limits. For these diesel engined vehicles, to meet passenger car limits, will either require NOx aftertreatment or, if such technology is not mature, a switch to gasoline engines with an associated negative impact on fuel economy. The majority of these vehicles are designed to have a greater utility and / or off road capability, and this should be part of the requirement. ACEA would support limiting the use of this provision to vehicles designed and equipped to mount 7 or more seats and/ or off road capability. The latter can be defined as per the definitions in the framework Directive. Motor-caravans and other special purpose vehicles should also be included in this provision.

Durability/Compliance

- ACEA welcomes the retention of in service emissions testing at 100,000 km or 5 years. The draft proposal extends durability to 160,000 km. A durability demonstration is mentioned, the detail of which is unclear and open to interpretation. There is no justification for further regulation in this area and as such this provision should be deleted.

1. Explanatory Memorandum

With reference to the “preliminary draft proposal for a Regulation of the EP and Council relating to the emissions of atmospheric pollutants from motor vehicles (Euro 5)” recently published on the DG ENTR web-site, ACEA would like first to address the comments made in the explanatory memorandum, with reference to the following subjects:

- Split level approach
- Clean Air for Europe (CAFE)
- Compression Ignition Measures
- Spark Ignition measures
- Particle number measurement
- Durability
- Heavy Passenger Cars

Split level approach

Although the reasons for the new regulatory approach (the split-level approach) described in section 2 are understood, it is not absolutely clear which details will be included in which of the two documents i.e. the co-decision and the comitology proposals.. It is therefore difficult to comment on any omissions from this preliminary draft proposal without seeing a draft of both proposed Regulations. ACEA believes that the rules under which the split approach will operate should be defined in advance. The process of development of this new legislation must be conducted for both proposed Regulations in parallel.

3

Clean Air for Europe (CAFE)

The explanatory memorandum states in the last paragraph of section 3:

“The “Clean Air For Europe” (CAFE) programme provided the technical basis for the preparation of the Thematic Strategy on air pollution. CAFE assessed emissions, current and future air quality and the costs and benefits of further measures to improve air quality”.

On this basis, the Commission will identify the measures which are required in order to attain the necessary air quality levels. Euro 5 is one among several such measures that are important to reduce NO_x and particulate matter emissions. “

In fact, due to the delay in the availability of cost and effect data from DG Enterprise, DG Environment was forced to use data from another source very late in the process. These data have been shown to be incorrect and have resulted in major underestimation of costs for further vehicle measures. Furthermore, due to the time pressure, there has been no proper cost-effectiveness analysis with respect to road transport measures as only one set of assumptions for vehicles has been used for all scenario runs.

The automotive industry has been supportive of the CAFE process in the belief that proposals supported by solid facts would be accepted by the other EU institutions without delay. ACEA urges the Commission to update the Thematic Strategy on Air Pollution by including additional vehicle scenarios with the costs agreed by the DG ENTR panel and to take this update into account in redrafting the Euro 5 proposal.

Compression Ignition measures

The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x after-treatment system is not mature enough to comply with levels lower than 200 mg/km within the 2010 time frame. Furthermore, there is a trade off between NO_x emission levels and fuel consumption. ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). . The testing to this limit in service requires an in depth review of the in-use compliance test protocol due to test measurement and laboratory variability even with the draft new PMP mass measurement method as the quality control for the test facility may be outside the control of the vehicle manufacturer.

Testing for these technologies requires much extended test duration by nature of the regeneration process compared to non-regenerating technologies; the development and certification workload is therefore significantly increased for manufacturers and the technical services regardless of limit for these technologies.

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ACEA notes the document refers to the need to recalibrate the PM mass emission limits set out in this proposal when the new measurement procedure is implemented.

The correlation of the two methods will require a European study across a number of different laboratories using a wide range of vehicles. This type of exercise is not planned within the PMP activities.

Spark Ignition measures

In section 4, the first paragraph states:

“The main aspect of this Regulation is that it requires a further tightening of vehicle emission limits for NO_x and particulate matter.”

The proposal then goes on to reduce the limit for hydrocarbon and NO_x emissions from vehicles with a positive ignition engine by 25 %, which is definitely not a minor step.

The Auto Oil II program findings and CAFE do not support any further reduction of hydrocarbon emissions on account of air quality. No gasoline scenario was identified as

maximum technical feasible reduction scenario.

The major challenge, which engineers are facing today, is improving the fuel consumption of positive ignition engines. This is a sine qua non objective for meeting the commitment on CO₂ emission reduction, whilst these vehicles contribute to less than 10% of the total road transport NO_x emissions.

Lowering NO_x emissions hinders lowering fuel consumption at the same time. The proposal is in contradiction with the principle that new policy proposals are to be assessed in terms of their consistency with existing and other pending measures (ref. CARS-21.Rev. 1 prepared by the SHERPA group and agreed on 4 July).

Lowering total HC emission will impose an unattainable burden to CNG vehicles against the 5% substitution target of the Commission communication on alternative fuels (Nov 2001). As a matter of fact, if the HC reduction is confirmed, it will be no more possible to produce and put on the market CNG vehicles. It is also an extra burden for vehicles equipped with a DI lean-burn spark ignition engine.

The proposal to apply a PM = 5mg/km limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not mature and requires more time to meet such a limit.

Particle number measurement

Also in section 4, paragraph 4 states:

“To prevent the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass, it is foreseen to introduce at a later stage a new standard limiting the number of particles that can be emitted. At the moment, it is not appropriate to define a number standard as research is being conducted at the UN/ECE - the Particulate Measurement Programme

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(PMP) - and is still examining this issue. Once the results of the PMP programme are available, a number standard will be implemented through Comitology.”

Previous stages of the UN/ECE PMP have demonstrated the correlation between particle mass and particle number, thus negating the justification for the enormous cost of introducing a particle counting requirement throughout the type approval and conformity systems. This correlation is also recognized in the proposed Regulation which states in a footnote to Table 1:

“The standards would be set so that they broadly correlate with the petrol and diesel mass standards.”

ACEA will comment further on the subject of particle count in the response to the relevant proposed Regulation when it is published. This subject is however under discussion within the UN-ECE and such investigations should not be doubled.

Durability

The penultimate paragraph of section 4 states:

“A further change is the proposal that the durability period over which manufacturers must ensure the functioning of pollution control devices has been extended from 80,000 km to 160,000 km. This change is to more realistically reflect the actual life of vehicles and ensure that emission control systems continue to function throughout the life of the vehicle.”

The 160,000 km durability requirement introduces an additional, impractical burden not evaluated within the Thematic Strategy on Air Pollution. A durability demonstration at the time of type approval is mentioned, the detail of which is unclear and open to interpretation. Additionally, this is equivalent to further tightening of the standards in a non-transparent way as the air quality and cost-effectiveness models are unable to take

account of such scenarios.

Heavy Passenger Cars

The final paragraph of section 4 states:

“A final aspect is the removal of the exception in previous legislation which enabled heavy passenger vehicles (Class M1, over 2500 kg) to be type approved as light commercial vehicles. There is no longer seen to be any justification for this exemption. “ACEA believes that there are vehicles of category M1 that certainly justify the same considerations which apply to light commercial vehicles.

The first group is vehicles with 7 or more seating positions. These vehicles fill the social needs of large families (they provide an environmentally attractive alternative to the use of 2 “normal” passenger cars) and of dedicated transport functions e.g. shuttle buses, minibuses, large taxi cabs. The packaging of 7 or more seats however necessitates the design of a heavier and often higher and/or wider vehicle with specific gearing, and hence slightly higher emissions. Motor caravans and other special purpose vehicles (e.g. ambulances, first-aid) also need to be considered under the same argument.

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The second of these groups is off-road vehicles with a maximum mass of more than 2,5 tons. These vehicles are an essential tool in rural communities throughout the world as well as for rescue and recovery services, public utility companies and many other essential applications and thus their specific needs are accounted for in many of the world’s major legislative systems. A definition already exists in the Framework Directive which requires approach, departure and ramp angles as well as ground clearances that are greater than those employed on standard cars. Compliance with these requirements, all of which are essential to off-road usage, along with the additional drive train losses of four wheel drive and often a secondary transmission, produces a vehicle with higher total loading, physically larger size akin to light commercial vehicles and hence again slightly elevated emissions.

The segment volumes of these vehicles are very low and the slightly elevated emissions if given the same provisions as light commercial vehicles (LCV) are negligible in terms of the overall traffic emissions and hence impact on air quality. Such measures can not be evaluated in air quality models as they would fall well below the sensitivity threshold. If the above 2 groups are not considered in the same way as light commercial vehicles, this would demand either NOx aftertreatment technology (not currently technically feasible) or a switch to gasoline versions of these products, with a corresponding detrimental impact on fuel economy and CO2 emissions. Costs of NOx aftertreatment technology for application in 2010 have already been submitted to the Commission as part of the Euro 5 questionnaire early in 2005.

As the air quality impact is negligible and the costs are substantial (particularly considering the low volume of these products), this measure can not be justified on an air quality basis.

2. Proposed Regulation

Moving on from the explanatory memorandum to the text of the proposed Regulation, ACEA addresses the following issues

- Scope
- Application Dates
- OBD service information
- Particulate number measurement
- Table 1: scope

Scope

Article 2 states that “this Regulation applies to all motor vehicles with positive ignition engines and ..”.

Article 5, section 3, which appears to replace section 5.2 in Annex I to Directive 70/220/EEC as latest amended (also summarized in Figure I.5.2.), then lists the requirements the vehicles must comply with to obtain type approval.

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The proposed Regulation however does not contain the Maximum Vehicle Weight limit of 3500 kg that has been a part of European Emissions legislation since 1983 (M vehicles with a positive ignition engine with a total mass higher than 3500 kg have to comply only with Type II, idle CO, and Type III, crankcase emissions, tests). Although the category N1 is itself limited to 3500 kg, category M or M1 are unlimited. In practice the vast majority of passenger cars have maximum technically permissible masses well below 3500 kg but there are a very small number of specialist vehicles above this limit (e.g. armored vehicles). Some types of special vehicles are exempted from the requirements of the framework Directive and ACEA does not see any logic in introducing the potential confusion of including these vehicles in the future emissions legislation. It is also unclear which requirements would apply to CNG buses, today covered by Directive 88/77/EEC.

OBD service information

Article 4, paragraph 3, states “...This OBD related information will be made available on a non discriminatory basis to any interested component, diagnostic tool or test equipment manufacturer and/or repairer”. Similar wording can already be found in the Block Exemption Directive and should not reappear in this proposal.

Application Dates

Article 6 includes the introduction dates of the proposal. An 18-month lead-time from the entry into force of this new Regulation is not sufficient since bringing a known but new technology into full production requires at least 3 years.

The proposed regulation should confirm January 2010 as date of entry into force of the new requirements for new vehicle types or impose 24 months after entry into force of the Regulation, whichever is later. A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Following the initial process of adaptation/development, manufacturers require two complete iterative cycles of summer and winter testing with sufficient time in between for implementation and validation of changes. Finally, the type approval process requires between 6 and 9 months to complete.

Industry has planned along with its supply base to introduce Euro 5 at 2010; as also indicated clearly in the Commission communication on Incentives which was published early in 2005. Vehicle model changes and the associated production line rebuilds have already been scheduled. Earlier pull ahead is not possible given the short time between now and the mandatory application of Euro 5 . Additionally, model cycle plans would thereby be significantly shortened for the preceding specifications, so driving unit cost upwards (lower number of units over which to amortize fixed costs).

When a major new engine emissions programme is Type Approved – it means not only redoing the emissions Approval, but many other Approvals could be affected such as:

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- EMC/RFI,
- Noise,

- Fuel economy / CO₂,
- End of Life (Bill of Materials)
- Power
- Smoke
- Masses and Dimensions including gradability checks
- Fire risk prevention
- Crash (frontal / side)

These Approvals may need to be updated, depending on the extent of the changes, this can be done either as a paperwork exercise or with completely new testing. Again, this places additional resource burdens on the Manufacturer and the Type Approval Authority.

Additionally, the same dates of entry into force for M1 and N1 vehicles class II and III will impose a burden to type approval authorities which have limited resources for the review of the extensive documentation needed to grant type approval for each of the many different vehicle types presently offered on the market.

Article 9 section 2 attempts to give a 3-month grace period between implementation of the measures of the Regulation and their application. The proposed text however states: “If the adoption of the implementing measures is delayed beyond [18 months after the date of adoption of this Regulation] the dates mentioned in Articles: 6 (2), 6(3), 12(1) and 12(3) shall be replaced by a date 3 months after entry into force of these implementing measures.”

The lead-time for the entry into force of any new requirement should in reality be based on the date of entry into force of the comitology Regulation, which complements the codecision

Regulation, since the stringency of the requirements and the measures that have to be adopted depend on the test and enforcement protocols

Particulate number measurement

“Whereas” (13) states:

“In order to ensure that emissions of ultra fine particulate matter (PM) are controlled, the Commission should also give consideration to the adoption of a number based approach to emissions of PM, in addition to the mass based approach which is currently used.”, But, the table of limit values in Annex I already contains a column for Number of Particulates. Furthermore, the heading of this column refers to a footnote which reads: “In the absence of a number standard, manufacturers should collect the PM number data and make these available at type approval. This shall be done according to the procedure referred to in Article 9.”

As the Commission is merely considering a number standard, no provision needs yet be made for its inclusion in the legislation. Regarding the above mentioned data collection, the automotive industry currently knows of no accepted and practical measurement method or calibration procedure (Article 9 refers to the introduction timing of the Regulation).

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Table 1: scope

The first row of limit values in Table 1 is headed Category M. As the scope of this Regulation should only cover M1 (and by manufacturer’s request M2), this row heading should be corrected to read M 1.

3. General Comments

Finally, ACEA has some general comments regarding the development and consultation process being employed for this legislation. Until recently, DG ENTR has

always developed new proposals concerning emission requirements within the Motor Vehicle Emission Group (MVEG), the expert group involving national delegations, industry associations and NGOs. This was not the case this time.

The above approach allowed an in-depth review of the data which supports the setting of new emission limit values and discussions on many other technical aspects of the new requirements beyond their feasibility and costs such as dates of implementation for the different vehicle categories, lead-time, the impact on other community objectives and the consequence of the extension of certain requirements to vehicle categories not covered in the past.

Pre-discussions within MVEG would also allow Member State experts to be better informed on the Commission's objectives and the details of its proposal well ahead of the debate at Council level.

Finally, the process leading to this draft proposal does not seem to be in conformity with the better regulation principles and the need to improve the competitiveness of the EU motor vehicle industry as presently discussed under the CARS 21 initiative.

Artikel i. d. VDI-Nachrichten vom 22.7.05: "Diesel: bald 80% weniger Schadstoffe"

Sehr geehrter Herr Verheugen,

vor wenigen Tagen habe ich vom Vorhaben gelesen, ab 2008 engere Grenzwerte, die EU5-Abgasnorm, einzuführen.

Ich habe just einige Tage zuvor ein neues Auto bestellt, einen Diesel, der im Okt.05 geliefert werden soll. Der Partikelfilter für dieses neue Auto muß nachgerüstet werden, weil er noch nicht zur Verfügung steht.

Mein neuer Wagen entspricht der EU4-Abgasnorm. In drei Jahren kann ich diese Norm nicht mehr erreichen. Soll ich mir alle drei Jahre ein neues Auto kaufen?? Nachrüstmaßnahmen erreichen bislang nie die jeweilige neue Norm!

Ich finde es grundsätzlich nicht fair- bei allem Umweltbewußtsein- dass in den letzten Jahren arg die Diesel-Pkw's ins Visier genommen wurden. Dabei stoßen seit Jahren diese Autos halb so viel CO₂ aus wie ein Benziner und CO₂ soll doch der Klima-Verschmutzer sein.

Lassen Sie doch bitt einmal diese Diesel-Pkws für einige Jahre in Ruhe, damit sie sich den Normen anpassen können, sofern die Industrie dies ermöglicht.

Mit freundlichen Grüßen

Dietrich Boehme

Paris, 8 September 2005

EURO 5 CONSULTATION - CCFA RESPONSE

Summary

The Comité des Constructeurs Français d'Automobiles (CCFA) is the trade association for the French automotive industry. It is composed of seven members: Alpine, Automobiles Citroën, Heuliez, Panhard & Levassor, Automobiles Peugeot, Renault, Renault trucks. CCFA takes care of the French automotive manufacturer's economic and industrial interests. CCFA produces studies, information's and communications for the benefit of its members, the public authorities as well as media. The CCFA is associated to the activities of ACEA, Association des Constructeurs Européens d'Automobiles based in Brussels and member of the OICA Organisation Internationale des Constructeurs d'Automobiles gathering on a world basis of national automotive trade associations.

The French automotive industry induces nearly 2 500 000 jobs in France, approximately 760 000 for production, 670 000 for automotive use (sales, repair, end of life, insurance, fuel sales, communication...) and 1 050 000 for transport activities (passengers, goods, road network, administration). The share of the French automotive production world wide amounts for 5.75 millions vehicles which is about 1/10 of the total world production. The turnover in the French automobile construction industry is around 115 billions euros car manufacturers and suppliers included. Nearly 7 billion euros per year are spent on research and development which correspond to 5% of the annual revenue of the French car manufacturers.

The French car manufacturers place a high priority into environmental issues related to

- CO2 reduction and fuel economy
- Local emissions reduction
- End of life

while considering the major positive effect of car fleet renewal closely related with the necessity of cost acceptability of new environmental technology.

CCFA welcomes the opportunity of the EC consultation and considers the following subjects of major concern for the future Euro 5 regulation:

- Not less than 200mg/km for NOx diesel limit
- Not before 2010 for entry date of Euro 5

- New HC and NOx limit for spark ignition engines not justified for air quality improvement
- Keep durability requirement as today
- Keep provision for M vehicles with mass exceeding 2 500 kg

Furthermore, a number of points need clarification

NOx limit for diesel passenger car

Diesel powertrain are well recognized for their fuel economy and CO2 emission reduction. The strategy of "downsizing" which is particularly well adapted to diesel makes even more efficient this approach. The CO2 saving and fuel efficiency benefit of the diesel must be kept at its highest possible value which implies a strategy of reasonable step down into NOx emission reduction. For passenger car no adequate exhaust technology, in terms of efficiency, durability, cost, fuel requirement... is in view for NOx reduction of diesel engines. The new technology SCR Selective Catalytic Reduction under application for heavy trucks will not be applicable for diesel passenger cars and small commercial vehicles which are the best performers below 120gCO2/km, at least in the time frame of Euro 5. For these reasons, it seems fully justify not to lower the NOx limit below 200mg/km.

PM measurement for diesel passenger car

The 5mgPM/km forces the implementation of exhaust particulate filters that will bring exhaust automobile to the rank of a minor source of PM in air according to the CAFE study. Scientific studies have shown that

- the mass measurement technique are consistent with this low level,
- PM filter are equally efficient for all sizes of particulates.

Considering the difficulties of a new PM evaluation, it is highly recommended to keep the mass measurement technique for the Euro 5 step.

PM emission for direct injection spark ignition engines

PM emission limit for lean burn direct injection spark ignition engine is in Euro 5 project but it is likely that such engines will operate in mixed mode stoichiometric and lean burn combustion. For this type of engines which are in an early stage of industrial development, it seems inappropriate to set limit issued from the diesel experience to an immature technology.

NOx emission reduction for direct injection spark ignition engines

This reduction will have a negligible effect on air quality but can have a blocking effect to the development of new direct injection spark ignition engine. Such new engines combining efficient air-fuel preparation (cooling effect), efficient combustion and downsizing potential for high efficiency and CO2 reduction could be eliminated before maturity.

HC limit for spark ignition engines

Emission limits of spark ignition engines are recognized to be very low, Auto-Oil 2 already stated that gasoline car emissions was not any more an environmental issue. Lowering HC limit for spark ignition engines will be of extremely limited impact on air quality but might have negative effect on alternative engine technologies and fuels such as natural gas which is promoted by the European Commission.

Timing

Until now EU directives were defining dates of application. The Euro 5 proposal shifts to a delay concept. We consider that it is of prime importance to maintain the date principle since the delay approach increases the planning uncertainty. Indeed the limit values and the date are unknown until the publication to the Official Journal of the Communities which is, according to the project 18 months before the enforcement date. We wish to recall that industrial planning is based on dates, not on delays.

We also wish to recall that 3 years are necessary for industrial implementation of a new regulation. This time is necessary to the suppliers, to set up the production processes and to reach the mass production rates. This time cannot be shortening due the increase of the number of models and the associated increased number of operations of validation.

It is observed that the regulation processes regularly accelerate in timing and number which generates an increase in investment costs for the industry in contradiction with the preservation of the European automotive industry competitiveness.

The CCFA position about timing of Euro 5 implementation is the following. The proposed regulation should be modified to 2010 for new types and 1 year after for all new registrations. To avoid overload of engineering and homologation bodies, we should stick to the traditional calendar : light commercial vehicles one year later than passenger cars.

Durability

A new concept of durability of the de-pollution systems is proposed by the Commission. This proposal needs detailed analysis of the test methodology to evaluate the practicability of the concept. This approach seems of the same idea as OBD which enable the checking of the de-pollution system up to a given mileage. Until now, the distance is 80 000 km. It is proposed to extend to 160 000 km the durability. The demonstration of the 160 000km durability requirement is not clear and is, in its principle equivalent to a supplementary tightening of the limits. For these reasons CCFA requests to delete this provision. 100 000 km seems more appropriate to the situation.

Heavy vehicles M1 >2.5 tons

Heavy vehicles M1 above 2.5 tons were until now were approved according the same rule as light commercial vehicles. CCFA believes that some M1 vehicles fully justify the maintaining of this rule among them

- Vehicles with 7 or more seating positions
- Vehicles with family and commercial use

CAFE study

CCFA wishes to signify to the Commission that the CAFE study, which data are taken by the Commission as a base to the Euro 5 project does not consider the proper economic data supplied by the car manufacturers. This practice is in complete contradiction with the basic principles of CARS 21 concerning the regulation processes elaboration.

entr-euro5@cec.eu.int

Transport Division

In your reply, please refer to File No.

File no. M: 4011/17-0027

Ref.: EI

Date 08 September 2005

Comments from the Danish EPA on the preliminary draft proposal for Euro 5

Introduction

On the 14th July 2005 the Commission published a preliminary draft proposal for a Regulation relating to emissions from motor vehicles (Euro 5). Stakeholders are invited to provide comments on the issues covered by the proposal before the 9th September 2005.

The short time limit combined with the lack of information of the economic consequences implies, that it at this stage will be possible only to make more general comments. More detailed comments will be prepared in relation to the final proposal which is expected to include an evaluation of the economic aspects.

General Comments

The Danish EPA finds a lot of positive elements in the proposal:

- a significant reduction in the limit values for particulates,
- introduction of limit values for particulates from petrol driven lean burn vehicles,
- a statement that a limit value for particle number will be introduced as soon as the ECE test method is ready for use,
- extension of the durability requirement to 160.000 km,
- removal of the exception for passenger cars with a total weight above 2.5 tons, and
- the introduction of the "split level" principle.

However at this stage the Danish EPA foresees problems in Denmark in relation to fulfil the future EU air quality standard for especially NO₂ and particles and the national emission ceiling set for NO_x. Therefore a further sharpening of some of the elements in the Commissions proposal are required. The Danish EPA will emphasize the following items:

Entry into force

The proposal includes a difference between the entry into force for "new types" and for "new vehicles" of 18 month. Earlier directives operate with a time difference of 12 month. The Danish EPA sees no arguments for a prolonging of the period. Further more the Danish EPA finds it necessary to include a latest date for entry into force for "new vehicles". For passenger cars and light commercial vehicles, class I, it should be 1st January 2010 at latest, and for light commercial vehicles, class II and III, no later than 1st January 2011.

Limit values for particulates from diesel vehicles

The intention of the proposal from the Commission is that new cars shall be equipped with filters. Danish EPA agrees with this intention. However the Danish EPA does not feel sure, that this will be the result with the limit values proposed for light commercial vehicles. In order not to repeat the experiences we have witnessed with heavy duty trucks, where it was the general opinion that the 80% reduction in limit value for Euro 4 compared to Euro 3 would secure general use of filters, the Danish EPA finds it necessary that the proposed limit values for particulates are reduced. In practice no big problems are foreseen by a reduction of the values. Measurements on vehicles equipped with filters show much lower emission figures than the proposed limit values.

Limit values for NO_x from diesel vehicles

Many new diesel vehicles already meet the limit values for NO_x proposed by the Commission. In order to be able to meet the future air quality standard for NO₂ and the national emission ceiling for NO_x, the Danish EPA finds it necessary already at this stage to introduce a further sharpening of the limit values. As a minimum a further step (Euro 6) must be defined which can be used as a basis for fiscal incentives. Such a model will contribute to the development of after treatment technology for reduction of NO_x.

Limit values for NO_x and HC from petrol driven vehicles

Type approval figures for Euro 4 vehicles in many cases show significant lower emission figures than proposed by the Commission for Euro 5. A further reduction in the limit values for NO_x and HC therefore should be possible without raising technical problems.

Limit values for CO and HC at low temperature

The Commission has proposed unchanged limit values compared to Euro 4. These limit values at low temperature are important for countries with cold climate, and the Danish EPA is of the opinion, that these limit values (especially for HC) shall be sharpened in line with the other emission limit values.

8 September 2005

DG Enterprise draft Euro V proposal

I am writing in response to the consultation on your draft Euro V proposal. As you will recall I wrote to Paul Weissenberg in November 2004 setting out the UK position at that time. I have reviewed your draft with colleagues in the light of this, and our own subsequent further consideration of Euro V. A number of new issues have arisen on which we must, at present, reserve our position; these are:

- The need for a second stage of Diesel NO_x Limits
- Petrol NO_x Limits
- Petrol HC Limits
- Light Goods Vehicle PM Limits (N₁, Class II & III)
- Implementation Dates
- Deletion of the Heavy Passenger Car derogation
- Extended Durability Requirements

I am sure we will not be alone amongst Member States in being cautious at this stage of development of a Commission proposal, and there is a need to obtain a collective view across HM Government on the above points; some we might be able to support, some might cause us difficulties. Clearly all aspects of your proposal will have an impact on the automotive sector, the environment and people's health. In order to reach a position, HM Government will have to consider the overall impact of all these aspects together as part of a whole, coherent package. We hope we can continue to work with you and your colleagues in the forthcoming months to share what data we have on the issues and feed in any ideas we might have.

In any case, I look forward to seeing the final proposal in due course.

Reaction on draft Euro 5 proposal

Ministry of Environment, The Netherlands.

In reaction to the draft proposal Euro 5, published by the Commission on 15 July 2005, we wish to take the opportunity to express our opinion on technical aspects of the proposal. Our opinion is developed after consultation of technical advisors at TNO Automotive.

Shortly after 9 September the Dutch State Secretary of Environment Mr. Van Geel will send a reaction to the Commission on behalf of the Dutch government on the ambition of the concept proposal Euro 5 in relation to the European Air Quality Standards.

In general

It's appreciated that the Commission speeded up the drafting process and published this (draft) proposal before the summer break. This is seen to be an important step to come to new emission standards for passenger cars and light duty vehicles. The serious and urgent problems most Member States are facing to comply with EU environmental and health targets can only be tackled by a fast introduction of an adequate set of new limit values.

In general the draft proposal seems to be well considered, but is lacking a second stage of more stringent NO_x limit values for diesel vehicles.

NO_x limit values diesel vehicles

- **Inconsistency Euro 5 and EU environmental and health targets**
- **Inclusion of Euro 6 is essential**
- **Euro 5 limit value of NO_x to be set at 150 mg/km for M1 diesel vehicles**

A major inconsistency can be found in the draft proposal. The Commission strongly expresses that some of the main objectives of this regulation are to provide high levels of environmental protection (recital 3) and to ensure that manufacturers manufacture and place on the market motor vehicles that do not adversely affect human health or the environment (art. 1). These objectives are of the utmost importance for all Member States facing serious air quality problems. On neither of the emission components dealt with in this proposal the Commission has shown to have made a check whether or not the limit values proposed fulfil these objectives.

For NO_x it's very clear that the limit values proposed for diesel vehicles are by far insufficient to meet the EU environmental objectives, especially the NO₂ air quality target and the NO_x national emission ceilings. Major national projections show for The Netherlands, but this will also be the case for many other Member States, to meet the NO₂ air quality target requires all road traffic to be clean. Diesel passenger cars meeting current Euro 4 petrol limit value of 80 mg/km can be considered to be sufficiently clean on NO_x. Because of the long lifetime of modern diesel cars (>12 years on average) to be able to meet the NO₂ air quality target as soon as possible requires these clean diesels to come on the market a.s.a.p.

Emission levels of diesel passenger cars in the order of 80 mg/km will require NO_x after treatment to be installed. NO_x after treatment technology however is not yet mature, but promising developments in both NO_x traps and SCR are underway, and will deliver within a couple of years, especially if a situation can be created favourable for manufacturers to develop the technology

required. The development of NO_x after treatment will not only bring benefits on the European market, but will also open new markets especially in the US, where there is a recent drive towards clean diesel as part of US energy policy, and Japan, where a 80 mg/km NO_x limit value will come into force in a few years time.

The best way to get this development going is to include an Euro 6 step, with focus on NO_x limit values for diesel engines, in the Euro 5 proposal. A similar 2-step approach turned out to be very successful in Euro 4 and Euro 5 for Heavy Duty where it led to a speedy development of SCR systems.

The inclusion of Euro 6 would strongly indicate that additional steps are required to meet EU environmental goals and would timely give the industry a perspective where to aim at in their development programmes. To be able to adequately respond to technological and environmental developments a review clause could be appropriate.

As stated before, meeting NO₂ air quality standards requires the introduction of low-NO_x diesel engines a.s.a.p. As there will be a reasonable interval between the coming into force of Euro 5 and Euro 6, from an environmental point of view it's all-important that Euro 5 diesel cars will have as low as reasonably achievable NO_x emissions. By the introduction of DPFs on diesel cars, manufacturers are no longer facing the Euro 4 trade off between low NO_x and low PM₁₀. With (further) internal engine measures NO_x limit values of 150 mg/km can be achieved for passenger cars, without substantial fuel penalty.

PM₁₀ limit values

- **Support for Euro 5 limit value of PM₁₀ for M1 diesel vehicles**
- **Euro 5 limit values of PM₁₀ to be set at 5 mg/km for all N1 classes**
- **Support for the introduction of PM₁₀ limit values for DI lean burn petrol engines.**

The Commission puts, rightly so, that the aim of the draft proposal is to set PM₁₀ limit values at levels that will de facto require DPFs on diesel vehicles. There is a clear environmental justification that DPFs should be introduced on all M1 and N1 diesel vehicles: delivery vans often have a high mileage in urban areas with high PM₁₀ concentrations. The Commission also puts, rightly so, that the DPFs should be of a closed (wall-flow) type in order to control the ultra fine particulate matter that is considered most harmful to health.

The PM₁₀ limit value of 5 mg/km for M1 diesel vehicles, combined with the additional provisions announced in the recitals, will ensure the application of closed filters on diesel passenger cars not only at present but also in the future.

The limit values proposed for N1 vehicles in classes II and III however do not ensure the application of closed DPFs. And above all, there is no technical justification to set higher limit values for these classes: closed DPFs can be applied on N1 vehicles as well; N1 class II and III vehicles equipped with closed DPFs are capable of reaching emission levels well below 5 mg/km; considerations of accuracy and repeatability of measuring procedures, being the main reason of setting M1 limit values at 5 mg/km, do not lead to different conclusions for M1 and N1.

To prevent petrol engines operating (partly) in lean burn mode from giving rise to substantial emission levels of (ultra fine) particulate matter, it's justified to follow the same approach for lean burn petrol vehicles and diesel vehicles.

HC and NO_x limit values petrol vehicles

Reasonable proposal. Some questions on evaporative emissions and fuel neutrality.

Most Euro 4 petrol vehicles on the market today already fulfil the Euro 5 limit values for NO_x and HC. The proposed 25% reduction in limit values seems reasonable to secure those low (test cycle) emissions of petrol vehicles, but overall environmental benefits are marginal. From an environmental point of view it makes more sense to put extra effort on reducing off-cycle

emissions and HC evaporative emissions. Did the Commission consider strengthening the limit value for evaporative emissions and could these considerations be shown in the proposal?

The proposed NO_x limit values might also hamper the future introduction of a set of fuel neutral limit values, a wish expressed by many stakeholders. Is the Commission striving for a structure of fuel neutral emission standards in the future? If so, how does Euro 5 fit in this aim?

M1 over 2500 kg

Support for abolishing current provision for heavy passenger cars.

The Commission puts, rightly so, that there is no longer seen to be any justification for the provision enabling heavy passenger cars (M1 over 2500 kg) to be type approved as light commercial vehicles.

Off-cycle emissions

Keep options open to respond to off-cycle emissions

Higher than expected real world emissions of modern vehicles are among the main causes many EU Member States face problems meeting air quality standards and national emission ceilings. It's good to see the Commission is taken this problem seriously by announcing that it will keep under review the need to revise the test procedure that provides the basis of emissions regulation and by its recent publication of a tender for a comprehensive off-cycle programme.

Recital 15 however seems to put some limitations to the options available for combating off-cycle emissions. A more open formulation, also allowing the possible introduction of Not-To-Exceed-limits (NTE), now under development in UN/ECE, expansion of In-Use-Compliance provisions, introduction of EU-wide road-side inspections, etc. would be preferable.

Durability

Support for extension to 160,000 km, but correspondingly changes in In-Use-Compliance and Deterioration Factors are required

In principle emission control systems should last as long as the actual lifetime of a vehicle. The durability period of 160,000 km, matching the 100,000 miles requirement already in use in the US for some 10 years, seems to be a reasonable compromise between the lifetime of the vehicle and the burden a longer period would put on manufacturers and type-approval authorities.

The In-Use-Compliance requirements and the Deterioration Factors (DF) should be changed correspondingly ensuring environmental benefits that can be expected of the extension of the durability period will also occur in real world conditions.

Legal aspects

- **Support for a regulation**
- **Don't repeal all Directives mentioned in art. 12 before Comitology Regulation is in force.**
- **Question on financial incentives: conditions for retrofitting same as for new cars?**
- **Question on LPG and CNG vehicles: include limit values in this regulation?**

From an implementation perspective the Commission's choice for a regulation, rather than a directive, is more logic and could mark a favourable trend in future proposals in the field of emission legislation for mobile sources.

The Commission's proposal to repeal Directive 70/220, all its amendments mentioned in article 12 and the obligation to repeal all national laws, regulation and administrative provisions related to 70/220 and its amendments, is not legally sound as this will deprive Member States of any possibility to check and enforce non-compliance of vehicles having type-approvals under Euro 4 or earlier emission standards. Parts of these objections might be overcome by a good Comitology Regulation, but only if this Comitology Regulation is adopted before or at the latest together with

the Co-decision Regulation. To be able to assess article 12 a Comitology Proposal should be published a.s.a.p.

The structure of article 7 suggests that Member States may introduce financial incentives for the retrofitting of in-use vehicle satisfying, among others, the condition that the incentive shall be for an amount lower than the additional cost of the device introduced, including its installation. Can the Commission confirm this interpretation? This broad interpretation is important, because of the long life of modern cars and consequently the need to have retrofit of in-use vehicles as an option in the meantime to solve air quality problems.

The draft proposal isn't covering emission limits of LPG and CNG vehicles. Did the Commission consider including LPG and CNG limit values in the regulation?

Dear Madam, dear Sir,

We note in Article 1.3 of the draft Regulation that replacement oxygen sensors are not mentioned in the scope.

CLEPA asked for the inclusion of replacement oxygen sensors type-approval requirements in the Euro 5 draft Regulation, according to the attached proposal prepared by CLEPA, ACEA and the Commission services.

Background: CLEPA submitted in 2001 to the EC Commission a draft proposal for type-approval of replacement oxygen sensors to be included in Directive 70/220/EEC. The draft was discussed with the vehicle manufacturers ACEA and with the members on the OBD Working Group of the EC Commission. An agreement was reached at the 8th meeting of this working group in February 2002. The drafting was then finalized by CLEPA, ACEA and the Commission services (M. Paul Greening) end of 2002, taking into account the latest amendments to the Annex on replacement catalytic converters as published in 2002/80/EC. This is the draft attached.

Then the Commission informed us that they would prefer to include these new requirements in the consolidation of 70/220/EEC under preparation rather than being submitted to CATP.

In the message attached below dated October 2004, we asked for the status of the proposal, but do not received yet a written answer from the Commission. In the meantime, we learnt there will be no consolidation of 70/220/EEC before the Euro 5 proposal.

Rationale:

- . Harmonization/Internal market: At least one Member States, Germany, requires national approval of such parts.

- . Environment: Oxygen sensors are important parts of the depolluting systems. Approved replacement parts according the proposed requirements guarantee the vehicle owner that these parts will allow a proper functioning of his/her vehicle depolluting system.

We remain at your disposal for any further information.

Yours faithfully

CLEPA aisbl- The European Association of Automotive Suppliers
Boulevard Brand Whitlock, 87
B- 1200 BRUSSELS



Replacement O₂ sensors

Draft amendments to 70/220/EEC As last modified by 2002/80/EC

Annex I

- Add three new points 2.24 to 2.26 to read:

2.24 : “*Original equipment oxygen sensor*” means an oxygen sensor covered by the type approval delivered for the vehicle and which is indicated in point 1.11 of the Appendix to Annex X to this Directive.

2.25: “*Replacement oxygen sensor*” means an oxygen sensor intended to replace an original oxygen sensor on a vehicle approved according to Directive 70/220/EEC which can be approved as a separate technical unit as defined in Article 4 (1)(d) of Directive 70/156/EEC.

2.26: “*Original replacement oxygen sensor*” means an oxygen sensor whose types are indicated in point 1.11 of the Appendix of the Annex X to this Directive but are offered on the market as separate technical units.

- Insert new section 5.3.9

5.3.9. Replacement oxygen sensors and original replacement oxygen sensors

5.3.9.1 : Replacement oxygen sensors intended to be fitted to EC type approved vehicles must be tested in accordance with Annex X...

5.3.9.2. Original replacement oxygen sensors, which are of a type covered by point 1.11 of the Appendix to Annex X, are offered on the market by the holder of the vehicle type approval and are intended for fitment to a vehicle to which the relevant type-approval document refers, do not need to comply with Annex X...to this Directive provided they fulfil the requirements of sections 5.3.9.2.1. and 5.3.9.2.2.

5.3.9.2.1. Marking

Original replacement oxygen sensors shall bear at least the following identifications:

- 5.3.9.2.1.1 The vehicle manufacturer's name or trade mark
- 5.3.9.2.1.2 Make and Identifying part number of the original replacement oxygen sensor as recorded in the information mentioned in point 5.3.9.3.



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5.3.9.2.2. Documentation

Original replacement oxygen sensor shall be accompanied by the following information :

- 5.3.9.2.2.1 The vehicle manufacturer's name or trade mark
- 5.3.9.2.2.2 Make and Identifying part number of the original replacement oxygen sensor as recorded in the information mentioned in point 5.3.9.3.
- 5.3.9.2.2.3 The vehicles (including year of manufacture) for which the original replacement oxygen sensor is of a type covered by point 1.11 of the Appendix to Annex X, including, where applicable, a marking to identify if the original replacement oxygen sensor is suitable for fitting to a vehicle that is equipped with an on-board diagnostic (OBD) system.
- 5.3.9.2.2.4 Installation instructions, when necessary.
- 5.3.9.2.2.5 In any case, the information must be available in the product catalogue distributed to points of sale by the vehicle manufacturer.

5.3.9.3. The vehicle manufacturer shall provide to the technical service and/or approved authority the necessary information in electronic format which makes the link between the relevant part numbers and the type approach documentation.

This information shall contain :

- make(s) and type(s) of vehicle
- make(s) and type(s) of original replacement oxygen sensors
- part number(s) of original replacement oxygen sensors
- type approval number of the relevant vehicle type(s)

Appendix to Annex X

Add new section 1.11

1.11 Oxygen sensors

1.11.1. Original equipment oxygen sensors tested to all relevant requirements of this Directive

1.11.1.1. Make and type of original equipment oxygen sensor as listed in item 3.2.12.2.2. of Annex II to this Directive (the information document)

1.11.2. Original replacement oxygen sensor tested to all relevant requirements of this Directive

1.11.2.1. Make(s) and type(s) of original replacement oxygen sensor as listed in item 3.2.12.2.2. of Annex II to this Directive (the information document)

ANNEX X...

EC TYPE-APPROVAL OF REPLACEMENT OXYGEN SENSOR AS SEPARATE TECHNICAL UNIT

1. SCOPE

This Annex applies to the EC type-approval, as separate technical units within the meaning of Article 4(1)(d) of Directive 70/156/EEC, of oxygen sensors to be fitted on one or more given types of motor vehicles of categories M1 and N1⁽¹⁾ as replacement parts

⁽¹⁾ As defined in Annex II Section A to Directive 70/156/EEC

2. DEFINITIONS

For the purpose of this Annex:

- 2.1. "Original equipment oxygen sensor" – see section 2.24 of Annex I
- 2.2. "Replacement oxygen sensor" – see section 2.25 of Annex I
- 2.3. "Original replacement oxygen sensor" – see section 2.26 of Annex I
- 2.4. "Type of oxygen sensor" means oxygen sensors which do not differ in such essential aspects as:
 - 2.4.1. Oxygen sensor type (universal or switch type sensor)
 - 2.4.2. Sensor dimensions and shape
 - 2.4.3. Connector dimensions, shape and number of pins
 - 2.4.4. Electrical connection (e.g. isolated ground)
- 2.5. "Vehicle type", see point 2.1 of Annex I.
- 2.6. "Approval of a replacement oxygen sensor" means the approval of a sensor intended to be fitted as a replacement part on one or more specific types of vehicles with regard to the limitation of pollutant emissions and, where applicable, OBD

2.7. For the purpose of this Annex, a “deteriorated replacement oxygen sensor” is a sensor that has been aged or artificially deteriorated to such an extent that it fulfils the requirements laid out in Directive 98/69/EC, Annex XI, Appendix 1, section 1. ⁽¹⁾

⁽¹⁾ For the purpose of the demonstration test of vehicles equipped with positive-ignition engines, when the regulated emission values measured under point 6.2.1 of this Annex are higher than the value measured during type approval of the vehicle, the difference has to be added to the threshold values mentioned in point 3.3.2 of Annex XI, to which the exceeding allowed in point 1 of Appendix 1 to Annex XI is applied.

3. **APPLICATION FOR EC TYPE-APPROVAL**

3.1. An application for EC type-approval pursuant to Article 3(4) of Directive 70/156/EEC of a type of replacement oxygen sensor shall be submitted by the manufacturer.

3.2. A model for the information document is given in Appendix 1 to this Annex.

3.3. The following must be submitted to the technical service responsible for the type-approval test:

3.3.1. Vehicle(s) of a type approved in accordance with Directive 70/220/EEC equipped with a new original oxygen sensor. This (these) vehicle(s) shall be selected by the applicant with the agreement of the technical service. It (they) shall comply with the requirements of Section 3 of Annex III to this Directive.

The test vehicle(s) shall have no emission control system defects; any excessively worn out or malfunctioning emission-related original part shall be repaired or replaced. The test vehicle(s) shall be tuned properly and set to manufacturer's specification prior to emission testing.

3.3.2. One sample of the type of the replacement oxygen sensor. This sample shall be clearly and indelibly marked with the applicant's trade name or mark and its commercial designation.

3.3.3. For a replacement oxygen sensor intended to be fitted to a vehicle equipped with an OBD system, an additional sample of the type of the replacement oxygen sensor. This sample shall be clearly and indelibly marked with the applicant's trade name or mark and its commercial designation. It must have been deteriorated as defined in point 2.7 above.

4. **GRANTING OF EC TYPE-APPROVAL**

- 4.1. If the relevant requirements are satisfied, EC type-approval pursuant to Article 4(3) of Directive 70/156/EEC shall be granted.
- 4.2. A model for the EC type-approval certificate is given in Appendix 2 to this Annex.
- 4.3. An approval number in accordance with Annex VII to Directive 70/156/EEC shall be assigned to each type of replacement oxygen sensor approved. The same Member State shall not assign the same number to another replacement oxygen sensor type. The same type-approval number may cover the use of that replacement oxygen sensor type on a number of different vehicle types.
- 4.4. When the replacement oxygen sensor is of a type indicated in point 1.11 of the Appendix to Annex X to this Directive, requirements of section 6 of this Annex need not to be checked.

5. **EC TYPE-APPROVAL MARKING**

- 5.1. Every replacement oxygen sensor conforming to the type approved under this Directive as a separate technical unit shall bear an EC type-approval mark.
- 5.2. This mark shall consist of a rectangle surrounding the letter "e" followed by the distinguishing number or letters of the Member State which has granted the EC type-approval:

| | |
|---------------------------|-------------------|
| 1 for Germany | 12 for Austria |
| 2 for France | 13 for Luxembourg |
| 3 for Italy | 17 for Finland |
| 4 for the Netherlands | 18 for Denmark |
| 5 for Sweden | 21 for Portugal |
| 6 for Belgium | 23 for Greece |
| 9 for Spain | 24 for Ireland |
| 11 for the United Kingdom | |

It must also include in the vicinity of the rectangle the "base approval number" contained in point 4 of the type-approval number referred to in Annex VII to Directive 70/156/EEC, preceded by the two figures indicating the sequence number assigned to the most recent major technical amendment to Directive 70/220/EEC on the date EC component type-approval was granted. In this Directive, the sequence number is 00

5.3. The approval mark referred to in point 5.2 shall be clearly legible and indelible.

5.4. Appendix 3 to this Annex gives examples of arrangements of the approval mark and approval data referred to above.

6. **REQUIREMENTS**

6.1. General requirements

- 6.1.1. The replacement oxygen sensor shall be designed, constructed and capable of being mounted so as to enable the vehicle to comply with the provisions of this Directive which it was originally in compliance with and that pollutant emissions are effectively limited throughout the normal life of the vehicle under normal conditions of use.
- 6.1.2. The installation of the replacement oxygen sensor shall be at the exact position of the original equipment oxygen sensor and other sensors, if applicable, shall not be modified.
- 6.1.3. If the original equipment oxygen sensor includes thermal protection, the replacement oxygen sensor shall include equivalent protection.
- 6.1.4. The replacement oxygen sensor shall be durable, that is, designed, constructed and capable of being mounted so that reasonable resistance to the corrosion and oxidation phenomena to which it is exposed is obtained, having regard to the conditions of use of the vehicle.

6.2. Requirements regarding emissions

The vehicle(s) indicated in point 3.3.1 of this Annex, equipped with a replacement sensor of the type for which approval is requested, shall be subjected to a Type I test under the conditions described in the corresponding Annex to this Directive in order to compare its performance with the original oxygen sensor according to the procedure described below.

6.2.1. Determination of the basis for comparison

The vehicle(s) shall be fitted with a new original oxygen sensor (see point 3.3.1) which shall be run in with at least one type I test including 5 parts two of the operating cycle (as defined in point 3 of Appendix 1 to Annex III to this Directive);



After this preconditioning, the vehicle(s) shall be kept in a room in which the temperature remains relatively constant between 293 and 303 K (20 and 30 °C). This conditioning shall be carried out for at least six hours and continue until the engine oil and coolant temperature are within ± 2 K of the temperature of the room. Subsequently three type I tests shall be made.

6.2.2. Exhaust gas test with replacement oxygen sensor

The original equipment oxygen sensor of the test vehicle(s) shall be replaced by the replacement oxygen sensor (see point 3.3.2) which shall be run in with at least one type I test, including 5 parts two of the operating cycle (as defined in point 3 of Appendix 1 to Annex III to this Directive);

After this preconditioning, the vehicle(s) shall be kept in a room in which the temperature remains relatively constant between 293 and 303 K (20 and 30 °C). This conditioning shall be carried out for at least six hours and continue until the engine oil and coolant temperature are within ± 2 K of the temperature of the room. Subsequently three type I tests shall be made.

6.2.3. Evaluation of the emission of pollutants of vehicles equipped with replacement oxygen sensors

The test vehicle(s) with the original equipment oxygen sensor shall comply with the limit values according to the type-approval of the vehicle(s) including, if applicable, the deterioration factors applied during the type-approval of the vehicle(s).

The requirements regarding emissions of the vehicle(s) equipped with the replacement oxygen sensor shall be deemed to be fulfilled if the results meet, for each regulated pollutant (CO, HC, NO_x and particulates) the following conditions:

$$M \leq 0,85 S + 0,4 G \quad (1)$$

$$M \leq G \quad (2)$$

where:

M mean value of the emissions of one pollutant or the sum of two pollutants ⁽¹⁾ obtained from the three type I tests with the replacement oxygen sensor.

S mean value of the emissions of one pollutant or the sum of two pollutants ⁽¹⁾ obtained from the three type I tests with the original oxygen sensor.

G limit value of the emissions of one pollutant or of the sum of two pollutants ⁽¹⁾ according to the type-approval of the vehicle(s) divided by, if applicable, the deterioration factors determined in accordance with



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point 6.3.As appropriate with respect to the limit values defined in point 5.3.1.4 of Annex 1 of this Directive.

Where approval is applied for different types of vehicles from the same car manufacturer, and provided that these different types of vehicle are fitted with the same type of original equipment oxygen sensor, the type I test may be limited to at least two vehicles selected after agreement with the technical service responsible for approval.

6.3 Requirements regarding durability

The replacement oxygen sensor shall comply with the requirements of point 5.3.5 of Annex I to this Directive, i.e. type V test or deterioration factors from the following table for the results of the type I tests.

Table X... 6.3

| Engine Category | Deterioration factors | | | | |
|------------------------------|-----------------------|-------------------|--------------------|--------------------|--------------|
| | CO | HC ⁽¹⁾ | NOx ⁽¹⁾ | HC+NOx | Particulates |
| Positive-ignition engines | 1,2 | 1,2 | 1,2 | 1,2 ⁽²⁾ | - |
| Compression ignition engines | 1,1 | - | 1,0 | 1,0 | 1,2 |

⁽¹⁾ *Applicable only to vehicles approved to Directive 98/69/EC or subsequent amending Directives.*

⁽²⁾ *Applicable only to positive-ignition vehicles approved to Directive 96/69/EC or earlier Directives.*

6.4 Requirements regarding OBD compatibility
(applicable only to replacement oxygen sensors intended to be fitted to vehicles equipped with an OBD system). OBD compatibility demonstration is required only when the original oxygen sensor was monitored in the original configuration, and must be demonstrated at least for one car of each car manufacturer whose original oxygen sensors can be replaced by the replacement oxygen sensors. The vehicle used for demonstration tests, should have been approved to the most comprehensive standard available for this vehicle family(e.g. EOBD standard for type approval after 1.1.2005).

6.4.1 The compatibility of the replacement oxygen sensor with the OBD system shall be demonstrated by using the procedures described in Directive 98/69/EC, Annex XI, Appendix 1.

6.4.2 The provisions in Directive 98/69/EC, Annex XI, Appendix 1 applicable to components other than the oxygen sensor shall be applied if the original oxygen sensor was used for any other diagnostic purpose (e.g. for catalytic converter or secondary air system diagnosis) .



- 6.4.3 The applicant for approval may use the same preconditioning and test procedure as used during the original type approval. In this case, the Type Approval Authority shall provide, on request, the number and type of preconditioning cycles and the type of test cycle used by the original equipment manufacturer for OBD testing of the oxygen sensor.
- 6.4.4. In order to verify the correct installation and functioning of all other components monitored by the OBD system, the OBD system shall indicate no malfunction (*no stored fault codes*) prior to the installation of any of the replacement oxygen sensors. An evaluation of the status of the OBD system at the end of the tests described in point 6.2.1 of this Annex may be used for this purpose.
- 6.4.5. When the test vehicle has no emission control system defects, the MI must not activate during vehicle operation required by point 6.2.2. of this Annex.
- 6.4.6. Tests to be conducted to demonstrate the OBD compatibility in case of present oxygen sensor defects:
At least one test with a deteriorated replacement oxygen sensor (as defined under point 2.7) by using the procedures described in Directive 98/69/EC, Annex XI, Appendix 1. The MI must properly activate according to the requirements

7. DOCUMENTATION

Each new replacement oxygen sensor shall be accompanied by the following information :

- 7.1 The oxygen sensors manufacturer's name or trade mark.
- 7.2 The vehicles (including year of manufacture) for which the replacement oxygen sensors is approved, including, where applicable, a marking to identify if the replacement oxygen sensor is suitable for fitting to a vehicle that is equipped with an on-board diagnostic (OBD) system.
- 7.3 Installation instructions, where necessary.

In any case, the information must be available in the product catalogue distributed to points of sale by the manufacturer of oxygen sensors.

8. MODIFICATION OF THE TYPE AND AMENDMENTS TO APPROVALS

In the case of modification of the type approved pursuant to this Directive, the provisions of Article 5 of Directive 70/156/EEC shall apply.

9. CONFORMITY OF PRODUCTION

Measures to ensure the conformity of production shall be taken in accordance with the provisions laid down in Article 10 of Directive 70/156/EEC.

9.2. Special provisions

9.2.1. The checks referred to in point 2.2 of Annex X to Directive 70/156/EEC shall include compliance with the characteristics as defined under point 2.4 to this Annex.

9.2.2. For the application of point 2.4.4 of Annex X to Directive 70/156/EEC, the tests described in point 6.2 of this Annex (requirements regarding emissions) may be carried out. In this case, the holder of the approval may ask, as an alternative, to use as a basis for comparison not the original equipment oxygen sensor, but the replacement oxygen sensor which was used during the type-approval tests (or another sample that has been proven to conform to the approved type). Emissions values measured with the sample under verification shall then on average not exceed by more than 15 % the mean values measured with the sample used for reference.



Appendix 1

Information document No . . . relating to the EC type-approval of replacement oxygen sensors (Directive 70/220/EEC as last amended by Directive . . .)

The following information, if applicable, must be supplied in triplicate and include a list of contents. Any drawings must be supplied in appropriate scale and sufficient detail on size A4 or on a folder of A4 format. Photographs, if any, must show sufficient detail.

If the system, components or separate technical units have electronic controls, information concerning their performance must be supplied.

0. GENERAL

0.1. Make(trade name of manufacturer):.....

0.2. Type:.....

0.5. Name and address of manufacturer:.....

0.7. In the case of components and separate technical units, location and method of affixing of the EC approval mark:.....

0.8. Address(es) of assembly plant(s):.....

1. DESCRIPTION OF THE DEVICE

1.1. Make and type of the replacement oxygen sensor:.....

1.2. Drawings of the replacement oxygen sensor, identifying in particular all the characteristics referred to in Section 2.4 of this Annex:.....

1.3. Description of the vehicle type or types for which the replacement oxygen sensor is intended:.....

1.3.1. Number(s) and/or symbol(s) characterising the engine and vehicle type(s):.....

1.3.2. Is the replacement oxygen sensor intended to be compatible with OBD requirements?
(Yes/No)⁽¹⁾:.....

1.4. Description and drawings showing the position of the replacement oxygen sensor relative to the engine exhaust manifold(s):.....

(1) Delete as inapplicable.

(2)



Appendix 2

Model

(Maximum format: A4 (210 mm × 297 mm))

EC TYPE-APPROVAL CERTIFICATE

**STAMP OF
ADMINISTRATION**

Communication concerning the

- type-approval ⁽¹⁾,
- extension of type-approval ⁽¹⁾,
- refusal of type-approval ⁽¹⁾,
- withdrawal of type-approval ⁽¹⁾,

of a type of vehicle/component/separate technical unit ⁽¹⁾ with regard to Directive,.....
as last amended by Directive.....

Type-approval number:.....

Reason for extension:.....

SECTION I

0.1. Make (trade name of manufacturer):

0.2. Type:

0.3. Means of identification of type if marked on the vehicle/component/separate technical
unit ⁽¹⁾, ⁽²⁾:

0.3.1. Location of that marking:

0.4. Category of vehicle ⁽¹⁾ ⁽³⁾:

0.5. Name and address of manufacturer:

0.7. In the case of components and separate technical units, location and method of affixing of the EC
approval mark:.....

0.8. Address(es) of assembly plant(s):

⁽¹⁾ Delete where not applicable.

- (²) If the means of identification of type contains characters not relevant to describe the vehicle, component or separate technical unit types covered by this type-approval certificate such characters shall be represented in the document by the symbol: "?" (e.g. ABC??123??).
- (³) As defined in Annex II Section A to Directive 70/156/EEC.



SECTION II

1. Additional information (where applicable): See addendum
2. Technical service responsible for carrying out the tests:
3. Date of test report:
4. Number of test report:
5. Remarks (if any): See addendum
6. Place:
7. Date:
8. Signature:
9. The index to the information package lodged with the approval authority, which may be obtained on request, is attached.

Addendum

to EC type-approval certificate No . . .

concerning the separate technical unit type-approval of replacement oxygen sensors for motor vehicles
with regard to Directive 70/220/EEC as last amended by Directive . .

1. Additional information
 - 1.1. Make and type of the replacement oxygen sensor:
 - 1.2. Vehicle type(s) for which the oxygen sensor type qualifies as replacement part:
 - 1.3. Type(s) of vehicle(s) on which the replacement oxygen sensor has been tested:
 - 1.3.1. Has the replacement oxygen sensor demonstrated compatibility with OBD requirements?
(Yes/No)⁽¹⁾:.....
5. Remarks:

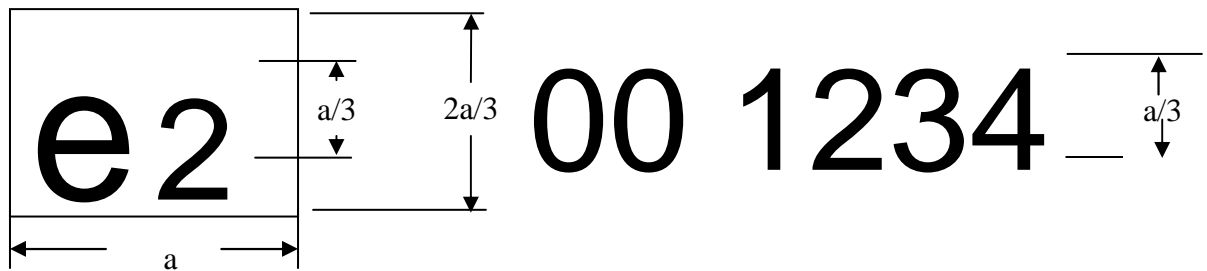
⁽¹⁾ Delete as inapplicable.

Appendix 3

Model for the EC type-approval marks

(see point 5.2 of this Annex)

$a \geq 5 \text{ mm}$



The above approval mark affixed to a component of a replacement oxygen sensor shows that the type concerned has been approved in France (e 2), pursuant to this Directive. The first two digits of the approval number (00) refer to the sequence number assigned to the most recent amendments made to Directive 70/220/EEC. The following four digits (1234) are those allocated by the approval authority to the replacement oxygen sensor as the base approval number.

MEMORANDUM

To : DG Enterprise and Industry
European Commission

Paris, 9 September 2005

From : ECMT Secretariatⁱ

Stakeholder Consultation EURO 5 Emission Limits for Light Duty Vehicles

Transport Ministers

The environmental impacts of traffic are an important aspect of many of the decisions made by Transport Ministers. The effectiveness or otherwise of vehicle emissions regulations protecting air quality has important consequences for policies on the management of traffic demand and investment in infrastructure.

Real-World Emissions

The successive reductions in emissions standards under EURO 1, 2, 3 and 4 regulations have not resulted in the improvements in air quality hoped for. Whilst test emission limit values have been cut many-fold, persistent air quality problems remain. It appears that the main reason for this is that emissions from vehicles in real-world driving conditions differ significantly from emissions under test conditions, particularly in the case of NO_x.

There appear to be similar issues with the way the regulations calibrate the on-board diagnostic systems used to ensure compliance with emissions limits, and the latitude these systems allow for limits to be exceeded before faults are indicated may be too large.

The Proposal for Euro 5 emission limits for passenger cars and light duty vehicles provides an opportunity to address these issues.

New Regulatory Approach

The proposal to consolidate and replace the existing Directive and regulations with the draft Regulation is welcome, and in particular the new “split-level approach”.

The new approach improves the way EU emissions regulations address the regulatory risks for manufacturers associated with changes in technology and changes in measurement techniques. The approach set out in section 4, paragraph 4, of the Explanatory Memorandum is highly appropriate.

In the Proposed Regulation itself, however, the new approach is only identified in the preamble (clause 11). It would seem appropriate to provide for this new approach under a specific Article, *Procedures*, to be inserted before article 2 or before article 3.

The new approach to reducing regulatory risk for manufacturers is applied in the Proposal to reducing particulate emissions. As with previous modifications to the

regulations the Proposal reduces the limit for the mass of particles emitted but it also provides for a new limit to be set in the near future on the number of particles that can be emitted. This provides a clear indication to manufacturers as to the most cost-effective strategies to adopt in developing emissions control technologies.

Similarly, expected changes in the particulate measurement protocol are anticipated in the Regulation (rather than omitted on the grounds that they can not be fully specified by the deadline for submission of the Proposal) and this will provide clear indications to industry on the future direction for legislation.

Clauses (13) and (14) in the preamble to the Proposed Regulation set out this new approach to controlling particle emissions. It would seem appropriate to reflect this directly in the Articles of the Regulation either by making reference to clauses 13 and 14 of the preamble in Article 1.2 or by adding a specific Article.

Extending the New-Regulatory Approach to Address Real-World Emissions

This approach could also be applied more specifically to address the problems set out above under the heading Real-World Emissions.

Clause (15) of the preamble at the beginning of the Proposed Regulation notes that the Commission should keep under review the need to revise the New European Drive Cycle test procedure.

This clause is highly appropriate and could be extended to read:

The Commission should keep under review the need to revise the New European Drive Cycle as the test procedure that provides the basis of emissions regulations. Updating or replacement will be required to better reflect operating conditions in the real world, to reflect changes in vehicle specification and driver behaviour, and to counter tampering with emissions control systems or engine tuning that defeats emissions regulations.

In particular, it is important to signal to industry the replacement of the New European Driving Cycle test, in the relatively near future, with the Common Artemis Driving Cycle test or a similar improved test procedure. An additional clause in the preamble with a reference to it in Article 1, or a specific article to this effect, would appear sensible to provide the necessary signal to industry that, in selecting emissions control technologies and strategies, effectiveness in reducing emissions in all the conditions encountered in typical real world conditions will be increasingly important.

Similarly it would appear appropriate to signal to manufacturers that in the near future the tolerance thresholds for emissions control fault monitoring by on-board diagnostics systems will be reduced. A further clause in the preamble or article to this effect should also be included in the regulation.

Improving the real-world performance of emissions control systems by these two measures may result in greater overall emissions reductions than the 20% lowering of the NO_x emissions limit actually included in the draft proposal.

NOx Emission Limits

As noted in the proposal, many existing vehicles already respect the new proposed NOx limit for diesel cars of 200 mg/km. Current emissions regulations in Japan and the USA already set significantly lower limits for NOx emissions from diesel cars. European manufacturers have entered these markets. As the proposal notes, the effectiveness of the technologies available to meet lower limits is not yet fully understood. However, with deployment in Japanese and American markets evidence will shortly become available to determine which systems perform best (in the real world) and what limit values are therefore appropriate. It would thus seem sensible to signal this development in the proposed regulation. This can not be addressed under the second tier of the new split-level approach as limit values need to be agreed by Council and Parliament, but an indication at least in the preamble to the regulation that more significant reductions in NOx limits are anticipated would provide a valuable signal to manufacturers in making cost-effective decisions on emissions reduction strategies.

Definitions (Article 3)

Definition 6, of “particulate pollutant” appears unnecessarily narrow.

“Normal conditions of use”, as mentioned in Article 4.2, should be defined.

“Normal use”, as mentioned in Article 5.1, should be defined.

Conclusions

The ECMT Secretariat welcomes the Proposed Regulation, the improved procedures it sets out and the new emissions limits proposed. The Proposal could, however, be improved in two ways:

- to give an early indication to industry of expected subsequent reductions, below 200 mg/km, in the NOx emissions limits for diesel vehicles;
- to use the new procedures to indicate future steps that are likely to be taken (modifications to test cycles and on-board diagnostics) to ensure that the regulations reduce emissions more effectively under real-world driving conditions.

A report on the relation of emission limits to actual emissions under real-world driving conditions is under preparation for the ECMT Group on Transport and the Environment and will be made available to the Commission Services.

ⁱ The views expressed here are those of the Secretariat of the European Conference of Ministers of Transport. They do not necessarily represent the views of Transport Ministers in all Member countries of the Conference.

ECMT is an intergovernmental organisation established by a Protocol signed in Brussels on 17 October 1953. It is a form in which Ministers responsible for transport cooperate on policy. As of 9 September 2005 there were 43 full Member countries, 7 Associate countries and 1 Observer country in the membership of the organisation.



EUROPEAN COUNCIL FOR MOTOR TRADES AND REPAIRS
CONSEIL EUROPÉEN DU COMMERCE ET DE LA RÉPARATION AUTOMOBILES
EUROPÄISCHER VERBAND DES KRAFTFAHRZEUGGEWERBES

CECRA 2005-305

To the attention of
The European Commission
DG Enterprise

Brussels, 08 September 2005

Subject: Stakeholder consultation on Euro V

During the elaboration of the Euro IV directive, the European Commission announced that it would try to rapidly find a solution for delivering access to technical information.

CECRA considers that the elaboration of the EURO V directive is the right chance to set out a standard to allow all concerned parties to access technical information.

CECRA believes that it would be easiest to reach this aim using the OASIS standard which has already been elaborated by all the stakeholders of the automotive industry under the auspices of the European Commission.

CECRA, therefore, asks the Commission to include the OASIS standard into the EURO V directive.

CECRA, established in 1983, is THE European Federation regrouping 26 national professional associations representing the interests of the motor trade and repair businesses and 13 European Dealer Councils on behalf of vehicle dealers for specific makes. In figures CECRA represents all, more than 350.000, enterprises in the EU; of which 118.000 are authorized dealers and repairers and 232.000 independent repairers. They employ 2.450.000 employees and have a turnover of 520 billion € per year of which 100 billion € per year is for parts.



9 September 2005

Comments by the European Environmental Bureau to the Commission's draft proposals for Euro 5

The damage to human health and the environment caused by air pollutants constitutes one of the most serious environmental problems in Europe and urgent action for reducing the emissions is necessary in all sectors. Currently air pollution in Europe leads to some 370.000 premature deaths annually through exposure to fine particles (PM) and ozone. This means that the toll from air pollution, much of which comes from cars and trucks, is more than seven times greater than the number of deaths from road accidents.

More than 90 per cent – nearly 350,000 – of these premature deaths are caused by fine particles, the remaining 21,000 by ground-level ozone. These pollutants also cause a large number of morbidity effects that affect a much greater number of people. For example, the current levels of PM are estimated to be responsible for around 100,000 cases of respiratory or cardiac hospital admissions, 30 million respiratory medication use days, and several hundred million restricted activity days each year.

Improving air quality is listed as one of the priority areas in the EU's Sixth Environment Action Programme, and in article 2 it is stated that the programme aims at *"contributing to a high level of quality of life and social well being for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment..."*.

This aim is to be pursued by objectives and actions as outlined in article 7. Regarding air quality the stated objective is to achieve *"levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment"*. Among the key measures listed are the development of a thematic strategy on air pollution, and the review and updating of air quality standards and national emission ceilings, with a view to reach the long-term objective of no exceedance of critical loads and levels.

Additional action for reducing emissions from motor vehicles is necessary, both for attainment of the health and environmental objectives of the Sixth Environment Action Programme, as well as to help member states to meet the EU air quality standards for PM, NO₂, and ozone. Therefore the introduction of stricter emission standards for motor vehicles is urgently needed.

In the light of these challenges, the pre-proposal for Euro 5 is disappointing and clearly not far-reaching enough. Although the proposed standards are not likely to enter into force before 2008, they do not even go as far as today's available technology.

We call on the Commission to take responsibility for the protection of health and environment in the European Union by proposing emission standards that help to achieve this goal.

We therefore call for:

- a reduction of at least 90 % of particle emissions from diesel passenger cars to 2.5 mg/km or lower, instead of 5 mg/km as in the current pre-proposal (even levels of 2-1 mg/km can be attained)

- a 70 % reduction of NO_x emissions from diesel cars, to 80 instead of 200 mg/km for passenger cars. A strict NO_x standard would require application of Selective Catalytic Reduction (SCR), which offers great benefits in terms of fuel consumption and CO₂ emissions and is the best solution over the lifetime of the car
- a particle number standard not to be decided upon in comitology, but by Council and Parliament;
- an increase of the in use compliance age to 200,000 rather than the current 100,000 km;
- 2008 as introduction year for the standards to enter into force
- a thorough overhaul of the regulatory strategy for emissions control, in particular in use compliance monitoring, because of the increasing differences between the emissions measured during the tests and the actual performance.

EEB - European Environmental Bureau
 Bvd de Waterloo, 34
 1000 Brussels – Belgium

The EUROPEAN ENVIRONMENTAL BUREAU is a Federation of 147 environmental citizens' organisations based in all EU Member States and most Accession Countries, as well as a few neighbouring countries. The aim of the EEB is to protect and improve the environment of Europe and to enable the citizens of Europe to play their part in achieving that goal.

STAKEHOLDER CONSULTATION – EURO 5 EMISSION LIMITS FOR LIGHT DUTY VEHICLES

Comments from ECOS - European Environmental Citizens' Organisation for Standardisation:
www.ecostandard.org

As an environmental NGO involved in standardisation work, ECOS fully supports the need to regulate (EURO 5) emission limits for light duty vehicles for the following reasons:

- It is vital that this draft Commission Proposal is changed so that it is seen in a more favourable light by the Council & Parliament
- This would help better protect both human health & especially the urban environment
- Stricter Euro 5 regulations should be met by all Member States
- Try to reach the target of 120 g/km CO2 emissions for passenger cars, by applying the selective catalytic reduction (SCR)
- Promote diesel cars which use less fuel
- Promote hybrid vehicles which use even less fuel and more environmentally friendly though its not strictly within the scope of EURO 5
- We are in favour of an at least a 90% reduction of particle emissions from diesel cars (instead of 80%)
- NOx emissions of diesel vehicles should also be reduced by 70 rather than 20% and facilitating the use of SCR which curbs CO2 emissions
- The compliance age should be increased to 200,000 instead of the current 100,000 km
- 2008 seems feasible as an introduction year rather than a relative date after entry-into-force
- Strongly support the closing of the SUV "loophole"
- Increase durability requirements from 80,000 to 160,000 kms which are more in line with world figures
- Introduction of a particle standard for direct injection petrol engines

ECOS - European Environmental Citizens' Organisation for Standardisation



Europe's voice for sustainable transport

Make the best technology drive Europe forward

Position Paper and input to the European Commission's Consultation on 'EURO 5' emission standards for passenger cars and vans

Submitted by:

European Federation for Transport and Environment (T&E)

Also on behalf of

EPHA Environment Network

The Danish Ecological Council

Netherlands Society for Nature and Environment

Stop Poisons Santé / Belgian Society for Environmental Health

Key Messages – Summary of the position paper

The draft proposals for 'Euro 5' emission standards for cars and vans as released by the European Commission in July 2005 are in many respects disappointingly weak. A significant tightening of the standards is technically, economically and politically feasible and is necessary to:

- Protect human health and the environment;
- Provide Member States with a badly needed tool to comply with EU air quality regulations.
- Overcome the trade-off with between NO_x and CO₂ emissions, e.g. by application of Selective Catalytic Reduction. This would bring the long-standing 120 g/km CO₂ emissions target for passenger cars a step closer, provide consumers with diesel cars that burn less fuel and reduce the EU's oil import burden;
- Create a home market for 'clean' diesel cars, which would make it much easier to export European diesel technology to foreign markets, most notably the US;
- Anticipate the fact that Council and Parliament in the past usually tightened vehicle emission proposals from the European Commission, and that this draft proposal, if unchanged, is highly likely to suffer the same fate.

More specifically, the NGOs demand:

- A 90 rather than 80 per cent reduction of particle emissions from diesel cars - to 2 instead of 5 mg/km. Even a reduction to 1 mg/km is feasible, and measurable with the new protocol from the Particle Measurement Programme
- A 70 rather than 20 per cent reduction of NO_x emissions from diesel cars - to 75 instead of 200 mg/km. Such a standard would make it possible to sell European diesel technology in the US and be a step towards global harmonisation of standards. In addition, it would most probably lead to application of Selective Catalytic Reduction (SCR), which would end current cycle-beating practices and offer great benefits in terms of fuel consumption and CO₂ emissions.
- A 75 rather than 25 per cent reduction of NO_x and HC emissions from petrol cars. Same reason: such a reduction is much better in line with US and Californian standards and is technically feasible;
- An increase of the 'durability' AND the 'use compliance' ages to 200,000 rather than the current 100,000 km, as these mileages much better represent the lifetime of today's cars;
- A particle number standard not to be decided upon in comitology, but by Council and Parliament.
- 2008 as introduction year rather than a relative date after publication of the law, as this offers more certainty and an incentive to decide quickly;
- to learn from the past, namely the fact that industry cost figures in the past have consistently been drastically over-estimated;
- An announcement for a thorough overhaul of the regulatory strategy for emissions control, in particular in use compliance monitoring, now reports of chip-tuning and other cycle-beating practices are becoming ever more frequent.

NGOs welcome:

- The move to close the SUV 'loophole';
- The move to increase the durability requirements, although it does not go far enough and also the in-use compliance age should be increased;
- The intended introduction of a particle standard for direct injection petrol engines, although we believe that the standard could be tightened, in line with diesel.

Chapter 1: Introduction

Emissions from cars and vans are regulated by Directive 70/220/EEC and its amendments. These standards prescribe the maximum emission levels in tailpipe exhaust gases for all new vehicles sold in the European Union. New EURO standards are amendments to the Directive. Directive 98/70, for example, introduced the 'Euro 3' and 'Euro 4' standards for cars and vans (the so-called *light duty vehicles*). The current proposal for 'Euro 5' constitutes the next step.

Confusingly, the standard currently in force for heavy duty vehicles is also called Euro 5. A 'Euro 6' proposal is expected next year.

A good overview of EU emission standards for cars and vans can be found on <http://www.dieselnet.com/standards/eu/ld.html>

The discussion on a new 'Euro 5' standard began in 2003. The latest move is a draft Commission proposal issued in July 2005. The standards might enter into force in 2008 or 2009. The draft proposal can be found on http://europa.eu.int/comm/enterprise/automotive/pagesbackground/pollutant_emission/stakeholder_consultation/euro_5_draft_reg.pdf.

This document is written as a response to that draft proposal.

Chapter 2: The case for more stringent standards than the Commission's proposal

The health and environment case for cleaning up cars

Road transport is the biggest contributor to NO_x emissions and the second biggest to PM₁₀ emissions. Currently, air pollution leads to about 370 000 premature deaths per year in Europe. Other problems include premature mortality, aggravation of respiratory and cardiovascular disease, aggravation of existing asthma, acute respiratory symptoms, chronic bronchitis, and decreased lung function. Numerous studies also link exhaust gases to increased incidence of lung cancer.

Furthermore biodiversity is threatened in more than 60% of European ecosystems because of nitrogen deposition above the critical loads. [5]. although environmental standards have been tightened, this 'does not appear to have a significant influence on the air quality' (EEA 2003). No clear improving trend is (yet?) visible in measurements. Also the ozone problem has remained as bad as it was.

If no additional measures are taken, in the year 2020 air pollution levels will still lead to 292,750 premature deaths and about 88,500 cases of serious hospital admissions for cardiac and respiratory problems. Eutrophication critical loads are exceeded on more than 650,000 km² in 2020 [CAFÉ CBA], an area almost twice the size of Germany.

In particular diesel-fuelled vehicles are responsible for emissions of NO_x and PM₁₀. It has also become clear that traffic-related particles are amongst the most hazardous ones because of their size (generally under 1 micron) and because of their chemical composition.

The recent shift towards diesel passenger cars in most EU member-states makes the case for cleaning up this emission source even more urgent. Europe is approaching the 50 per cent diesel share in new car sales. Knowing that diesels have a much higher annual mileage than passenger cars, by 2020 some two thirds of car kilometres might be diesel-fuelled.

The air quality case

While EURO standards regulate pollutant emissions from the exhaust gases of new motor vehicles, the European air quality legislation focuses on the concentration of air pollutant's in the ambient air, with the aim to protect the environment and human health.

The Air Quality Framework Directive (1996/62/EC) establishes the basic principles for the set of European air quality legislation, setting objectives for ambient air quality in order to avoid, prevent or reduce harmful effects for human health and the environment. It requires that, if limit values are exceeded, Member States devise abatement plans and programmes. The First Daughter Directive (1999/30/EC) on SO₂, NO₂, PM₁₀ and lead is most important in this context. Its limit values for small particulates (PM₁₀) have entered into force in 2005 and its limit values for NO₂ will become binding in 2010. Diesel cars are important contributors to ambient air concentrations of both particulates and NO₂.

The coming-into-force of the PM₁₀ air quality standard in 2005 has already led to abundant problems in numerous Member States. The legislation sets levels of PM₁₀ which can only be exceeded on 35 days in a year.

The directives lead primarily to problems in densely populated areas and around motorways, where traffic is by far the most dominant source of emissions. In February 2005 a number of Italian cities saw car bans on certain Sundays as cities hit their

35th day of excessive levels within 60 days of 2005. Other cities, for example in Germany, are not far behind and similar measures are discussed. In the Netherlands a string of building projects has been stopped. Similar problems will occur in 2010, when new limit values on NO₂ will become legally binding.

In response to the (the threat of) legal challenges, local authorities are scratching their heads about the content of the action plans they should draw up. A number of countries already have introduced measures, such as the 80 km/h zones in the Netherlands, or the low emission zones in Sweden.

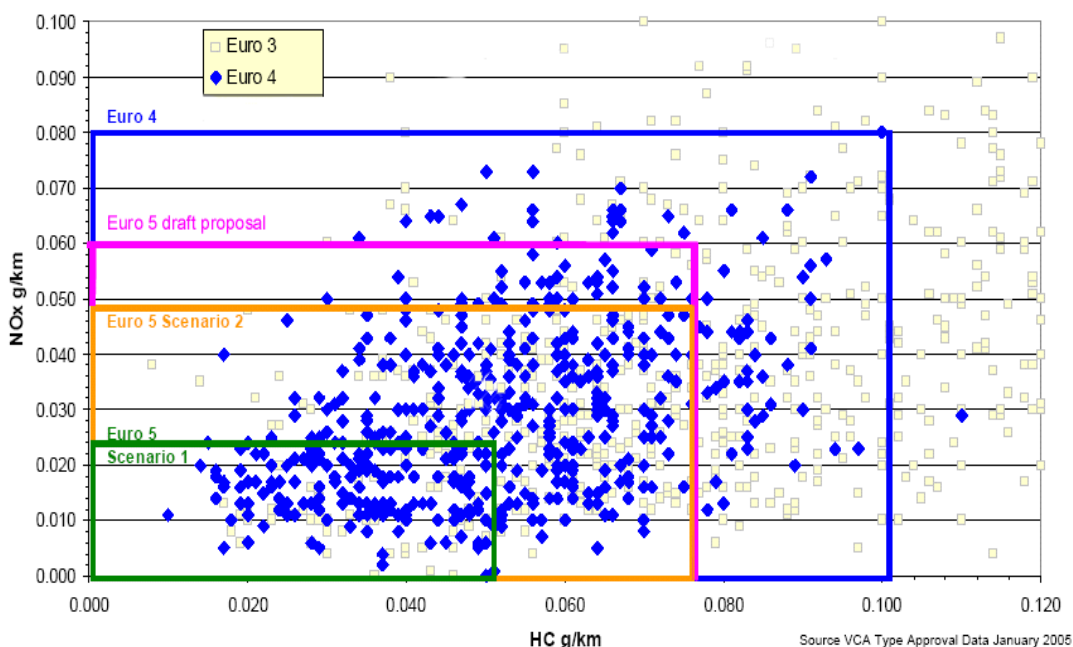
The freedom of manoeuvre for national, regional and local authorities is determined to a large degree by Brussels. For example, they may only privilege vehicles on the basis of EU-wide standards, and they may not reject dirty vehicles on roads that belong to the Trans-European Network. To them, every day earlier the 'Euro 5' standards enter into force, and every milligram it is stricter, really counts. Cleaning up the cars, a measure that can only be taken at EU level, would give these member states perspective of meeting the air quality limits.

The technological case: the Commission proposal falls far short of what is possible today and weaker than any of the scenarios taken into consideration

The draft Commission proposal falls far short of what is technically possible today, let alone what will be technically possible by 2008 or 2008 when the new standard will enter into force. The Commission itself is proving this point because the standards proposed (200 mg NO_x for diesel, 60 mg HC for petrol) are more lenient than any of the scenarios studied by the Commission, none of which appeared to be unfeasible.

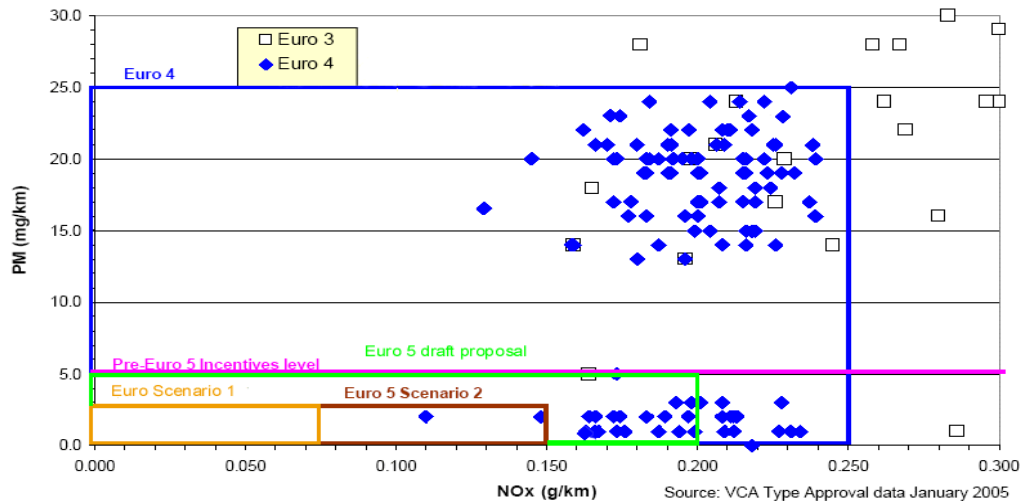
In historic contrast, the Euro 4 standards when set in 1998 were considered a serious challenge and were even claimed impossible to reach by the industry. The car industry even refused to deliver cost figures for Euro 4 diesel standards because it said that they were 'impossible to reach'.

Graph 1: Overview of petrol car certification data, the Euro 4 standards, different 'Euro 5' scenarios and the draft 'Euro 5' proposals



This graph clearly shows that the proposed 25% tightening of NO_x and HC standards relative to 'Euro 4' is very weak. Even 'Scenario 1', a 50% tightening for NO_x and a 70% tightening for HC, appears to be easily feasible with early 2005 technology.

Graph 2: Overview of diesel car certification data, the Euro 4 standards, different 'Euro 5' scenarios and the draft 'Euro 5' proposal



This graph clearly shows that the 200 mg/km NO_x standard is weak -weaker than the original scenarios considered by the Commission. Approximately half of the vehicles with early 2005 technology already met the NO_x standard. It also shows that diesel cars equipped with particle filters easily meet the 5 mg/km standards and generally meet 1 or 2 mg/km.

The economic case: 'ex ante' industry cost figures have lost any credibility

First of all, it is for stakeholders difficult so make useful remarks about the economic case, as the figures submitted by the industry and compiled by the 'validation panel' have not yet seen the light of day.

We would, however, like to stress that the cost figures as supplied by the automotive industry before the introduction of new regulation ('ex ante') are barely credible any more. The over-estimation of the costs of previous Euro standard class has taken on grotesque proportions. An extensive review by AEA Technology 'An evaluation of the air quality strategy' (December 2004) concludes that

'If the ex ante estimates for all four Euro standards are combined, this would lead to an increase in the unit costs per vehicle of €1,585 to €2,565 (petrol cars) and €1,840 to €2,945 (diesel cars).'¹

<http://www.defra.gov.uk/environment/airquality/strategy/evaluation/pdf/chapter2.pdf>

The absurdity of these cost estimates can be illustrated by the fact that Renault manages to sell its Euro4-compliant Logans at a consumer price of € 5,000. Were

¹ Figures in £ converted to € with exchange rate 1,4829 (Sept 2005)

the industry cost estimates true, then a third to half of the price of the car would come from its anti-pollution equipment....

Therefore it is very urgent that the Commission considers in its impact assessment of the imminent definitive 'Euro 5' proposal the experiences gained in the past with 'ex ante' industry cost estimates, and corrects the costs with the experiences gained.

The global strategic case: the US and Asia

There has been much talk in the last years about the need to harmonise global emission standards. In particular industry has always been very keen on this topic. Therefore we treat this issue a little more in depth.

US: A missed opportunity to make EU diesel technology an export product

It is odd to see that the first time the 'global harmonisation' paradigm is put to a concrete test, short term opportunistic (cost) considerations prevail so clearly over the medium term strategic issues, in particular in relation to what is happening in the US. US air pollution standards for cars have historically been stricter than in Europe.

In particular, the diesel car has always been too 'dirty' to classify for export to the US. The time has come for diesel technology to finally become clean and become a product that is not just good enough for Europe but also for the rest of the world. In the next chapter we will take this issue further.

Asia: Europe might be forced to follow rather than to lead

Asia is a different situation. At this moment, the European car industry enjoys a comfortable situation in the emerging economies in Asia. All but two Asian countries (which are South Korea and Taiwan) follow the EU standards. The delay in implementation of EU standards follows is decreasing: their backlash used to be 6 to 8 years, but now they generally lag only 3 or 4 years behind.

This is a tremendous advantage for the European industry: the new standards are set in the home (EU) market, and when the technologies have matured and costs have come down enormously, a perfect export product is there.

If Europe halts the pace of improvement and becomes a laggard rather than a forerunner – as arguably is the case with the Euro 5 standards – it is quite possible that the Asian tigers adopt other standards, like the US ones or even own ones, for their home market. It is telling that China adopted the Euro 3 standards for petrol but already chose to adopt the Euro 4 standards for diesel cars. This is not so surprising given the fact that China hosts 16 of the 20 cities in the world with the worst air quality. If the EU does not deliver, ambitious countries like China might choose their own path (as they did in case of fuel economy standards). This could make it more difficult for European companies to compete, and certainly lead to a less predictable and secure situation. It is thus essential to stay ahead in Europe.

The political case: the Commission should have learned that it should propose more ambitious standards

The job of the European Commission as initiators of legislation can be considered a success when its proposals are adopted by Council and Parliament without major modifications.

History clearly shows that in the field of emission standards, the Council and the Parliament have found it necessary to tighten the standards. For example, the Commission in the past proposed binding 'Euro 3' standards and indicative 'Euro 4' standards, a process that ended up with both Euro 3 and 4 being binding and some values tightened (98/70./EEC). The Commission had not even been able to make a

cost assessment of 'Euro 4' standards for diesel cars, as the industry claimed that these standards would not be technically feasible. Even much more drastic tightening by Council and Parliament has taken place in case of fuel standards (98/69/EEC). The standards currently in place were even regarded as technically unfeasible and certainly economically disastrous.

Chapter 3: the case for a 70% tightening of the NO_x standard of diesel cars

One of the most disappointing features of the Commission's proposal is the only 20 per cent reduction of NO_x emissions from diesel cars, in order to avoid the necessity of exhaust after treatment technology. In this section we will argue why this value is a bad choice and why a 70 per cent reduction of NO_x emissions is technically feasible and economically and environmentally very desirable.

Current EGR based technologies appears to lead to cycle beating

Exhaust Gas Recirculation (EGR) is currently the generally used technology to lower NO_x emissions from diesel cars. Research into heavy duty engines with the ARTEMIS driving cycle has already shown that this technology has lead to extensive cycle beating practices

In light duty evidence is emerging too, using the same ARTEMIS cycle. The situation seems to be particularly bad for urban NO_x emissions, which rise to values around 1 gram per km, exceeding the standard by a factor 4. It is exactly the urban emissions that lead to the greatest problems. This could be one of the factors that explain why urban air quality has not noticeably improved.

After treatment would reduce the need for EGR-based solutions and thereby also reduce the amount of cycle beating.

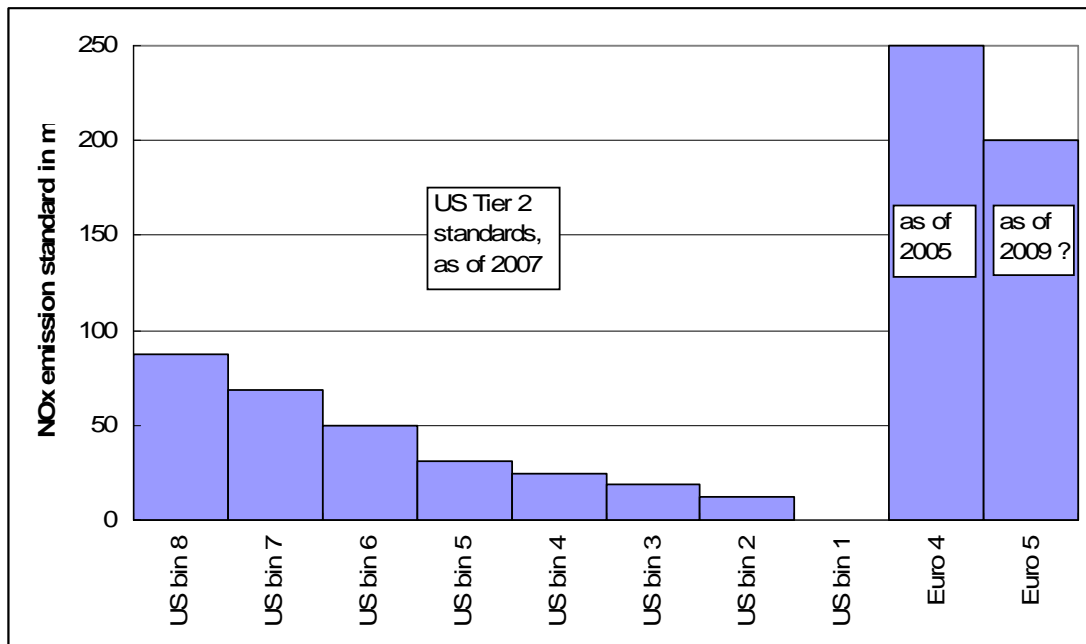
It is needed to harmonise world standards and to open the US market for European diesel technology

Over the last years there has been much talk over global harmonisation of emission standards for vehicles. This is particularly important in the case of diesel cars, given the fact that Europe lags much behind the US' standards for diesel cars.

In the US, as of 2007 the complete set of 'Tier 2' emission standards for passenger will have entered into force. The standards apply to cars, SUVs and light duty trucks, up to a weight of over 4 tonnes, so even the largest vehicles for passenger transport will have to comply with the rules. *Every vehicle* sold will have to meet a NO_x standard of 87 mg/km and the *average* NO_x standard that has to be met by the vehicles sold is 31 mg/km (both values converted from the grams/mile standards on the FTP75 cycle).

This is in stark contrast with the current Euro 4 standard of 250 mg/km and the proposed 'Euro 5' standard of 200 mg/km. See the following graph.

Graph 3: US and EU NO_x emission standards for diesel cars. Note that US standards are fuel neutral and hence also apply to petrol cars.



Explanation of the US 'bins': Manufacturers can choose in which bin they want to certify their cars, as long as on average they comply with Bin 5. Bin 1-4 apply to 193,000 km, bin 5-8 apply to 80,000 km.

It is clear that the current draft Commission 'Euro 5' proposal for NO_x emissions from diesel cars, 200 mg/km, is still much more lenient than the US standard.

This implies that if European manufacturers want to sell their diesel car models on the US market, they will have to develop much more advanced technologies than they will have to do for the home market. As the diesel market in the US is still small (only 43,000 light duty vehicles in 2004, compared with close to 10m diesel cars and vans in the EU25), they will have to spread these extra costs over a relatively small number of vehicles sold. Thus, European diesel technology will stay relatively uncompetitive in the US in the absence of a supporting home market.

If European regulators, however, decide to introduce NO_x limits that are close to the US standards, European manufacturers could develop one diesel technology for both markets. Development costs could be spread over many millions of vehicles, which would enable them to make a competitive diesel product for the US market. A -70% of 75 mg/km NO_x standard would help tremendously to pave the way for European diesel technology. Such vehicles could comply with the upper bins (7 or 8) in the US legislation, which would be sufficient to pass, provided the manufacturer compensates the still relatively high emissions with clean petrol vehicles in Bin 1 to 4.

It will lead to better outcomes in terms of NO_x, but also on CO₂ and costs

A string of European manufacturers are exploring ways to compete with diesel technology on the US market, and two important ones, Daimler Chrysler and Ford, have expressed their preference for an SCR-based solution.

They argue that over the last years it has become clear that lean NO_x traps (LNT) face problems in reducing NO_x by deep percentages, and will probably keep facing durability difficulties and fuel economy / CO₂ penalties. In contrast, Selective Cata-

lytic Reduction (SCR) technology has greatly developed, originally just for heavy duty engines.

Daimler Chrysler

The plans recently unveiled by Mercedes are noteworthy. Mercedes plans to meet the new US emissions standards with SCR technology and is currently in discussion with US regulators about how to do this, in particular about how to ensure that drivers have permanent access to urea so that NO_x emissions do not rise when the urea tank runs empty.

A paper by the company (DC 2005) concludes:

- 'The system that best meets the requirements is the SCR urea after treatment system' ...
- ... 'Due to its high efficiency, engine out NO_x emissions can remain relatively high, which limits the impact on fuel consumption.'

Ford Motor Company

In addition, Ford Motor Company last year presented a paper at the Diesel Engine Emission Reduction conference in the US:

http://www.eere.energy.gov/vehiclesandfuels/pdfs/deer_2004/session11/2004_deer_hoard.pdf).

After an extensive lifecycle cost benefit analysis this paper concluded: 'Urea SCR systems are expected to be significantly lower cost than LNT (Lean NO_x Trap) systems'.

The main reason for this is that an SCR system, although substantial upfront investments in urea infrastructure are needed, pays itself back quickly because of savings on fuel consumption. Ford estimated a 5 per cent reduction of fuel consumption compared with alternative abatement scenarios.

Aaqius & Aaqius

The same conference also saw a paper by Aaqius & Aaqius:

http://www.eere.energy.gov/vehiclesandfuels/pdfs/deer_2004/session11/2004_deer_joubert2.pdf

It concluded:

- 'For future emissions regulations in EU & US, SCR in combination with DPF offers a unique and global solution for the most severe regulations
- CO₂ emission will be an issue for the next decade: With SCR fuel consumption are lowest.
- For future emissions regulations in 2010 - 2012, EU & US could use the same technology to comply emissions regulations.
- EU & US have to work closely in order to define standard for SCR. '

CAR research

Finally, the SCR technology was the technology deemed most likely to be available for NO_x reduction from light duty diesel engines in an expert survey undertaken by the Centre for Automotive Research (CAR)².

Summary of likely impacts of a -70% standard for NO_x emissions from diesel cars

First, it is crystal clear that there is widespread belief in the US that advanced after treatment systems will be available and needed in order to comply with the federal

² Center for Automotive Research, Advanced Power Technology Alliance - Advanced Internal Combustion Engine Survey (Light Duty Vehicle Technology), Ann Arbor, April 2004

'Tier 2' standards. Some manufacturers even believe that 'Bin 5' standards (31 mg/km) on NO_x are feasible with diesel SUVs.

The key advantage of a -70% 'Euro 5' NO_x standard (i.e. 75 mg/km) for diesel cars is that it will most probably incentivise the industry towards EU-wide application of the after treatment technology that is the best from a lifecycle perspective, namely Selective Catalytic Reduction.

SCR offers – in combination with an oxidation catalyst and a particle filter - the possibility to optimise the engine for fuel consumption, and so to avoid important compromises on CO₂ emissions. If we go along with the industry estimate of some 5 per cent savings on fuel, this translates into:

- Some 8 grammes of CO₂ per vehicle kilometre, a major step towards achieving the 120 g/km target of the Community that should be achieved by 2010;
- Some 3 litres of fuel savings per 1,000 km driven, or some 750 litres of fuel over the entire lifetime of the vehicle. Assuming in total 40 million 'Euro 5' vehicles will be sold in the EU25 (8 million per year over 5 years) this would save 30 billion litres of diesel fuel, or some EUR 15 billions on oil imports;
- This equates to some EUR 700 cost savings to consumers over the lifetime of the vehicle
- According to Ford research, these benefits outweigh the cost of SCR technology.

Chapter 4: Other specific issues

Both durability and in use compliance to 200,000 km

We welcome the proposal by the Commission to increase the durability requirements to 160,000 km. However, we are disappointed that the proposal does not make any reference to the, probably even more important, 'in use compliance' period which is still at the obsolete of 5 years or 100,000 km. We would prefer both to be set at 200,000 km, being much better in line with the real "life expectancy" of a car and better in line with US standards (120,000 miles = 193,000 km).

Petrol car standards

We regret the lenient standards for petrol vehicles, particularly the fact that the Commission has backtracked from 37.5% reduction (proposal in the CARS21 group) to only 25% reduction, which is more lenient than any of the variants studied. Apart from the fact that we foresee for this reason problems in preparing an impact assessment (no cost figures available !) the graph in Section 2 clearly shows that much stricter limits are easily feasible.

In addition, again the issue of global harmonisation comes up. If we are serious about this, we fail to understand why the Commission proposes standards that are obviously weaker than the US federal standard, let alone the Californian ones. It would be a real waste if manufacturers chose to equip their EU models with different (i.e. worse) catalysts than their US and Californian ones. As 75% reduction would come much closer to the US and Californian standards and is perfectly feasible as the graph shows.

Particle mass standard 2 instead of 5 mg

The particle test values (see graph in Chapter 2) clearly indicate that the majority of diesel particle filters is able to achieve values as low as 1 or 2 mg/km, and we see no reason to keep the standard at 5 mg/km, certainly not now the PMP protocol has shown to be able to measure particulate mass very accurately and repeatably.

The same applies to the intended standard for petrol cars. This standard could also be tightened to 2 mg/km.

Adjustment of mass figure after adoption of PMP protocol

Without prejudice to the previous paragraph of the particle mass limit, we agree that a proper adjustment of limit values is needed when the test method changes.

Particle number standard and comitology

We welcome the fact that the Commission announces a particle standard to be set, but regret the proposal to do this in comitology. As the Commission itself acknowledges, the particle standard is crucial to ensure real impact in human health. We can imagine it would be burdensome to have a full-fledged legislative procedure for particle numbers as a mere amendment to 'Euro 5', but we are disappointed that the Commission does not even announce a 'Euro 6' standard that offers the prospect for a definitive solution for air pollution from cars. The issue is far too important to leave to comitology alone – there should be at least a prospect for a political process.

Closing the 'SUV loophole'

We welcome the intention of the Commission to correct this obsolete loophole.

Medium term: a thorough overhaul needed

For the medium term, the complete strategy for controlling vehicle emissions needs to be thoroughly re-assessed, now tales of cycle-beating and chiptuning are becom-

ing ever more common. This is clearly the issue for the future. The least the EU could do is to move to 'not to exceed' values like the US. But a complete rethink would even be better, including measures to drastically increase the on-road checks and improve the roadworthiness test and standards.

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Position paper of EFAEP on the ‘Preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of the atmospheric pollutants from motor vehicles (Euro5)’; reference IP/05/938

Main aspects of the proposal

The main aspect of the proposed regulation is a further tightening of vehicle emission limits for NO_x and particulate matter within the EU:

- a large reduction (80%) in the mass of particulate emissions from diesel vehicles will be required;
- for diesel vehicles, only a small reduction (20%) in NO_x is planned;
- at a later stage it is foreseen to introduce a new standard limiting the number of particles that can be emitted. This prevents the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass;
- further reductions in emissions of gasoline cars;
- the durability period over which manufacturers must ensure the functioning of pollution control devices has been extended from 80,000 to 160,000 km;

the removal of the exemption in previous legislation which enables heavy passenger cars (Class M1, over 2500 kg) to be type approved as light commercial vehicles.

Main reaction to the proposal

The proposal to limit mass of particulate emissions (and in a later stage the number of particles) from diesel cars is very welcomed because of health concerns related to exposure to particulate matter. In the proposal the mass of particulate emissions from lean burn direct injection petrol engines are limited too. This is judged very positive because it is expected that these new petrol engines could emit particulate matter significantly compared to the current indirect injected petrol engines which have negligible particulate matter emissions (Van de Burgwal *et al.*, 2003). Also, the proposal to remove the exemption in previous legislation which enables heavy passenger cars to be type approved as light commercial vehicles is judged positively. Perhaps, the actual environmental impact of this proposal is limited, because sales figures of these heavy cars are relatively small. However, there is indeed no justification at all to give heavy passenger cars other emission limits than smaller cars.

We have one point of criticism, which is related to the proposed low ambition in NO_x reduction for diesel cars (figure 1). In the figure it is shown that diesel cars may emit far more NO_x than petrol (factor 3 for Euro 5), and that the progress in tightening limits from Euro 4 to Euro 5 is rather modest. In the explanatory memorandum this low ambition is

defended by arguing that the technology for further NO_x reduction is not yet mature. However, we think that a tighter emission limit for diesel could expedite the process of maturing the emission reduction technology. If the technology is really not mature before 2008-2010, we would suggest implementing tighter Euro 6 limits for NO_x in the next decade as soon as possible.

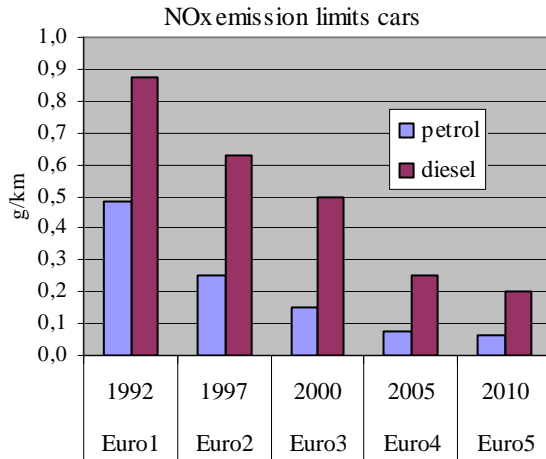


Figure 1 The progress in NO_x emission limits for newly sold cars in the EU. Euro5 are the figures from the current proposal.

Share of diesel cars increases

In our view tighter NO_x emission limits for diesel cars in the short term is important as the share of diesel cars in the EU increases (see figure 2). Between 1990 and 2005 the share of diesel cars increased from below 15% to about 50%. The increased sale of diesel fuel creates problems with respect to human health and European air quality legislation at main transport routes and in cities. NO_x emission reduction is important because NO_x are one of the main precursors of secondary particulate matter in Europe (De Leeuw, 2002). An emission limit tighter than the proposed limit could help reducing these problems in the period 2010 – 2020.

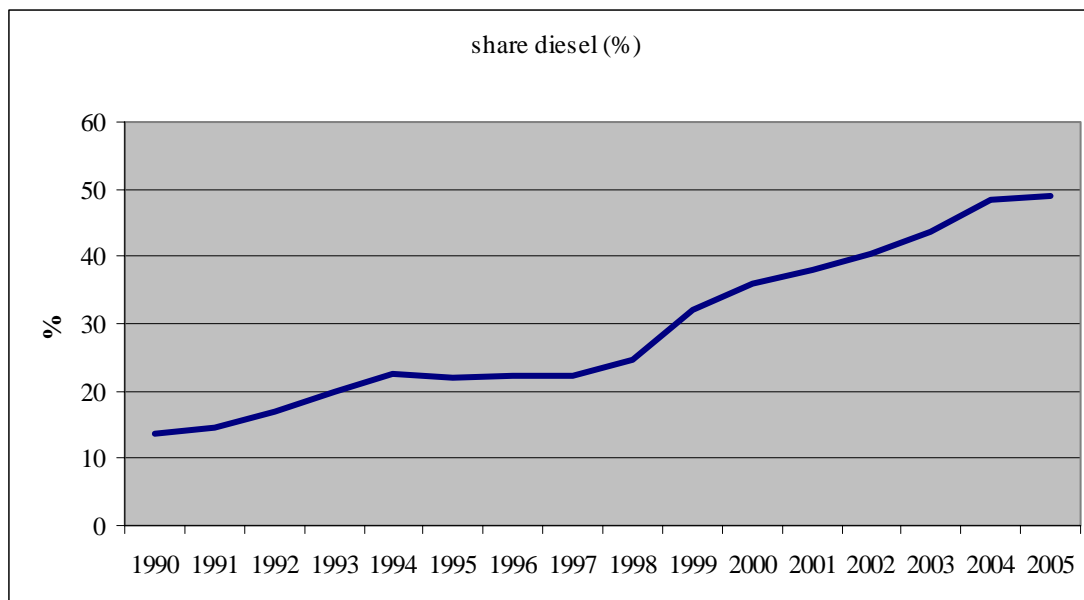


Figure 2 New cars registration in Western Europe. % share diesel. 2005: first six month.
(<http://www.acea.be/ACEA/DIESEL-PC-90-02.pdf> en www.eere.energy.gov/vehicleandfuels/facts/2005).

Example of impact of a tighter diesel NO_x emission limit

As the new Euro5 limits will be implemented around 2010, the main NO_x emission reduction impact will be around 2020. It is estimated that in a business-as-usual scenario in 2020 the emission of road transport in the Netherlands will be around 96 million kg (Van den Brink, 2003). Implementing a Euro5 NO_x limit for diesel cars which is 55% lower (a technically feasible limit, based on Rijkeboer *et al.*, 2003) than Euro 4 (around 0,1 g/km), the 2020 emission could decrease to 82 million kg (*ceteris paribus*): a decrease of approximately 15%. A Euro5 NO_x limit for diesel cars which is 20% lower than Euro 4 (0,2 g/km), as proposed, the emission will decrease to 92 million kg (*ceteris paribus*): a decrease of 5%. This example shows that the impact of a tighter diesel NO_x emissions limit can be significant. The Netherlands is a country with a relatively modest diesel share in newly sold cars (around 25% in 2004), so in other European countries the emission impact will be higher.

Prepared by: VVM (NL), Section traffic and transport, 30 August 2005

Reviewed by: AIAT (I), 5 September 2005

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EFAEP informative

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ENGVA Position Paper on the Proposed Draft Euro-5 Emission Limits In Relation to Light-Duty Natural Gas Vehicles



European Natural Gas Vehicle Association
9 September 2005

This position paper is the European Natural Gas Vehicle Association (ENGVA) response to the *Preliminary Draft Proposal for a Regulation of the European Parliament and of the Council Relating to Emissions of Atmospheric Pollutants From Motor Vehicles (Euro 5)*.

ENGVA Proposes the Definition of a Non-Methane Hydrocarbon (NMHC) Standard for Light Duty Vehicles

- CH₄ is non-toxic and has a negligible contribution to ozone formation.
- NMHC standards already exist in Europe for heavy duty vehicles and in North America and Japan for all vehicles.
- Continuation of a total hydrocarbon standard (THC) fails to recognize the contribution of natural gas vehicles (NGVs) to reduced ozone/smog emissions by 85% or more compared to petrol vehicles.
- ENGVA, therefore, proposes the development of an NMHC-standard for light duty vehicles (classes M₁ and N₁) with spark ignition engines.
- The share of CH₄ in the THC-emission (in g/km) of petrol vehicles generally is around 10%. ENGVA proposes that the value for the Euro 5 NMHC-limit for vehicles with spark ignition engines (petrol, CNG and LPG) is set at 90% of any proposed Euro 5 THC-limit.
- ENGVA requests that the Commission, for light duty vehicles with compression ignition engines, also consider replacement of the combined THC + NO_x limit by either separate limits for NMHC and NO_x or an optional NMHC + NO_x limit.
- For vehicles with spark ignition engines as well as vehicles with compression ignition engines ENGVA would find it acceptable to accompany the NMHC-limit with a methane cap if it were to be desirable by the Commission. The value for this CH₄-limit should not be lower than 0.1 g/km. This emission level is already achieved by Euro 4 NGVs.

ENGVA Proposes to Maintain the Euro 5 NO_x-Limit for Vehicles with Spark Ignition Engines at the Euro 4 Level

- The proposed Euro 5 NO_x-emission limit of 0.06 g/km for vehicles with spark ignition engines does not pose a problem for stoichiometric light duty NGVs. Nevertheless ENGVA proposes to keep the Euro 5 NO_x-limit for vehicles with spark ignition engines at the Euro 4 level.
- Maintaining the Euro 5 NO_x-limit for vehicles with spark ignition engines at the Euro 4 level provides room for the introduction of fuel efficient lean burn direct injection (DI) spark ignition engines (and possibly other new engine concepts). These innovations are important in view of further CO₂-reductions in the European passenger car fleet, and may also be applied to NGVs. Any reduction in NO_x-limits goes at the expense of fuel efficiency for these vehicles and thus provides a conflict with the goals of the Commission's CO₂-policy. Further reduction of the NO_x-limit will probably require the use of advanced exhaust gas aftertreatment on these vehicles.



The Eurocouncil of the Fédération Internationale de l'Automobile
European Bureau

Response by the Fédération Internationale de l' Automobile (FIA) to the Consultation paper of the European Commission on the Preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of atmospheric pollutants from motor vehicles (Euro 5)

The FIA is a global federation of touring and motoring organisations. World-wide we represent some 100 million motorists and in the European Union our member clubs have a combined membership in excess of 43 million motorists.

The FIA is pleased to have the opportunity to respond to the European Commission's Consultation paper. In our opinion, protection of the global environment is vital and thus the impact of motor vehicles on the environment must be minimized. We would also welcome a speedy implementation of Euro V requirements.

In order to inform motorists better about the environmental impact of their cars, our member club, the ADAC in Germany has research and developed "Eco Test" which was commissioned by the FIA Foundation for the Automobile and Society. Using "Eco Test", the emissions and fuel consumption of currently produced cars are measured, calculated and rated. And the results are made available on the Internet.

The position of the FIA as regards the proposals set out in this consultation:

1. An 80% reduction in particulate matter (PM) emissions from diesel cars to 5 mg/km, relative to the limit of 25 mg/km, which has become mandatory for new type approved vehicles from January 2005 under the "Euro IV" emissions standards.

FIA position: OK

2. A 20% reduction in nitrogen oxides (NO_x) emissions from diesel cars.
EcoTest results (see figure 1 below) show that cars driving the homologation test cycle (NEDC) easily meet the Euro IV limit values. The reduction of the NO_x emissions when actually driving in the real world is however clearly less than the reduction of the limit value of the test cycle.

FIA position: NO_x limit: 150 mg/km.

3. A 25% reduction in emissions of both NO_x and hydrocarbons (HC) from petrol cars.

Eco Test results confirm that the proposed limit values are currently met by 90% of the Euro IV petrol cars (figure 1).

FIA position: However we prefer no NO_x reduction for petrol cars at this stage in order to achieve fuel neutral emission limits for cars at a later stage.

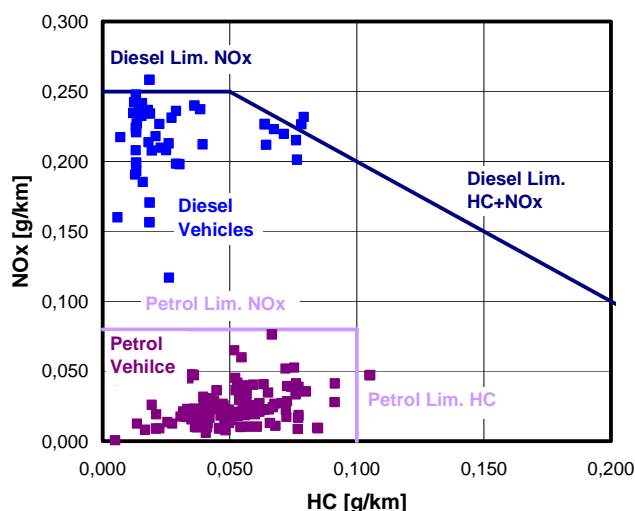


Figure 1: HC and NO_x values measured in accordance with NEDC in ADAC Eco Test

4. Introduction of a particulate emission limit for petrol cars using lean-burn direct injection technology (GDI).

A PM health related problem is caused by the so-called Ultra fine particles. These are a relatively minor part of the PM mass however, their number is important. The introduction of a limit value for their number would be a logical step forward.

FIA position: The FIA agrees with the proposed approach of waiting for the results of the UN/ECE Particulate Measurement Programme (PMP) and implementing a number standard through comitology at a later stage.

5. Extension of the durability period over which manufacturers must confirm the operation of emission control devices such as catalytic converters and particulate traps.

FIA position: OK. This corresponds better with the useful life of vehicles.

6. Passenger vehicles with a mass of over 2500 kg, such as SUVs, can no longer use the less ambitious emission standards for light commercial vehicles.

FIA position: OK, because these vehicles are used as passenger cars.

7. An implementation date of 18 months after the entry into force of the regulation for new type approvals and 36 months for all types.

FIA position: OK. FIA would prefer however, that the Commission retain the practice used for the implementation of time limited requirements used in Euro I, II and III. Clear notification to all stakeholders proved effective in avoiding difficult and lengthy discussions.

The FIA welcome the proposal for the simplification of the emission legislation. However, the proposed repeal of 70/220/EC and its twenty adaptations and rectifications as mentioned in Article 12 can only be welcomed by the FIA once it is clear that all issues (e.g. OBD principles, access to repair information) are sufficiently covered in the new Regulation without loss of existing technical provisions. In this respect the FIA is looking forward to the new comitology proposal of the Commission as a means of speeding up processes. However, there should still be scope for stakeholders to make their view heard.

8 September 2005



Response to Stakeholder Consultation – Euro 5 Emission Limits for Light Duty Vehicles

Summary:

Ford Motor Company endorses the ACEA response below. This highlights a number of key issues which are summarized below and addressed in more detail in the subsequent sections concerning specific parts of the stakeholder consultation document.

Timing

- The Commission proposes that the regulation comes into force 18 months after entry into force; this could, depending on the political process, introduce Euro 5 for new type approvals as early as mid 2008. Industry reminds that a 3 year minimum period is required for industrial development and that it has planned along with its supply base to introduce Euro 5 as from 2010 as indicated in the Commission Communication on Incentives early in 2005; earlier pull ahead is not possible. The proposed regulation should confirm January 2010 or 36 months after entry into force of this Regulation (new types and 1 year later for all new registrations), whichever is later. It is imperative that this lead time is maintained following the confirmation of the associated technical requirements (i.e. publication of the complementary comitology Regulation). A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Compression Ignition Measures

- The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x after-treatment system is not mature enough to comply with levels lower than 200 mg/km.
- ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance protocol due to test measurement and laboratory variability. ACEA does not believe a new method based on particle number would bring any added benefit.

Spark Ignition Measures

- The proposed spark ignition NO_x limit of 60mg/km is a 25% reduction against Euro 4. It is widely acknowledged that spark ignition vehicles are already clean and efficient and further measures are unnecessary. A further reduction is not a cost effective measure to improve air quality. The proposed 25% reduction in hydrocarbons (i.e. HC = 75 mg/km) is also an unnecessary and unjustified extra burden on industry in general and specifically for vehicles equipped with DI and CNG engines.

Heavy M1

- The Commission proposes to remove the provision for M1 vehicles over 2500kg to meet N1 emission limits. For these diesel engined vehicles, to meet passenger car limits, will either require NOx aftertreatment or, if such technology is not mature, a switch to gasoline engines with an associated negative impact on fuel economy. The majority of these vehicles are designed to have a greater utility and / or off road capability, and this should be part of the requirement. ACEA would support limiting the use of this provision to vehicles designed and equipped to mount 7 or more seats and/ or off road capability. The latter can be defined as per the definitions in the framework Directive. Motor-caravans and other special purpose vehicles should also be included in this provision.

Durability/Compliance

- ACEA welcomes the retention of in service emissions testing at 100,000 km or 5 years. The draft proposal extends durability to 160,000 km. A durability demonstration is mentioned, the detail of which is unclear and open to interpretation. There is no justification for further regulation in this area and as such this provision should be deleted.

1. Explanatory Memorandum

With reference to the “preliminary draft proposal for a Regulation of the EP and Council relating to the emissions of atmospheric pollutants from motor vehicles (Euro 5)” recently published on the DG ENTR web-site, ACEA would like first to address the comments made in the explanatory memorandum, with reference to the following subjects:

- Split level approach
- Clean Air for Europe (CAFE)
- Compression Ignition Measures
- Spark Ignition measures
- Particle number measurement
- Durability
- Heavy Passenger Cars

Split level approach

Although the reasons for the new regulatory approach (the split-level approach) described in section 2 are understood, it is not absolutely clear which details will be included in which of the two documents i.e. the co-decision and the comitology proposals. It is therefore difficult to comment on any omissions from this preliminary draft proposal without seeing a draft of both proposed Regulations. ACEA believes that the rules under which the split approach will operate should be defined in advance.

The process of development of this new legislation must be conducted for both proposed Regulations in parallel.

Clean Air for Europe (CAFE)

The explanatory memorandum states in the last paragraph of section 3:

“The “Clean Air For Europe” (CAFE) programme provided the technical basis for the preparation of the Thematic Strategy on air pollution. CAFE assessed emissions, current and future air quality and the costs and benefits of further measures to improve air quality”.

On this basis, the Commission will identify the measures which are required in order to attain the necessary air quality levels. Euro 5 is one among several such measures that are important to reduce NOx and particulate matter emissions. “

In fact, due to the delay in the availability of cost and effect data from DG Enterprise, DG Environment was forced to use data from another source very late in the process. These data have been shown to be incorrect and have resulted in major underestimation of costs for further vehicle measures. Furthermore, due to the time pressure, there has been no proper cost-effectiveness analysis with respect to road transport measures as only one set of assumptions for vehicles has been used for all scenario runs.

The automotive industry has been supportive of the CAFE process in the belief that proposals supported by solid facts would be accepted by the other EU institutions without delay. ACEA urges the Commission to update the Thematic Strategy on Air Pollution by including additional vehicle scenarios with the costs agreed by the DG ENTR panel and to take this update into account in redrafting the Euro 5 proposal.

Compression Ignition measures

The proposed diesel passenger car NOx limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NOx after-treatment system is not mature enough to comply with levels lower than 200 mg/km. Furthermore, there is a trade off between NOx emission levels and fuel consumption.

ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance test protocol due to test measurement and laboratory variability even with the draft new PMP mass measurement method as the quality control for the test facility may be outside the control of the vehicle manufacturer.

Testing for these technologies requires much extended test duration by nature of the regeneration process compared to non-regenerating technologies; the development and certification workload is therefore significantly increased for manufacturers and the technical services regardless of limit for these technologies.

ACEA notes the document refers to the need to recalibrate the PM mass emission limits set out in this proposal when the new measurement procedure is implemented.

The correlation of the two methods will require a European study across a number of different laboratories using a wide range of vehicles. This type of exercise is not planned within the PMP activities.

Spark Ignition measures

In section 4, the first paragraph states:

“The main aspect of this Regulation is that it requires a further tightening of vehicle emission limits for NOx and particulate matter.”

The proposal then goes on to reduce the limit for hydrocarbon and NOx emissions from vehicles with a positive ignition engine by 25 %, which is definitely not a minor step.

The Auto Oil II program findings and CAFE do not support any further reduction of hydrocarbon emissions on account of air quality. No gasoline scenario was identified as maximum technical feasible reduction scenario.

The major challenge, which engineers are facing today, is improving the fuel consumption of positive ignition engines. This is a sine qua non objective for meeting the commitment on CO₂ emission reduction, whilst these vehicles contribute to less than 10% of the total road transport NOx emissions.

Lowering NOx emissions hinders lowering fuel consumption at the same time. The proposal is in contradiction with the principle that new policy proposals are to be assessed in terms of their consistency with existing and other pending measures (ref. CARS-21.Rev. 1 prepared by the SHERPA group and agreed on 4 July).

Lowering total HC emissions will impose an unattainable burden to CNG vehicles against the 5% substitution target of the Commission communication on alternative fuels (Nov 2001). As a matter of fact, if the HC reduction is confirmed, it will be no more possible to produce and put on the market CNG vehicles. It is also an extra burden for vehicles equipped with a DI lean-burn spark ignition engine.

The proposal to apply a PM = 5mg/km limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not mature and requires more time to meet such a limit.

Particle number measurement

Also in section 4, paragraph 4 states:

“To prevent the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass, it is foreseen to introduce at a later stage a new standard limiting the number of particles that can be emitted. At the moment, it is not appropriate to define a number standard as research is being conducted at the UN/ECE - the Particulate Measurement Programme

(PMP) - and is still examining this issue. Once the results of the PMP programme are available, a number standard will be implemented through Comitology."

Previous stages of the UN/ECE PMP have demonstrated the correlation between particle mass and particle number, thus negating the justification for the enormous cost of introducing a particle counting requirement throughout the type approval and conformity systems. This correlation is also recognized in the proposed Regulation which states in a footnote to Table 1:

"The standards would be set so that they broadly correlate with the petrol and diesel mass standards."

ACEA will comment further on the subject of particle count in the response to the relevant proposed Regulation when it is published. This subject is however under discussion within the UN-ECE and such investigations should not be doubled.

Durability

The penultimate paragraph of section 4 states:

"A further change is the proposal that the durability period over which manufacturers must ensure the functioning of pollution control devices has been extended from 80,000 km to 160,000 km. This change is to more realistically reflect the actual life of vehicles and ensure that emission control systems continue to function throughout the life of the vehicle."

The **160,000 km durability requirement** introduces an additional, impractical burden not evaluated within the Thematic Strategy on Air Pollution. A durability demonstration at the time of type approval is mentioned, the detail of which is unclear and open to interpretation. Additionally, this is equivalent to further tightening of the standards in a non-transparent way as the air quality and cost-effectiveness models are unable to take account of such scenarios.

Heavy Passenger Cars

The final paragraph of section 4 states:

"A final aspect is the removal of the exception in previous legislation which enabled heavy passenger vehicles (Class M1, over 2500 kg) to be type approved as light commercial vehicles. There is no longer seen to be any justification for this exemption. "

ACEA believes that there are vehicles of category M1 that certainly justify the same considerations which apply to light commercial vehicles.

The first group is vehicles with 7 or more seating positions. These vehicles fill the social needs of large families (they provide an environmentally attractive alternative to the use of 2 "normal" passenger cars) and of dedicated transport functions e.g. shuttle buses, minibuses, large taxi cabs. The packaging of 7 or more seats however necessitates the design of a heavier and often higher and/or wider vehicle with specific gearing, and hence slightly higher emissions. Motor caravans and other special purpose vehicles (e.g. ambulances, first-aid) also need to be considered under the same argument.

The second of these groups is off-road vehicles with a maximum mass of more than 2,5 tons. These vehicles are an essential tool in rural communities throughout the world as well as for rescue and recovery services, public utility companies and many other essential applications and thus their specific needs are accounted for in many of the world's major legislative systems. A definition already exists in the Framework Directive which requires approach, departure and ramp angles as well as ground clearances that are greater than those employed on standard cars. Compliance with these requirements, all of which are essential to off-road usage, along with the additional drive train losses of four wheel drive and often a secondary transmission, produces a vehicle with higher total loading, physically larger size akin to light commercial vehicles and hence again slightly elevated emissions.

The segment volumes of these vehicles are very low and the slightly elevated emissions if given the same provisions as light commercial vehicles (LCV) are negligible in terms of the overall traffic emissions and hence impact on air quality. Such measures can not be evaluated in air quality models as they would fall well below the sensitivity threshold.

If the above 2 groups are not considered in the same way as light commercial vehicles, this would demand either NO_x aftertreatment technology (not currently technically feasible) or a switch to gasoline versions of these products, with a corresponding detrimental impact on fuel economy and CO₂ emissions. Costs of NO_x aftertreatment technology for application in 2010 have already been submitted to the Commission as part of the Euro 5 questionnaire early in 2005.

As the air quality impact is negligible and the costs are substantial (particularly considering the low volume of these products), this measure can not be justified on an air quality basis.

2. Proposed Regulation

Moving on from the explanatory memorandum to the text of the proposed Regulation, ACEA addresses the following issues

- Scope
- Application Dates
- OBD service information
- Particulate number measurement
- Table 1: scope

Scope

Article 2 states that "*this Regulation applies to all motor vehicles with positive ignition engines and ..*".

Article 5, section 3, which appears to replace section 5.2 in Annex I to Directive 70/220/EEC as latest amended (also summarized in Figure I.5.2.), then lists the requirements the vehicles must comply with to obtain type approval.

The proposed Regulation however does not contain the **Maximum Vehicle Weight limit of 3500 kg** that has been a part of European Emissions legislation since 1983 (M vehicles with a positive ignition engine with a total mass higher than 3500 kg have to comply only with Type II, idle CO, and Type III, crankcase emissions, tests). Although the category N1 is itself limited to 3500 kg, category M or M1 are unlimited. In practice the vast majority of passenger cars have maximum technically permissible masses well below 3500 kg but there are a very small number of specialist vehicles above this limit (e.g. armored vehicles). Some types of special vehicles are exempted from the requirements of the framework Directive and ACEA does not see any logic in introducing the potential confusion of including these vehicles in the future emissions legislation. It is also unclear which requirements would apply to CNG buses, today covered by Directive 88/77/EEC.

OBD service information

Article 4, paragraph 3, states "...This OBD related information will be made available on a non discriminatory basis to any interested component, diagnostic tool or test equipment manufacturer and/or repairer". Similar wording can already be found in the Block Exemption Directive and should not reappear in this proposal.

Application Dates

Article 6 includes the **introduction dates** of the proposal. An 18-month lead-time from the entry into force of this new Regulation is not sufficient since bringing a known but new technology into full production requires at least 3 years.

The proposed regulation should confirm January 2010 as date of entry into force of the new requirements for new vehicle types or impose 36 months after entry into force of the Regulation, whichever is later. A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Following the initial process of adaptation/development, manufacturers require two complete iterative cycles of summer and winter testing with sufficient time in between for implementation and validation of changes. Finally, the type approval process requires between 6 and 9 months to complete.

Industry has planned along with its supply base to introduce Euro 5 at 2010; as also indicated clearly in the Commission communication on Incentives which was published early in 2005. Vehicle model changes and the associated production line rebuilds have already been scheduled. Earlier pull ahead is not possible given the short time between now and the mandatory application of Euro 5. Additionally, model cycle plans would thereby be significantly shortened for the preceding specifications, so driving unit cost upwards (lower number of units over which to amortize fixed costs).

When a major new engine emissions programme is Type Approved – it means not only redoing the emissions Approval, but many other Approvals could be affected such as:

- EMC/RFI,
- Noise,
- Fuel economy / CO₂,
- End of Life (Bill of Materials)
- Power
- Smoke
- Masses and Dimensions including gradability checks
- Fire risk prevention
- Crash (frontal / side)

These Approvals may need to be updated, depending on the extent of the changes, this can be done either as a paperwork exercise or with completely new testing. Again, this places additional resource burdens on the Manufacturer and the Type Approval Authority.

Additionally, the same dates of entry into force for M₁ and N₁ vehicles class II and III will impose a burden to type approval authorities which have limited resources for the review of the extensive documentation needed to grant type approval for each of the many different vehicle types presently offered on the market.

Article 9 section 2 attempts to give a 3 month grace period between implementation of the measures of the Regulation and their application. The proposed text however states: *"If the adoption of the implementing measures is delayed beyond [18 months after the date of adoption of this Regulation] the dates mentioned in Articles: 6 (2), 6(3), 12(1) and 12(3) shall be replaced by a date 3 months after entry into force of these implementing measures."*

The lead-time for the entry into force of any new requirement should in reality be based on the date of entry into force of the comitology Regulation, which complements the co-decision Regulation, since the stringency of the requirements and the measures that have to be adopted depend on the test and enforcement protocols

Particulate number measurement

"Whereas" (13) states:

"In order to ensure that emissions of ultra fine particulate matter (PM) are controlled, the Commission should also give consideration to the adoption of a number based approach to emissions of PM, in addition to the mass based approach which is currently used."

But, the table of limit values in Annex I already contains a column for Number of Particulates. Furthermore, the heading of this column refers to a footnote which reads: *"In the absence of a number standard, manufacturers should collect the PM number data and make these available at type approval. This shall be done according to the procedure referred to in Article 9."*

As the Commission is merely considering a number standard, no provision needs yet be made for its inclusion in the legislation. Regarding the above mentioned data collection, the automotive industry currently knows of no accepted and practical measurement method or calibration procedure (Article 9 refers to the introduction timing of the Regulation).

Table 1: scope

The first row of limit values in Table 1 is headed Category M. As the scope of this Regulation should only cover M1 (and by manufacturer's request M2), this row heading should be corrected to read M 1.

3. General Comments

Finally, ACEA has some general comments regarding the **development and consultation process** being employed for this legislation. Until recently, DG ENTR has always developed new proposals concerning emission requirements within the Motor Vehicle Emission Group (MVEG), the expert group involving national delegations, industry associations and NGOs. This was not the case this time.

The above approach allowed an in-depth review of the data which supports the setting of new emission limit values and discussions on many other technical aspects of the new requirements beyond their feasibility and costs such as dates of implementation for the different vehicle categories, lead-time, the impact on other community objectives and the consequence of the extension of certain requirements to vehicle categories not covered in the past.

Pre-discussions within MVEG would also allow Member State experts to be better informed on the Commission's objectives and the details of its proposal well ahead of the debate at Council level.

Finally, the process leading to this draft proposal does not seem to be in conformity with the better regulation principles and the need to improve the competitiveness of the EU motor vehicle industry as presently discussed under the CARS 21 initiative.

Dear Sir/Madam,

Local air quality is an enormous problem at the moment, not only because of health aspects (which are of course the most important), but also because of the fact that the EC has set standards on local air quality levels that are a great threat to spatial planning developments everywhere in Europe. This also causes economical problems, since for example in large parts of our country it is no longer possible to build houses, offices, industrial areas etc, due to the fact that the air quality standards cannot be met. For all stakeholders involved, the most logical and most effective way to solve the local air quality problems as described, has to be found in emission reduction at the main polluting sources. With no exception, the main polluting source all over Europe in this respect is road traffic, especially road traffic in urban areas. Reduction of emissions has therefore primarily to be found at those sources, both in heavy duty and in light duty vehicles and there is no doubt that enforcing stricter emission standards are necessary to solve all traffic related local air quality problems before 2010.

In this respect, the draft proposals for 'Euro 5' emission standards for passenger cars and light duty vehicles, as released by the European Commission in July 2005, are very disappointing, both with respect to the standards itself and the proposed unclear timeframe (it seems that implementation will not even take place in 2008).

The proposals completely pass over the at present already technically feasible and available measures to reduce tailpipe emissions and fuel consumption. From the common experiences in European demonstration projects we are aware what technologies are possible today. Even in the heavy duty class we introduced vehicles and retrofitting technologies meeting Euro V and EEV standards. In the light duty class, vehicles like for example the Toyota's Prius and Avensis D-cat already meet these proposed standards, this would also count for some alternative fuelled European made vehicles. These technologies can also be applied on light duty vehicles and it is certainly expected that Toyota (but also other Japanese and ensuing Chinese and Korean brands) will reach much better standards in near future, certainly before 2008, because they are steered by the US market.

Based on our project experiences with the European automotive industry, which were from a customers point of view not always very positive, the EC (DG TREN) started a discussion in 2003 amongst all involved stakeholders to search for a path to accelerate the introduction of clean vehicle technologies.

Referring to the youngest expert meeting in that framework on 20 April 2005, it became very clear to us, the cities, that the automotive industry in general (statements especially made by ACEA) is not really in favour of introducing alternative (fuel) technologies. Their main argument for that attitude is that according to them, also with petrol and diesel technology it is possible to reach the same emission standards as with the alternative fuel technologies. Assuming that such arguments are true (and who are we to doubt that), the Commission should grab such an argument with both hands to go for much stricter emission standards, than what is now introduced in this proposal.

The proposed standards as we see them now are to be described as a step backwards in stead of a step forwards....., the difference with the already established Euro IV standards is also very (in fact too) small.

We assume European car manufacturers still want to export to the US, like the Japanese, Chinese and Korean, for which goal they must be able to provide vehicles which can comply to much stricter standards, so in our opinion it is one way or another. Either they really are unable to meet stricter standards, in which case US export will become a rapidly declining part of their market, or they are able to meet stricter standards (as also stated by ACEA) in which case the EC could set the same standards as the US. It would really be nonsense if the same manufacturers could provide the same vehicles in different standards according to where they will drive, wouldn't it.

The US standards are even more appealing to us, since they are not only much stricter than the Euro V proposals, but they also have put aside the idiotic difference between standards for petrol and diesel vehicles. Even in Europe there is no such difference in the heavy duty class, except for methane, all standards apply for diesel and alternative fuelled trucks and buses. That is the right approach, because it is the pollution that counts and which should be fought, regardless the used technology. If that will not be the case the EC may force a lot of European cities to end up in Brazilian style, that is to

forbid diesel passenger cars and light duty vehicles entering our cities, because they are too polluting on a local level (as stated; for heavy duty we already found solutions, so that class is not our future problem).

History learns that stricter standards normally lead to a much higher level of innovation, which would also support a better long term perspective for the European automotive industry, so why the fear to challenge them to the utmost?

To conclude, although we are not always on the same level with them, in this case we support the line of comments which will be or is already provided by our national foundation "Natuur en Milieu" and their European partner "Transport and Environment", the latter responsible for a more detailed position paper, which will be or has been sent separately.

Public Works Rotterdam

Test und Technik

Landsberg, 30/08/2005

Draft Proposal of the EU Commission Regarding Euro 5 Emissions

Technical evaluation of the proposals:

In principle, a uniformisation of emission limits irrespective of the engine type is desirable. However, economic feasibility by the implementation deadline of the directive must be given due consideration.

Re. no. 1 – The 200 mg/km NO_x limit for diesel vehicles

ADAC position: to be changed to 150 mg/km

A comparison of the various proposed NO_x limits will reveal the average added cost to the consumer, the reductions in NO_x emissions from diesel vehicles and the increase in CO₂ emissions they would entail, in relation to Euro 4 diesel vehicles. The data primarily reflects the German market.

| NO _x limits | 80mg/km | 125mg/km | 150mg/km | 200mg/km |
|---|---------|----------|----------|----------|
| Average added yearly cost per vehicle [€] | 101 | 78 | 61 | 30 |
| Average variation of emissions in relation to Euro 4 vehicles | | | | |
| NO _x | -77% | -54% | -36% | -11% |
| CO ₂ | +2.0% | +3.2% | +4.5 | +2.5 |
| Cost/value analysis | | | | |
| € per % in NO _x reduction | 1.31 | 1.44 | 1.69 | 2.67 |

The cost/value ratio – the added yearly cost for the consumer required to achieve the proposed reduction in NO_x emissions [Euro per % in NO_x reduction] – is best for the

proposed limit of 80 mg/km (1.31). The proposed 200 mg/km limit is particularly inefficient (2.67).

Under actual road conditions, the proposed 200 mg/km limit would merely achieve an 11% reduction in NO_x emissions as compared to a Euro 4 diesel. The ADAC EcoTest programme, supported by FIA Foundation (see annex), for the measurement and evaluation of actual emissions based on the European driving cycle and an additional highway cycle has clearly proved, that while emission limits are met (diagram 1) in the homologation cycle (ECE or NEDC cycle), reductions are considerably lower under actual road conditions (diagram 2) than stricter limits would suggest. Stricter limits can be met only by using NO_x after-treatment systems such as NO_x Storage Catalysts (NSC) or Selective Catalytic Reduction (SCR) using urea.

According to EcoTest results, there is one model achieving an NO_x emission rate of 118 mg/km in the NEDC today (Toyota Avensis with DPNR system = NSC). A few models with conventional technology achieve around 150 mg/km. Initially, the ADAC and other European

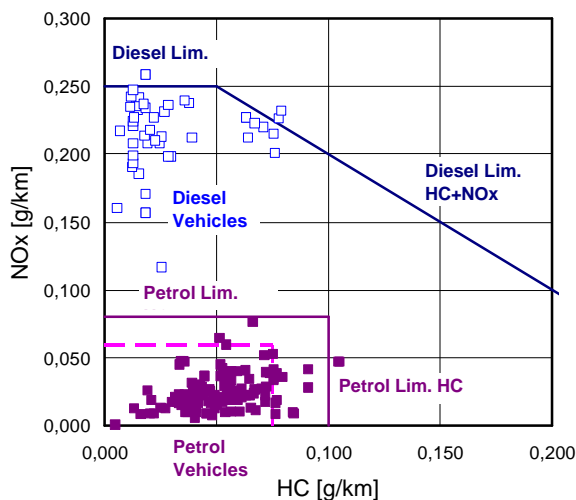


Diagram 1: NO_x and HC emissions of petrol and diesel vehicles in the NEDC (EcoTest measurements).

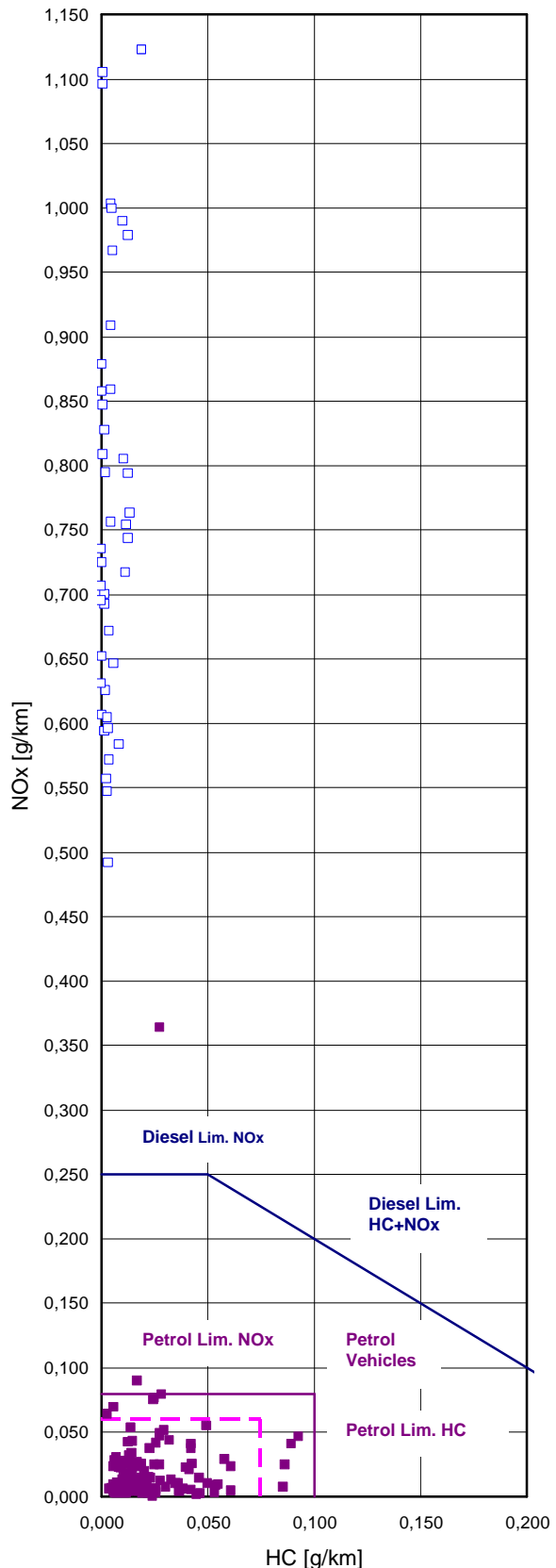


Diagram 2: NO_x and HC emissions of petrol and diesel vehicles in the ADAC motorway cycle (EcoTest measurements). Whereas petrol vehicles

clubs suggested an NO_x limit commensurate to the state of the art of 125mg/km.

With a view to come into force of the directive by 2010 and in order not to jeopardise feasibility, from our perspective today, an NO_x limit of 150mg/km appears to be a reasonable compromise, provided that further reductions of NO_x limits are agreed as long term goals (achieving a further equalisation to petrol vehicles). In this context, due consideration must be given to the developments on the US market, where diesel vehicles are expected to comply with an NO_x limit of approx. 40mg/km starting 2007.

Re. no. 2 – The 5 mg/km Particulate Matter emission limit for diesel vehicles

ADAC position: supported

This emission rate has been proved in the ADAC EcoTest (see diagram 3). While no specific technology or method is mandated, meeting this emission limit de facto requires the use of a closed-body diesel particulate filter (DPF). On the other hand, today's technology is adequate to verifying this value. A stricter limit would not change anything from the point of view of the technical equipment of a vehicle while it would open the doors to lengthy discussions about the verifiability, for instance of a 2.5 mg/km PM limit. Under such circumstances it would be virtually impossible to implement Euro 5 quickly.

Should a less stringent limit than the one proposed be implemented, we fear that open filter systems such as the ones used in retro-fit solutions would get to prevail in OEM equipment. This would allow setting the filtering rate by choosing among a series of parameters, but the actual efficiency of such a filter could be considerably inferior to that of the closed-body systems used today as OEM equipment, even though the low emission limit may suggest otherwise.

Re. no. 3 – The introduction of a standard to limit the number of particles

ADAC position: supported

The actual health hazard in connection with particulate emissions comes from fine and ultra-fine particulate matter. This type of particulate matter accounts for only a relatively small proportion of PM emissions. However, the number of such particles is critical. The introduction of a standard to limit the number of particles is therefore a logical and necessary step. Unfortunately, today there is no consistent measurement method and therefore the implementation with Euro 5 seems unlikely.

The closed-body OEM systems used by manufacturers today contribute towards a mostly linear decrease in the numbers of particles across the whole size range (see diagram 4).

Re. no 4 – Further reductions in NO_x and HC emissions for petrol vehicles by 25% respectively relative to Euro 4

ADAC position: declined

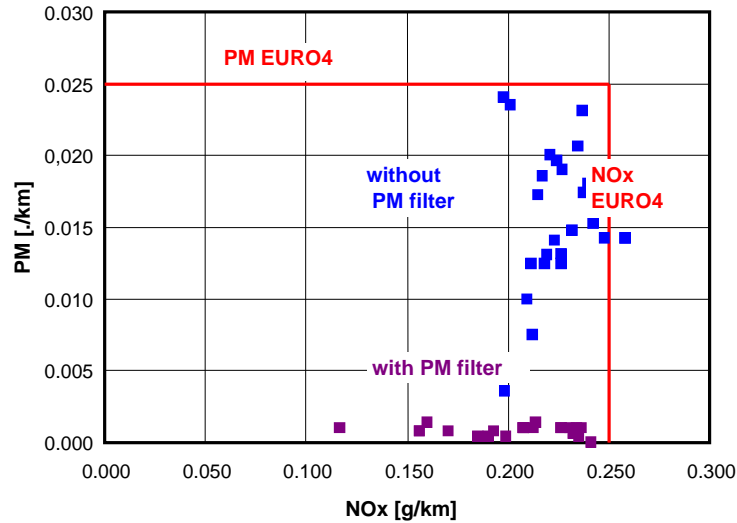


Diagram 3: NO_x and particulate emissions of Euro 4 diesel vehicles with and without diesel particulate filters in the NEDC (EcoTest measurements). All tested vehicles equipped with DPF are clearly below the proposed Euro 5 limit.

The ADAC EcoTest programme confirms that the proposed limits are met even today by 90% of the tested Euro 4 petrol vehicles (diagram 1). The introduction of stricter limits may not lead to a sizeable variation in actual emissions. Petrol vehicles are mostly within the mandatory limits even outside the ECE cycle. Their performance under actual road conditions appears to be clearly better than that of diesel vehicles.

Introducing stricter emission limits for petrol cars may be counter-productive if the intermediate goal is unified emission limits irrespective of the type of engine, i.e. mainly for diesel and petrol vehicles.

Re. no. 5 – The introduction of a particulate matter limit for petrol cars

ADAC position: supported

If all types of engines are to be treated equally when it comes to emission limits, it is

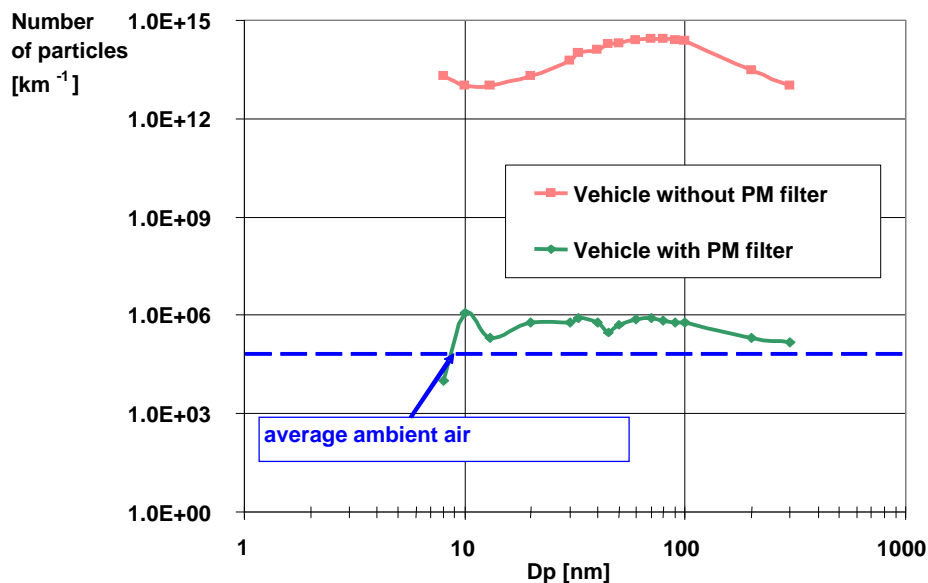


Diagram 4: Distribution of particle sizes and numbers in vehicles with and without a closed-body diesel particulate filter (ADAC measurements)

logical to demand compliance with a particulate matter limit from all types of vehicles and petrol vehicles in particular. Within the framework of EcoTest, a number of vehicles with direct injection technology were tested. Across the board, their PM emissions were below 5 mg/km, with most of the vehicles clearly lower than that. None of the vehicles was equipped with a filter or similar device. Therefore filters cannot be expected to have a de facto impact on emissions.

Re. no. 6: The extension of durability to 160,000 km

ADAC position: supported

Such an extension of durability would be in line with the increased average life of today's vehicles and is therefore a reasonable development.

Re. no. 7 – Abolishing the exception for passenger vehicles weighing over 2,500kg

ADAC position: supported

The vehicles in question (mostly SUVs such as BMW X5, Mercedes ML, Toyota Land-cruiser etc.) are being operated as passenger cars. In most of the cases, registering them as light utility vehicles or LCVs is not in line with their actual use. A preferential treatment when it comes to emission standards is therefore unjustified.

EcoTest has equal standards for the treatment of all types of vehicles.



Ranking of 300 car models regarding the environmental issue

The ADAC EcoTest

The EcoTest was designed on behalf of the FIA Foundation (worldwide association of automobile clubs) to aid consumers who opt for a low-emission vehicle, and, consequently, to enhance competition among manufacturers. On the one hand, in the test laboratory, pollutants like carbon monoxide, hydrocarbon, nitrogen oxide as well as the diesel particulate emission are measured, and on the other, the greenhouse gas CO₂. Measurements are not merely based on the statutory European driving cycle but also on an additional ad hoc developed motorway cycle. While all the pollutants are rated points on a summarised basis, the CO₂ emission is assessed according to the individual vehicle class. Carbon dioxide is an important consumer issue also in other respects: high emission levels result in a high fuel consumption.

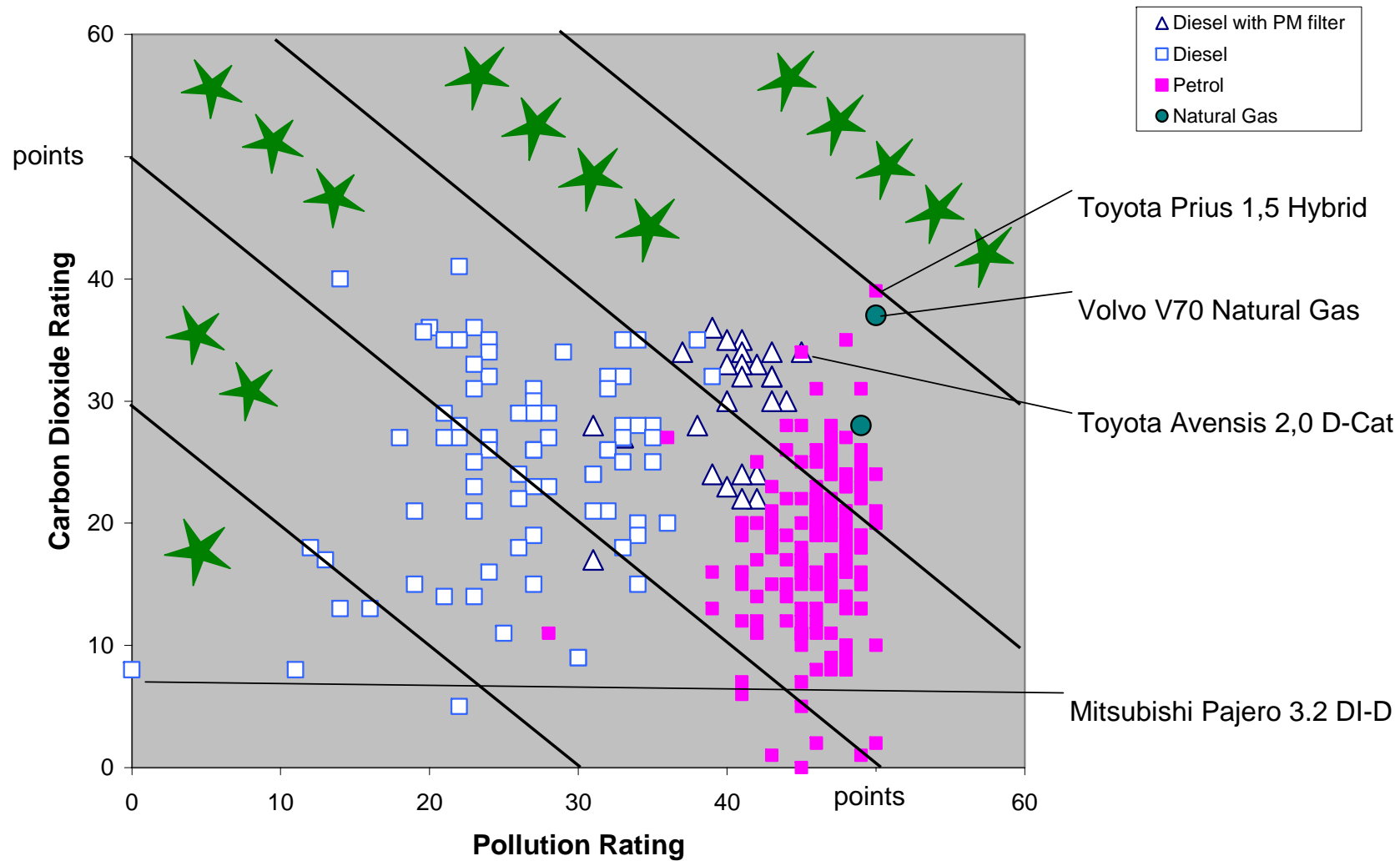
Some remarkable details of the latest test series: new diesel cars, provided they are fitted with a particle filter, have made a significant boost in terms of pollution control, nowadays many of them are "cleaner" than a petrol car. The overall winner still is the Toyota Prius Hybrid, having a combined electro and combustion engine.

Results in summary (see figure: ADAC EcoTest Results)

The cleanest car of the ADAC EcoTest comes from Japan and is the Toyota Prius 1.5 with hybrid propulsion (achieving 50 points in the pollutants category and 39 points for CO₂ emissions which is a total of 89 points = almost 5 stars). For the first time, a natural gas car, the Volvo V70 BiFuel, comes in second. This is the result of the current ADAC EcoTests, ranking some 276 car models according to their environmental impact. Diesel cars have hugely improved: many of the diesel versions are cleaner than a petrol version. However, none of the cars has scored the maximum points and, thus, neither the maximum 5 stars. 55 car models achieved 4 stars (70 to 89 points). The cleanest petrol car is the Skoda Octavia 1.6 FSI Ambiente (80 points) on position 4, followed on 5th position by the Toyota Avensis 2.0 D-CAT Executive (79 points), which is the cleanest diesel car with particle filter and the only one featuring a nitrogen oxide catalyst. That a particle filter is no cure-all for cleanliness, is proved by the Peugeot 807 HDi Tendence. Since its CO₂ and nitrogen oxide emissions are too high, it merely achieved 2 stars (48 points). The worst performing vehicles in terms of exhaust emissions are the heavy diesel cars without particle filter: Opel Vivaro Life 2.5, Mitsubishi Pajero Classic 2.5 as well as Renault Grand Espace 3.0 and Hyundai Terracan 2.9, both with automatic gear. They were all rated one star, which corresponds to less than 30 points.

For the purpose of easier comparability, the rating was performed in different vehicle classes. Best performer of the luxury class is the Mercedes S 320 diesel with automatic gear (75 points), winner in the executive class is the Volvo V 70 BiFuel (87 points, gas-fuelled operation), the family class is won by the best performing petrol car, the Skoda Octavia 1.6 FSI Ambiente (80 points) and the top performer of the small family class is the overall test winner Toyota Prius 1.5 Hybrid (89 points). The results for the supermini and city class was really disappointing. Only one car was rated 4 stars: the VW Polo 1.4 FSI Highline (71 points).

ADAC EcoTest Results



Comparison of pollution and carbon dioxide rating for all tested diesel and petrol vehicles.

0 points = worst performing new car models on today's market (pollutants and CO₂ emission)

50 points = best performing new car models on today's market (pollutants)

41 points = best performing new car model on today's market (CO₂ emission)

Président du Groupe de travail
des Stratégies et de l'Examen
au sein de la Convention LRTAP
c/o OFEFP
Section Qualité de l'air
CH-3003 Berne

Commission européenne
Direction générale
Entreprise et Industrie
BE-1049 Bruxelles

Par courriel à:
entr-euro5@cec.eu.int

Berne, le 8 septembre 2005

Stakeholder consultation – EURO 5 Emission Limits for Light Duty Vehicles

Madame, Monsieur,

Nous saisissons l'opportunité de nous prononcer au sujet du projet de nouvelles prescriptions en matière de gaz d'échappement pour les véhicules légers dans le cadre de la consultation des partenaires concernés, que vous avez organisée, et nous vous en remercions.

Ce sujet représente, en effet, un grand intérêt pour les travaux de la Convention CEE-ONU sur la pollution atmosphérique transfrontière à longue distance (Convention LRTAP), en particulier dans le contexte de la mise en œuvre du protocole de Göteborg. Ce protocole relatif à la réduction de l'acidification, de l'eutrophisation et de l'ozone troposphérique est entré en vigueur le 17 mai 2005. Les 31 pays - signataires y ont pris des engagements en matière de plafonds nationaux d'émissions notamment pour les oxydes d'azote (NOx) et pour les composés organiques volatils (COV) à atteindre en 2010 au plus tard. De plus, des valeurs limites d'émissions pour les sources mobiles (correspondant aux valeurs limites d'émissions EURO 3 et 4) font aussi partie des obligations à mettre en œuvre.

A la vue des analyses en cours, il apparaît que plusieurs pays auront des difficultés à atteindre ces plafonds nationaux d'émissions d'ici à 2010. En outre, des mesures supplémentaires de réductions de NOx et de COV seront nécessaires pour respecter les niveaux et charges critiques en matière de protection de la santé humaine et des écosystèmes, constituant l'objectif du protocole à atteindre au-delà de 2010.

Lors de l'adoption du protocole, les Parties à la Convention avaient également affirmé la nécessité de réduire les fines particules respirables. Ces efforts feront l'objet de nouveaux engagements lors de la révision du protocole. Des études récentes effectuées en collaboration avec l'Organisation mondiale pour la santé laissent apparaître qu'une réduction de 9 mois de l'espérance de vie de la population européenne est à déplorer en raison des concentrations excessives de PM2.5 dans l'air ambiant. L'ozone provoque aussi des impacts extrêmement dommageables pour la santé humaine. La situation de l'été 2003 avec son taux de mortalité élevé dans certaines régions européennes en a fourni une illustration dramatique. Il est par conséquent impératif de limiter plus fortement les émissions des polluants précurseurs de ces concentrations excessivement néfastes.

Dans ce contexte, nous saluons l'initiative de la Commission européenne de proposer de nouvelles prescriptions sur les gaz d'échappement des véhicules à moteur (normes EURO 5). Nous sommes d'avis que les futures normes devraient être élaborées en ciblant les meilleures techniques disponibles et les plus performantes («Best Available Techniques»).

Ce principe sert, en effet, à établir les exigences pour les Parties aux protocoles additionnels à la Convention CEE-ONU et c'est sur cette base que nous vous adressons des propositions visant à renforcer le présent projet de normes EURO 5 pour les véhicules légers:

Proposition n°1 : réduire les valeurs limites pour les émissions de NOx des moteurs diesel d'au moins 50% par rapport à l'état actuel

Les systèmes techniques actuellement disponibles (par ex. « SCR catalyst, NOx Adsorber catalyst or high gas recirculation systems ») permettent déjà aujourd'hui d'atteindre un niveau inférieur à 125 mg/km. Hors, les normes EURO 5 ne seront mises en place que dans plusieurs années et elles devraient donc prendre en compte les performances techniques les plus avancées. De plus, les normes applicables dès 2007 aux Etats-Unis (« ie. US EPA's Tier 2 »), par ailleurs aussi partie au protocole de Göteborg, sont inférieures à la valeur proposée et démontrent donc clairement que des solutions techniques sont déjà entre les mains des constructeurs permettent d'atteindre un niveau bien inférieur aux valeurs proposées.

Proposition n°2 : valeurs limites d'émissions de particules à 1,0 mg/km

Les filtres à particules actuellement sur le marché pour les voitures à moteur diesel permettent d'atteindre ce niveau de performance et une valeur limite est aussi nécessaire pour les véhicules à essence à injection directe. En effet, les suies sont les acteurs essentiels de la pollution par les particules respirables et constituent la cause majeure de la mortalité enregistrée dans les agglomérations urbaines. Les émissions de particules sont donc à limiter à un niveau aussi bas que possible (selon l'état de la technique le plus avancé). A plus long terme, une limitation du nombre des particules (par ex. 10^{11} /m³) est souhaitable, elle permettrait d'assurer un fonctionnement efficace et performant des filtres à particules. Ceci devrait faire l'objet d'une mise à jour de la réglementation aussitôt que les travaux de normalisation au sein du groupe UNECE PMP seront achevés.

Proposition n°3 : mise en œuvre aussitôt que possible, mais au plus tard en 2010

Les Parties au Protocole de Göteborg auront des difficultés à respecter leurs engagements en matière de plafonds nationaux d'émissions pour les NOx en 2010, notamment du fait de la forte croissance du parc de véhicules diesel en Europe et de la surestimation initiale de l'efficacité des normes EURO3 pour les véhicules lourds. Il apparaît dès lors nécessaire de renforcer les normes EURO5 pour les véhicules lourds, ce qui fait l'objet d'un autre débat, et d'envisager une mise en œuvre aussi rapide que possible des normes EURO5 pour les véhicules légers. La proposition de mise en œuvre 36 mois après l'entrée en vigueur de la nouvelle directive devrait avoir lieu avant 2010 de façon à déployer ces effets bénéfiques pour la qualité de l'air dans les meilleurs délais.

En espérant qu'il vous sera possible de tenir compte de nos remarques et propositions lors de la rédaction finale de votre projet de directive, nous vous adressons, Madame, Monsieur, nos salutations distinguées.

Président du Groupe de travail
des Stratégies et de l'Examen
au sein de la Convention LRTAP



HYUNDAI MOTOR EUROPE TECHNICAL CENTER GMBH

Response to Stakeholder Consultation Concerning the

“Draft Proposal for Euro 5 Emission Limits For Passenger Cars and Light Duty Vehicles”

by

HYUNDAI MOTOR COMPANY and KIA MOTORS CORPORATION

Time Schedule

The proposed Euro 5 Emission Limits will affect the whole engine design, emission control system and in some cases even the packaging of our cars. Due to this fact, the fulfillment of the Euro 5 limits has to be considered from the initial development of a new car on. This relevant product development time is in our case 5 years. To be able to comply with the new Euro 5 Emission standard we need a corresponding lead time.

The earliest time schedule to enable Hyundai and KIA to comply with the Euro 5 proposal is:

| | |
|----------|--|
| M1/N1(I) | EC-Type approval: January 2010 First Registration: January 2011 |
|----------|--|

| | |
|----------------|--|
| M1/N1 (II,III) | EC-Type approval: January 2011 First Registration: January 2012 |
|----------------|--|

This is the earliest timeline to comply with a new Euro 5 emission standard. Any earlier time schedule would force Hyundai and Kia to restrict the European sales of models not fulfilling Euro 5 limits before they reached the initial end of the product life-cycle. Therefore we ask the European Commission to allow a sufficient lead time to sell these cars according to the initial life-cycle plan. This would ensure a reasonable return of our development costs. In addition, we need the 5 Years lead time to develop our new models in compliance with the proposed Euro 5 standard.

M1 Vehicles above 2500 kg

The Draft Proposal for Euro 5 emission standards foresees only one emission limit for all affected M1 cars regardless of their weight.

The current differentiation between cars below and above 2500 kg GVW would be cancelled. The results would be:

- The weight of a car and the herewith corresponding feasibility to achieve certain emission limits would not be any longer taken into account.
- Relevant models are registered as M1 as well as N1; in our case there is basically only the number of seats and some interior parts are different. For the same model, different emission limits would be to fulfill which are only depending whether the car is registered as N1 or M1.

Fulfillment of Euro 5 emission limits with heavy M1 cars (especially diesel engines) will economically not be feasible because a lot of additional equipment such as NOx after treatment would need to be developed and installed. The additional costs (development and production) would increase the vehicle price dramatically.

Customers would not accept this big increase in price and will prefer to buy the model with a gasoline engine instead of a diesel engine. This shift of the sales mix to gasoline engines would lead to a significant increase of CO₂ emissions which would counteract the efforts of the car-industry to reduce the CO₂ emissions.

To enable the car-industry to make significant progress in CO₂ reduction, we strongly recommend keeping the current vehicle weight related approach which worked satisfactory up to now by using the corresponding N1 values also for heavy M1 cars.

We think that the European Commission can follow our proposal since the Explanatory Memorandum by European Commission mentions: “[...] *the emission limit has been set so that reductions can be achieved by further internal engine measures, to avoid the need for NOx after treatment* [...]”. This paragraph shows EU Commissions basic intention to prevent the need to install NOx after treatment systems for all cars.

Number Based Approach to PM Emissions

We think the basic approach of Euro 5 emission limits is to ensure a certain level of air quality in Europe. The success of the Euro 5 Regulation will be finally measured by the air pollution values in Europe. As far we know air pollution regarding the PM value is currently measured on the basis of particle mass.

Due to this fact we are wondering why in the Euro 5 proposal a particle number based test procedure should be introduced in parallel to the particle mass requirement.

In our opinion the particulate mass is in good correlation with the particulate number. Due to this, we are considering an additional particulate limit as a redundant procedure which will not provide any improvement. But the additional costs for the needed test equipment and the approval tests will be significant. To avoid new approval tests without further benefit, we strongly recommend neglecting the particulate number issue.

In our opinion, this issue should be discussed in detail within the MVEG.

Gasoline Engines

The main aspect for gasoline engines is the reduction of the HC and NOx limits by 25%. Lowering the NOx limit in the proposed way will be a target conflict in car industry's efforts to lower the CO₂ emissions. The effect on air quality of a lower NOx limit will be minor in comparison with the negative impact on our efforts to reduce CO₂ emissions. Therefore we strongly recommend to reconsider the NOx issue and to keep the current Euro 4 values. In regard to HC emissions, we also recommend to keep the current Euro 4 values, so that car industry's efforts in developing and offering CNG vehicles are not affected.

Durability Requirement in Regard to Type V Test

Obviously the proposal is to double the durability requirement for the Type V test from currently 80.000 km to 160.000 km. This would be an additional big work load for our development and homologation process. To keep the work load and homologation costs at a reasonable level we want to have also in the future the possibility to apply the DF factors according to Annex I, 5.3.6.2.

In our general opinion the current requirement reflects the durability of the emission control system in a sufficient way. There is no need to expand the requirement and to increase the homologation costs significantly.

Future Procedure and Role of MVEG

In order to incorporate the needed changes, the whole draft proposal needs to be reworked.

We strongly recommend that this should be done by strong involvement of the MVEG. We are confident that this group will give a significant input to set up a final Euro 5 standard which represents the right balance between all environmental needs and technical/economical restrictions and which will also provide the needed details of the provisions to execute the related type-approvals in a clear way to prevent any misinterpretation.

Hyundai Motor Europe Technical Center GmbH

Hyundai-Platz, D-65428 Rüsselsheim



Ministero

delle Infrastrutture e dei Trasporti

DIPARTIMENTO PER I TRASPORTI TERRESTRI
Direzione Generale per la Motorizzazione

prot. 766 /MOT1

Rome, 9 September 2005

European Commission
DG ENTR F1
Rue de la Loi 200
B- 1049 Brussels

Subject : Preliminary draft proposal for a Regulation of the EP and Council relating to emissions of atmospheric pollutants from motor vehicles - stage EURO 5
Stakeholder consultation.

Dear Sirs,

In reference to the preliminary draft proposal, which has been made available on the Commission website, the Italian Ministry of Infrastructure and Transport welcomes it in principle and would like to express the following comments:

General

During informal consultation which took place in the year 2004 Italy had already expressed the view to discuss a draft proposal presented by the Commission as soon as possible. Although we welcome this consultation which allows all the stakeholders to make comments on the preliminary draft we would be grateful if a more detailed debate could take place in the Motor Vehicle Emission Group (MVEG) in order to allow Member State experts to be better informed about the Commission's objectives and the details of the proposal before it is transmitted to the Council and E.P.

Application dates

Taking into account that EURO 4 requirements applies as from 2005 and in order to give reasonable time to automotive industry to develop new products in conformity with the new requirements we think that EURO 5 should enter into force around the year 2010. Furthermore, it would be desirable to link the date of application to the entry into force of the comitology Regulation (24 months after its entry into force for new type approvals). For N1 category vehicles an additional year should be foreseen taking into account that EURO 4 provisions will apply starting from 2007 (at least for some categories).

Compression ignition engine measures

We welcomed the proposed limits.

Positive ignition engine measures

Concerning the reduction of 25 per cent of HC limits compared to EURO 4 stage we are not convinced that this would be a cost effective measure. In addition the reduction of HC limits would lead to some technical problems which would rule out CNG vehicles.

Italy believes that CNG is an interesting short and medium term solution in order to develop environmentally friendly vehicles in the EU market.

Therefore, we ask the Commission to reconsider the proposed reduction of HC . Should the Commission deem to propose such a reduction we strongly advice to introduce for CNG fuelled vehicles a limit for non methanic hydrocarbons (NMHC) only.

The Commission proposes to delete the provision for M1 vehicles over 2500 kg to meet N1 emission limits. Although such a proposal has valid justification for certain kind of vehicles we think that commercial vehicles which are also used for carrying passengers should not be penalised . Therefore, we suggest to keep valid the present possibility to use N1 limits for M1 vehicles fitted with more than 7 seats.

Thanking you in advance for considering the above comments.



JAPAN AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.

JIDOSHA KAIKAN

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9 September, 2005

**JAMA's Response to Stakeholder Consultation
Draft Proposal for Euro 5 Emission Limits
for Passenger Cars and Light Duty Vehicles**

0) General

Fundamentally, the emission restriction, in order to contribute to the environmental improvement in real world, must be concluded in consideration of such as the need, technical feasibility and cost efficiency based on air quality standard. Therefore, JAMA understands that the Commission is conducting verification of them with CAFÉ (Clean Air For Europe).

However, this time, JAMA has concerns about a proposed regulation draft without publication of the results.

1) Petrol emission requirement

It is widely acknowledged that any further reduction in the NOx and Hydrocarbons(HC) limit values for gasoline vehicles would have a minimal impact on European air quality. Secondly, any scenarios for gasoline vehicles are not included in TREMOVE, so it seems European Commission do not have an assumption of further reduction for these vehicles.

JAMA is therefore opposed to this requirement.

2) Introduction of Particulate Number standard

Particulate number standard should not be introduced before measuring method including a calibration and traceability for national standards is established.

There are research data indicating a correlation between PM mass and particle number. Thus the gravimetric method is more reasonable because the ambient air quality standard is based on weight measurement, and it is necessary for preserving the efficiency of type approval.

3) Durability Extension

Before the durability extension is decided, it is imperative to practice the 100,000 km surveillance required under the current regulation and to determine the actual emission condition in the market resulting from the 100,000 km surveillance.

As JAMA concerns large impacts of a durability extension on type approval and vehicle development, it is essential to fully evaluate the effects, both negative and positive, of the proposed extension before it is decided.

4) Discontinuation of exemption for heavy cars (more than 2.5t)

JAMA requests to be kept the exemption for heavy cars.

Last year, manufactures responded to the Euro5 Questionnaire, assuming the current vehicle categorization (i.e. N1 regulation could be applied to those M1 vehicles that exceed 2.5t). It is



JAPAN AUTOMOBILE MANUFACTURERS ASSOCIATION, INC.

therefore believed that the proposal (e.g. NOx limit of 0.20 g/km) should be based on results which was replied from carmakers' If the current vehicle categorization is to be changed, the proposal should be reviewed and re-determined.

Further, it has been informed that the proposed NOx limit assumed without NOx after treatment. While this assumption may be feasible for smaller cars up to 2.5t, it will be technically difficult for larger cars exceeding 2.5t to reach the proposed NOx limit without NOx after treatment. Generally it is more difficult to achieve compliance for larger cars due to the greater complexity of their emission control technology. In addition the proposal means the shortening of leadtime for larger cars.

However, if the NOx limit is to be relaxed to make without NOx after treatment for all passenger cars including larger models over 2.5t, it may result in an over-relaxing of the NOx limit for smaller cars below 2.5t. For this reason, JAMA requests the introduction of two different NOx limits - one for cars up to 2.5t and the other for cars exceeding 2.5t.

5) Implementation proposal: 18 Months (New types) and 36 Months (All types) after publication in the official journal

Because manufactures must plan their development on a long-term basis, JAMA requests to fix the implementation date (i.e. 2010 for new types) and to ensure a sufficient leadtime between final draft adoption and implementation. Also, JAMA requests that, to disperse development, homologation and production preparation, one-year time delay between M1 and N1.

To be specific, JAMA's request concerning enforcement date is as follows:

* M1 (less than 2.5t) and N1 class 1

For new-type vehicles - January 2010 or 24 months after regulation enactment, whichever later.

For all vehicles - One year after the enforcement date of new-type vehicles.

* M1 (over 2.5t) and N1 class 2, class 3

For new-type vehicles - January 2011 or 36 months after regulation enactment, whichever later.

For all vehicles - One year after the enforcement date of new-type vehicles.

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Der Regierende Bürgermeister von Berlin

Senatskanzlei

1

Der Regierende Bürgermeister von Berlin
Senatskanzlei - 10871 Berlin (Postanschrift)

European Commission
DG Enterprise
per E-Mail
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GeschZ. (bei Antwort bitte angeben)

I /Ltr

Bearbeiter(in)

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Datum

9. September 2005

Stakeholder consultation/ Automotive Industry

Dear Madams and Sirs,

pursuant to your call for consultation and comment from interested stakeholders into the draft proposal for Euro 5 emission limits for passenger cars and light duty vehicles please find attached the comments of the Land Berlin - Senate Department for Urban Affairs/ Protection of the Environment.

Our main concern are the proposed emission limits : we are afraid that they are not sufficiently low to enable us to meet the required current and future EU- air quality standards in Berlin.

For further explanations and details we refer to the attached document.

Senate Chancellery of Land Berlin
Federal and European Affairs
Head of Department

Anschrift für Fracht,
Einschreiben, Eilboten:
Der Regierende Bürgermeister,
Senatskanzlei, 10871 Berlin

Verkehrsverbindungen:
U- und S-Bahn Alexanderplatz,
Autobus 100, 142, 157, 257

Sprechzeiten des
Bürgerreferates:
Mo/Di/Fr 9.00 - 12.00 Uhr,
Do 16.00 - 18.00 Uhr

IX B 31
Senatsverwaltung für Stadtentwicklung Berlin
Brückenstraße 6
10173 Berlin

Stakeholder Consultation Euro 5
Stellungnahme zum Vorschlag der EU-Kommission zur Regulierung der Emission von
Luftschadstoffen durch Kraftfahrzeuge (Euro 5 für Pkw und leichte Nfz)

Sachstand:

Mit Inkrafttreten der Grenzwertstufe Euro 4 zum 1.1.2005 wurde insbesondere für Benzin-Pkw ein fortschrittlicher Stand der Motor- und Abgastechnik eingeführt. Mit der schrittweisen Verschärfung der Abgasgrenzwerte konnten seit 1992 die Emissionen von Pkw und leichten Nutzfahrzeugen erheblich gesenkt werden.

Aufgrund neuerer Erkenntnisse zur Wirkung von Luftschadstoffen wurden von der EU in den letzten Jahren strenge Luftqualitätskriterien geschaffen. Am 1.1.2005 trat als erstes der Grenzwert für Feinstaub (PM10) in Kraft. Dieser Wert kann jedoch in den meisten europäischen Großstädten, so auch in Berlin, nicht eingehalten werden. Auch für den ab 1.1.2010 in Kraft tretenden Grenzwert für NO₂ wird in den Großstädten eine Überschreitung prognostiziert. In beiden Fällen sind Hauptverkehrsstraßen die kritischen Orte und circa 50% der PM10-Belastung bzw. über 80% der NO₂-Belastung stammen aus dem Verkehr. Die Einhaltung der von der EU-Kommission festgelegten Grenzwerte unter Aufrechterhaltung der notwendigen Mobilität erfordert damit die Ausschöpfung aller technischen Maßnahmen zur Reduzierung der verkehrsbedingten Luftschadstoffemissionen.

Mit Euro 4 ist jedoch die letzte bisher verabschiedete Abgasnorm erreicht. Angesichts der heutigen technischen Möglichkeiten zur Emissionsminderung ist eine Weiterentwicklung der Abgasgesetzgebung über Euro 4 daher dringend erforderlich. Das Land Berlin begrüßt daher, dass die Europäische Kommission einen Entwurf für eine Euro 5-Norm vorgelegt hat. Mit der geplanten weiteren Verschärfung der Abgasgrenzwerte können die Ziele in der Luftreinhaltung unterstützt und neue Impulse zur Entwicklung fortschrittlicher und damit wettbewerbsfähiger Fahrzeugtechnik in Europa gesetzt werden.

Der vorgelegte Entwurf bleibt allerdings aus der Sicht des Landes Berlin hinter den heute zur Verfügung stehenden Möglichkeiten der Motor- und Abgastechnik zurück. Die europäische Kommission nutzt damit nicht im erforderlichen Maße die eigenen Möglichkeiten, die von ihr festgelegten Ziele in der europäischen Luftreinhaltepolitik erreichbar zu machen.

Änderungsvorschläge

Das Land Berlin regt an, folgende Aspekte stärker zu berücksichtigen:

1. Schärfere Grenzwerte für Partikel

Für Pkw und für leichte Nutzfahrzeuge der Kategorie I und II sollte der Grenzwert auf 2,5 mg/km, für leichte Nutzfahrzeuge der Kategorie III auf 3,2 mg/km gesenkt werden.

Die Einführung eines Grenzwertes für die Partikelanzahl nach Absicherung der notwendigen Messverfahren wird begrüßt.

Begründung:

Der vorgeschlagene Grenzwert von 5 bis 12 mg/km bleibt hinter den bereits heute bestehenden technischen Möglichkeiten zurück, obwohl diese Grenzwerte erst 2010 in Kraft treten sollen. Damit werden nur wenig Anreize für technische Weiterentwicklungen geboten.

Nach dem heutigen Stand der Technik können Diesel-Pkw einen Partikelgrenzwert von 1 mg/km erreichen. Ein Grenzwert von 2,5 mg hätte dem gegenüber schon einen erheblichen Sicherheitsabstand. Leichte Nutzfahrzeuge der Klasse III sind konstruktiv und durch den fast ausschließlichen Gebrauch von Dieselmotoren eher den echten Nutzfahrzeugen als den Pkw verwandt, deshalb wird für Nutzfahrzeuge der Klasse III ein um 25% höherer Grenzwert von 3,2 mg/km vorgeschlagen.

Verkehrsbedingte Partikel tragen circa 50% zur Feinstaubbelastung bei und sind damit eine wichtige Ursache bei der Überschreitung der von der EU-Kommission festgelegten Grenzwerte. Die EU-Kommission sollte daher die Nutzung aller technischen Möglichkeiten fordern, die zur Einhaltung der Grenzwerte beitragen können. Der vorgeschlagene Grenzwert von 2,5 bzw. 3,2 mg/km entspricht gegenüber dem EURO 4-Grenzwert einer Minderung von 90 % und mehr. Dadurch wäre der Beitrag von neuen Diesel-Pkw und leichten Nutzfahrzeugen mit Dieselantrieb an der Feinstaubbelastung deutlich reduziert.

2. Anforderungen an die Stickoxid-Emissionen

Der NO_x-Grenzwert für Diesel-Pkw sollte auf dem Niveau von Otto-Pkw EURO 4, d.h. auf 80 mg/km festgelegt werden. Der NO₂-Anteil im emittierten Abgas sollte 10 % nicht übersteigen.

Begründung:

Die vorgeschlagene geringe Reduzierung der NO_x-Emissionen um 20% gegenüber Euro 4 entspricht nicht dem Stand der Technik und ist für das Jahr 2010 weniger anspruchsvoll als die bereits heute in Japan (150 mg/km) oder den USA (43 mg/km) geltenden NO_x-Grenzwerte für Diesel-Pkw.

Angesichts der Tatsache, dass zum 1.1.2010 die Luftqualitätsgrenzwerte der Tochterraichtlinie in Kraft treten, sollte die EU alle Möglichkeiten ausschöpfen, um die Einhaltung der Grenzwerte durch technische Emissionsminderungsmaßnahmen, deren Regelung außerhalb der rechtlichen Möglichkeiten von Luftreinhalte- und Aktionsplänen liegen, zu unterstützen.

Denn die hohen Stickoxid-Emissionen von Diesel-Fahrzeugen tragen wesentlich, in Berlin z.B. mit 80%, zu den hohen Stickoxid-Belastungen bei. In Deutschland hat sich der Anteil der Diesel-Pkw an den Neuzulassungen in den letzten Jahren mehr als verdoppelt und inzwischen circa 40% erreicht. Bisher und so auch im vorliegenden Euro 5-Entwurf dürfen Diesel-Fahrzeuge erheblich mehr Stickoxide emittieren als Benzin-Pkw. Mit dem Euro 5-Vorschlag der Kommission wird der Unterschied der Stickoxidemissionen zwischen Benzin und Diesel sogar noch höher als bei Euro 4. Dies und die in der Regel bei Diesel-Fahrzeugen höheren Fahrleistungen führen dazu, dass die Stickoxidbelastung in der Luft nicht im notwendigen Maße sinkt.

Um im Jahr 2010 die von der EU festgelegten Grenzwerte für NO₂ einhalten zu können, sind Minderungen der Stickoxid-Emissionen über das vorgeschlagene Maß hinaus erforderlich.

Die Forderung nach der Festlegung eines NO₂-Anteils im Abgas resultiert aus der Definition der EU-Luftqualitätsgrenzwerte, die allein für NO₂ festgelegt sind, während mit dem Abgas ein Gemisch aus NO und NO₂ emittiert wird. Es besteht damit eine Diskrepanz zwischen den Anforderungen auf der Emissionsseite einerseits und der Außenluft andererseits, die Fehlentwicklungen begünstigt. So hat an den Verkehrsstationen die NO-Konzentration, die für die Beurteilung der Luftqualität nach der Tochterraichtlinie allerdings nicht relevant ist, stark abgenommen. Die Konzentration des für die Beurteilung der Luftqualität jedoch ausschlaggebenden NO₂ sank dagegen nur wenig oder nahm an einigen Stationen sogar zu. Zurückgeführt wird dies auf einen steigenden NO₂-Anteil im Abgas. Messungen an einzelnen Fahrzeugen haben gezeigt, dass bei dieselbetriebene Pkw und leichten Nutzfahrzeuge ab Euro 2 circa 30 bis 60% der Stickoxide als NO₂ emittiert werden, während der Anteil bei älteren Fahrzeugen nur circa 7% beträgt. Unter der Annahme, dass bei einem Diesel-Pkw ab Euro 2 der NO₂-Anteil im Abgas etwa 40% beträgt, emittiert ein Euro 4-Diesel-Pkw im Vergleich

zur einem Euro 1-Diesel-Pkw circa 60% mehr NO_2 , obwohl die NO_x -Emission um mehr als den Faktor 3 gesenkt wurde.

3. Definition der Kohlenwasserstoffe

Der Entwurf führt erstmals unterschiedliche, vom verwendeten Kraftstoff (Benzin, LPG, NG) abhängige Bewertungsansätze für die Kohlenwasserstoffemissionen ein (Artikel 3, Ziffer 5). Der Grenzwert ist dabei für alle Ottomotor-Kraftstoffe konstant.

Dieser Vorschlag ist aus systematischer und fachlicher Sicht zu korrigieren.

Bei Erdgasfahrzeugen werden alle Kohlenwasserstoffemissionen als Methan (CH_4) bewertet, bei LPG-Fahrzeugen als $\text{C}_1\text{H}_{2,525}$ und bei Benzin-Fahrzeugen als $\text{C}_1\text{H}_{1,85}$. Dies führt dazu, dass die Kohlenwasserstoffemissionen von Erdgasfahrzeugen aufgrund der höheren Molmasse um 15% strenger bewertet werden. Dies ist eine nicht gerechtfertigte Benachteiligung der wegen ihrer niedrigen NO_x - und fehlenden Partikelemissionen für die Luftreinhaltung in Ballungsräumen vorteilhaften Erdgasfahrzeuge.

Das Wirkungspotential der sehr unterschiedlichen Kohlenwasserstoffemissionen unterscheidet sich erheblich und rechtfertigt nicht die vorgeschlagene Definition: Im Gegensatz zu Methan weisen die HC-Emissionen von Benzin- und LPG-Fahrzeugen ein erhebliches gesundheitsgefährdendes Potential (insbes. Aromaten) auf. Auch das Ozonbildungspotenzial von Methan ist etwa um den Faktor 300 bis 45.000 geringer als das der anderen Kohlenwasserstoffe. Allerdings ist Methan klimarelevant. Die bisherige Intention der EU-Abgasrichtlinien, die HC-Emissionen insbesondere aus Gründen des Gesundheitsschutzes zu begrenzen, wird damit bei den Anforderungen an Erdgasfahrzeuge verlassen.

Mit der für Erdgasfahrzeuge vorgesehenen Begrenzung der Methan-basierten HC-Emissionen wird somit erstmals eine Grenzwert für klimarelevante Emissionen eingeführt. Dieser an sich begrüßenswerte Schritt sollte jedoch als separate Anforderung möglichst für alle Kraftfahrzeugantriebe ausgewiesen werden und nicht in Zusammenhang mit der Begrenzung gesundheitsgefährdender Emissionen.

Es wird daher vorgeschlagen, die bisher übliche, einheitliche Bewertung der Kohlenwasserstoffe unabhängig vom Kraftstoff beizubehalten. Für den Fall, dass die Kommission diesen Weg nicht gehen will, ist eine Begrenzung der Nicht-Methan-Kohlenwasserstoff-Emissionen vorzusehen.

4. Emissionsgrenzwerte für Kohlenwasserstoffe von Diesel-Fahrzeugen

Der Summengrenzwert $\text{HC} + \text{NO}_x$ für Diesel-Pkw sollte durch die Festlegung eines HC-Grenzwertes von 50 mg/km ersetzt werden.

Begründung:

Für Benzin-Fahrzeuge wurde der Summengrenzwert $\text{HC} + \text{NO}_x$ bereits mit Euro 3 zugunsten getrennter Grenzwerte für HC und NO_x aufgegeben. Dieser Schritt sollte nun auch für Dieselfahrzeuge vollzogen werden, um die Grenzwerte transparenter zu machen. Der vorgeschlagene HC-Grenzwert entspricht der Differenz aus Summenwert $\text{HC} + \text{NO}_x$ und NO_x der Euro 4-Vorschrift und ist damit für Dieselfahrzeuge keine erhöhte Anforderung.

5. Kraftstoffneutrale Grenzwerte

Die Abgasvorschriften waren immer technologieneutral, dieser Grundsatz sollte auch beibehalten werden (also keine Festlegung auf Partikelfilter, Rezirkulation oder weitere Techniken).

Der Grundsatz der Gleichbehandlung sollte auch auf die Kraftstoffart angewendet werden, d.h. für Benzin- bzw. Diesel-Fahrzeuge sollten die gleichen Grenzwerte gelten.

Begründung:

Aus technischer Sicht ist eine Differenzierung nach Kraftstoffen nicht mehr erforderlich, da die kraftstoffspezifischen Nachteile durch Motoroptimierungen und Abgasnachbehandlung weitgehend ausgeglichen werden können.

Eine kraftstoffneutrale Grenzwertsetzung ist zudem transparenter und bürger näher, denn es ist in der Bevölkerung schwer vermittelbar, dass z.B. ein EURO 4-Dieselfahrzeug deutlich höhere Stickoxid-Emissionen erzeugt als ein EURO 3-Benzinfahrzeug.

6. Zusammenfassung der Grenzwert-Vorschläge

VORSCHLAG für Euro 5, einheitlich für Otto und Diesel

| | | | Bezugs- masse (RW) Kg | Grenzwerte | | | | |
|----------------|---------|--------|------------------------------------|--|--|---|---|--------------------------------------|
| | | | | Masse des Kohlenmonoxids (CO) (mg/km) | Masse der Kohlenwasserstoffe (HC) (mg/km) | Masse der Stickoxide (NO _x) (mg/km) | Summe der Massen von Kohlenwasserstoffe + Stickoxide (mg/km) | Partikelmasse (PM) (mg/km) |
| Fahrzeugklasse | | Gruppe | | Benzin Diesel | Benzin Diesel | Benzin Diesel | Benzin Diesel | Diesel Benzin |
| 2010 | Pkw | - | Alle | 1000 | 50 | 80* | entfällt | 2,5 |
| 2010 | Leichte | I | RW≤1305 | 1000 | 50 | 80* | entfällt | 2,5 |
| 2010 | Nfz | II | 1305<RW≤1760 | 1000 | 50 | 80* | entfällt | 2,5 |
| | | III | 1760<RW | 1250 | 63 | 100* | entfällt | 3,2 |

* NO₂-Anteil an den NO_x-Emissionen max. 10%

Anmerkungen:

1. Die vorgeschlagenen Grenzwerte für Kohlenmonoxid werden von allen Fahrzeugarten schon jetzt deutlich unterschritten, sie sind nur eine Anpassung an den Ist-Zustand.
2. Die Grenzwerte für Kohlenwasserstoffe werden von Dieselfahrzeugen schon jetzt eingehalten, optimierte Katalysatoren halten die Grenzwerte auch im Benzinbetrieb ein.
3. Für Stickoxide führt der einheitliche Grenzwert für NO_x zu einer Beibehaltung der Euro 4-Grenzwerte für Benzinfahrzeuge. Dies erscheint jedoch aufgrund ihres eher niedrigen Anteils an den verkehrsbedingten NO_x-Emissionen vertretbar erscheint, wenn dafür eine stärkere Reduzierung bei den Diesel-Fahrzeugen und eine Reduzierung des NO₂-Anteils erreicht wird.
4. Für leichte Nutzfahrzeuge der Klasse III ergeben sich folgende Gesichtspunkte:
Sie sind konstruktiv und durch den fast ausschließlichen Gebrauch von Dieselmotoren eher den echten Nutzfahrzeugen als den Pkw verwandt, deshalb werden für Nutzfahrzeuge der Klasse III um 25% höhere Grenzwerte als für alle anderen Fahrzeuge vorgeschlagen.

Si je me permets de contribuer au débat c'est parce que je pense que l'orientation proposée peut réellement représenter un risque accru pour la santé publique, alors que l'intention est manifestement inverse. Ceci tient à une méconnaissance du potentiel de risque du NO₂ dans les microenvironnements, endroits dans lesquels des quantités de gens très importantes sont exposés à la pollution (trafic urbain, tunnels routiers, rues canyons, ...) sans parler des risques de professionnels exposés à ce risque (conducteurs de bus et de véhicules urbains, policiers, passagers des bus, ...)

A quel titre puis-je parler de la question ? J'ai été appelé à siéger à l'IDRAC (International Diesel Retrofit Advisory Committee) mis en place par le CARB (California Air Resources Board) et j'y ai travaillé pendant deux ans dans un sous-groupe ad hoc sur l'évaluation des risques associés au NO₂ générés par certains systèmes afin d'introduire une mesure du ratio NO₂/NO_x dans le processus de vérification des systèmes pouvant bénéficier d'une aide d'état.

Après avoir recueilli les avis du NIOSH et de la MSHA (risques professionnels) aux USA et du VERT (programme suisse), après avoir consulté les essais réalisés dans différents laboratoires américains, canadiens et suisses sur des moteurs équipés et mettant en oeuvre des cycles de conduite réellement représentatifs de la circulation urbaine, après avoir consulté des archives médicales et après avoir pris connaissance du fait qu'il était constaté une augmentation préoccupante des NO₂ dans le centre ville de Londres, l'IDRAC a confirmé la nécessité de l'orientation prise par le CARB : mise en place d'un maximum d'émissions de NO₂ au 1 janvier 2007 (20% des NO_x).

Au vu de ces connaissances qu'y a-t-il de préoccupant dans les propositions faites pour Euro5?

La faible réduction des NO_x laisse la voie libre aux constructeurs d'utiliser la transformation du NO en NO₂ pour régénérer facilement les filtres à particules (le seul constructeur n'utilisant pas cette approche est aujourd'hui PSA). Nous avons pu mettre en évidence, en Californie, que la voie technologique qui utilise le Pt pour transformer NO en NO₂ avait toujours pour conséquence de faire passer le ratio NO₂/NO_x d'environ 10% à environ 50% (sinon plus) lorsque les émissions sont mesurées sur des cycles de conduite urbaine de bus. C'est à basse température d'échappement que se forment les plus grandes quantités de NO₂ ; à ces températures il est aussi annoncé que les systèmes DeNO_x pouvant être installés en amont (SCR ou NO_x trap) ne seront probablement pas actifs, laissant la totalité des NO₂ partir à l'air libre.

Il semble que les constructeurs insistent sur le coût des mesures DeNO_x pour éviter d'avoir à les mettre en oeuvre. Je pense qu'on peut en effet se demander quel prix on doit mettre pour abaisser encore les NO_x et que la décision doit prendre en compte le coût pour la société européenne de les garder au niveau actuel. Mais dans le cas où, à niveau de NO_x constant, on augmente très nettement la composante NO₂ de ceux-ci, il faut que le coût potentiel de cette augmentation vis-à-vis de la santé publique dans les microenvironnements (où se concentre une forte population) soit évaluée. Il est d'ailleurs surprenant qu'on ait déjà pris en compte la composante N₂O et pas encore la composante NO₂. L'effet de serre serait-il plus important que la santé publique ?

Je suis très satisfait par ailleurs de la volonté affichée d'éliminer les particules les plus fines en introduisant un comptage. Mais j'attends avec impatience de connaître le niveau d'émissions choisi afin d'être sûr que ce comptage permettra de distinguer les vrais filtres des accumulateurs provisoires de PM. Ces pseudo filtres, plus proches du catalyseur d'oxydation diesel, posent aussi un problème indirect sur les NO₂ en relation avec une faible réduction des niveaux de NO_x. Je m'explique : la réduction de 20% des NO_x va permettre un réglage moteur plus favorable en ce qui concerne les émissions de PM, il est alors à craindre qu'un filtre partiel soit suffisant pour atteindre la réduction cumulée de 80% sur les PM. Un filtre partiel avec un catalyseur d'oxydation en aval est la garantie d'émissions maxi de NO₂.

En résumé, je pense qu'il devient urgent d'évaluer l'exposition au NO₂ à laquelle on risque de soumettre les populations résidant ou de passage dans les « hotspots », du fait d'une installation

massive de filtres catalytiques utilisant le NO₂ comme moyen de régénération et de prendre en compte ce risque nouveau dans l'évaluation du rapport coût efficacité.

Dans cette attente, il me semblerait opportun de prendre une mesure conservatoire consistant à interdire l'introduction de systèmes de dépollution augmentant la proportion de NO₂ dans les NO_x. Un ratio de 20% offrirait une marge de manoeuvre aux constructeurs mais il est important que ce ratio soit mesuré sur un cycle de conduite urbaine uniquement assorti de contrôle au hasard sur des points stationnaires qui ne figurent pas dans le cycle et que le NO₂ soit mesuré sur le gaz chaud, en effet tout refroidissement pouvant s'accompagner de condensation d'eau risque de faire passer le NO₂ en phase liquide sous forme d'acide nitrique, celui-ci échappant alors à la mesure.

Je suis bien entendu à votre disposition pour vous faire part des éléments qui amènent ma prise de position.

Automotive Industry
PO Box entr-euro5@cec.eu.int

LTI Vehicles
Holy Head Road
Coventry
CV5 8JJ

6th September 2005

Ref: Draft proposal for euro V emissions limits for passenger cars and light duty vehicles.

LTI (London Taxis International), are writing to raise our 'major concerns' regarding the new proposed Euro V directive. LTI have previously been situated in the light vehicle category N1 due to the weight of the vehicle. With the weight derogation removal this will mean LTI have to strive to achieve not only the extremely stringent Euro V limits set for M1, but within a 2 years shorter lead time than that of the larger OEMs. Even the larger OEMs will be struggling to meet these limits in the time available.

The large OEMs who have 5 years to achieve these ever more stringent limit have been striving to achieve these over Euro II, III and IV. LTI will have an even bigger challenge to meet the limits within 3 years and a larger target moving from N1 to M1 that the bigger vehicle manufactures.

(see table below of the larger target we are challenged to achieve with a heavier vehicle).

| Development period | Euro stage | Mass of carbon monoxide (CO) | Mass of oxides of nitrogen (NOx) | Combined mass of hydrocarbons and oxides of nitrogen (HC+NOx) | Mass of particulates (PM) |
|--------------------|------------|------------------------------|----------------------------------|---|---------------------------|
| 5 years | III | .95 | .78 | .86 | .1 |
| 5 years | IV | .74 | .39 | .46 | .06 |
| 3 years | V | .5 | .2 | .25 | .005 |

To attempt these limits there are various technologies that need to be considered to try and meet the targets proposed.

Exhaust PM limit requires DPF
Fuel injection system 1,800-2000 bar
EGR cooler bypass
Electric EGR valve
VGT, a swirl control and a combustion pressure sensor

These are unknown technologies, many are still in development stages, which are very expensive. These components are application dependant. We as a small manufacturer are dependant on existing systems from the large OEMs which will be difficult to tune/calibrate and package.

LTI vehicles are one of the smaller vehicle manufacturers that welcomed the derogation for the heavier vehicle over the Euro III and Euro IV programmes. We are currently working on Euro IV at the N1 exemption limits, and have a programme introduction date for July 2006. If the 2 years derogation is deleted we will only have 3 years of Euro IV. All large VMs have a 5 year period to redesign for Euro V. As LTI has used the 2 year derogation for Euro IV we will find it almost impossible to redesign and develop another system to meet the large reduction in limit values within 3 years.

Being a small manufacturer we have limited design resource who are currently still working on Euro IV and will not have any resource to start work on this mammoth project for another 18 months (after intro Euro IV plus bedding into manufacturing processes).

In summary LTI would like to emphasis the difficulty and almost impossible task of not only achieving the new limits, but also trying to achieve the M1 category targets within a three year period, the large OEMs have had 5 years and have been constantly within the M1 category to hit these targets through Euro I, II, III and IV. This will have given them a better starting point to achieve these limits. In order to achieve the new Euro V targets LTI are currently developing to meet Euro IV, we will again not know if we can achieve the proposed Euro V limits until we have tried and tested the proposed design for Euro IV. If we cannot achieve these targets with the design, technologies planned for Euro IV, we will only have 3 years to completely redesign which realistically would be a huge challenge for even the biggest vehicle manufacturer.

We also use current systems from the larger vehicle manufacturers. You will appreciate the engine manufacturers who supply LTI on the back of the larger manufacturer, will not allow us to modify their systems. Therefore, we have to find an existing system that will fit our application. We have spoken to engine manufacturers regarding the Euro V emission requirements and at present the proposed systems that will meet the new limit values will give LTI Taxis packaging problems (eg particulate filter). This would mean major investment to redesign and restyle the existing vehicle.

Can you please take the concerns of LTI forward with as much emphasis on the effects of what the proposed Euro V directive will have on a small vehicle manufacturer currently developing a multi million £ project for Euro IV. The design and development of upgrading the software and vehicle for this project will be limiting the resource we have and may become too costly for LTI to continue to produce so soon after the Euro IV intro. The engineering costs for two major introductions within a 3-4 year period combined with the low volume we produce, wouldn't give the business the payback needed to remain in business.

Please keep us informed of the progress.

Comments by the Mezaparks Neighbourhood Association, Riga, Latvia to the Commission's draft proposals for Euro 5

A few years back our family came across a superb European Commission publication for children on the environment "Let me tell you a secret" that in simple terms explains the causes of air, water and soil pollution and what will happen to us and our planet if we don't change the way we do things. Our kids liked the tale so much that we had it translated into Latvian and we published in our local neighbourhood newspaper so that others could also enjoy it. Our local grade school has started using the story as a teaching aid in environmental studies classes and last year the drama club produced a play based on the story. Our school has recently decided to become an Eco-school.

Our youngest boy only builds model cars when he plays with LEGO. His vehicles can do everything the real things do and much more because Jumis has limitless imagination. After reading "Let me tell you a secret" Jumis, just like Tom in the story insisted that when he grows up he will design "the fastest car in the whole universe that does not smell up the air". And I believe he will do it because even now when he tires of driving his existing vehicle or it gets into a terrible accident he simply takes it apart and builds a new and even better one using the same old pieces.

But until Jumis is old enough to do his stuff lets do everything that we can.

The draft proposals for 'Euro 5' emission standards for cars and vans as released by the European Commission in July 2005 are in many respects disappointing. Although their introduction is not foreseen before 2008, they even do not go as far as today's available technology.

Significant tightening of diesel car standards is technically and economically possible and is badly needed in order to:

- protect human health and the environment;
- give Member States the tools to comply with EU air quality regulations.
- overcome the trade-off with between NOX and CO2 emissions (by application of Selective Catalytic Reduction) and hence bring the 120 g/km CO2 emissions target for passenger cars a step closer;
- create a home market for 'clean' diesel cars, which would make it easier for European manufacturers to offer a competitive diesel product on the US market.

More specifically, the following is required:

- at least a 90 reduction of particle emissions from diesel passenger cars to at least 2.5 mg/km, instead of 5 mg/km for passenger cars. Even levels of 2-1 mg/km can be attained and will be measurable with the new 'Particle Measurement Protocol'.

- a 70 per cent reduction of NOX emissions from diesel cars, to 80 instead of 200 mg/km for passenger cars. A strict NOX standard would require application of Selective Catalytic Reduction (SCR), which offers great benefits in terms of fuel consumption and CO2 emissions and is the best solution over the lifetime of the car
- A particle number standard not to be decided upon in comitology, but by Council and Parliament;
- An increase of the in use compliance age to 200,000 rather than the current 100,000 km;
- 2008 as introduction year for the standards to enter into force
- An announcement for a thorough overhaul of the regulatory strategy for emissions control, in particular in use compliance monitoring, now reports of chiptuning and other cycle-beating practices are becoming ever more frequent.



Response to Stakeholder Consultation ***Euro 5 Emission Limits for Light Duty Vehicles***

The ANFIA response

1. Timing

The Commission proposes that the regulation comes into force 18 months after its adoption; this could, depending on the political process, introduce Euro 5 for new type approvals as early as mid 2008. Industry reminds that a 3 year minimum period is required for industrial development and that it has planned along with its supply base to introduce Euro 5 as from 2010 as indicated in the Commission Communication on Incentives early in 2005; earlier pull ahead is not possible.

The proposed regulation is insufficient and should confirm January 2010 or 36 months after entry into force of this Regulation (new types and one year later for all new registrations), whichever is later.

It is imperative that this lead time is maintained following the confirmation of the associated technical requirements (i.e. publication of the complementary comitology Regulation).

A one year extension for Commercial vehicles to 2011, in line with previous legislation, is required to handle the significant workload for the manufacturer and the certification authorities.

2. Compression Ignition Measures

The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x aftertreatment system is not mature enough to comply with levels lower than 200 mg/km.



Euro 5 Emission Limits for Light Duty Vehicles *preliminary draft proposal DG-ENTR*

Response to Stakeholder Consultation

8 September 2005

PROPOSAL ON EURO 5 EMISSION LIMIT VALUES

PASSENGER CARS (M1) – LCV's (N1 - Class 1)

| EMISSIONS (mg/km) | EURO 4 Dir. 98/69 | | EURO 5 ANFIA Position | | EURO 5 EU Proposal | |
|----------------------|----------------------|--------|--------------------------|--------|-----------------------|--------|
| | Petrol | Diesel | Petrol | Diesel | Petrol | Diesel |
| CO | 1000 | 500 | 1000 | 500 | 1000 | 500 |
| HC | 100 | - | <u>100</u> | - | <u>75</u> | - |
| NOx | 80 | 250 | <u>80</u> | 200 | <u>60</u> | 200 |
| HC+NOx | - | 300 | - | 250 | - | 250 |
| PM (1) | - | 25 | - | 5,0 | 5,0 (2) | 5,0 |

(1) A revised measurement procedure shall be adopted once the UN/ECE Particulate Measurement Programme's activities are completed. A PM number standard may be introduced, too.

(2) Petrol particulate mass standards apply only to vehicles which use lean burn direct injection engines

PROPOSAL ON EURO 5 EMISSION LIMITS

| <i>DG-ENTR Proposal</i> | <i>ANFIA Position</i> |
|--|---|
| Diesel emissions: NOx 200 mg/km (-20%) and PM 5 mg/km (-80%) | As the EU proposal |
| Petrol emissions: HC 75 mg/km (-25%) and NOx 60 mg/km (-25%) | No reductions: HC and NOx as Euro 4 (1) |
| For passenger cars (M1) deleted the weight limit of 2,500 kg | Definition of new criteria to exclude from deletion the passenger cars derived from the LCV's (2) |
| Durability: extended to 160.000 km | There is no justification for further regulation in this area (3) |
| Introduction Schedule after entry into force of the Regulation: - 18 months for new Type Approvals; - 36 months for all new Registrations. | Insufficient: - new Type Approvals: 2010 or 36 months after entry into force of the regulation, whichever is later. - new Registrations: 1 year later |
| Introduction schedule for LCV's N1 classes II and III as the passenger cars one | Not acceptable: One year after passenger cars |

PROPOSAL ON EURO 5 EMISSION LIMITS

1. The HC limits reduction for CNG (Compressed natural gas) vehicles or bi-fuel (CNG-petrol) is particularly critical; as a matter of fact, the methane oxidation in the catalytic converter is more difficult respect to the other hydrocarbons. This characteristic makes it not toxic for human health, as already recognized by the American and European legislation on heavy duty vehicles. Moreover, the HC reduction seems not justified according to the CAFE Programme.

In case the reduction of HC limit should be confirmed (Spark Ignition engine), it will be no more possible to produce and put on the market CNG vehicles.

To avoid this situations, it would be necessary to introduce a specific limit for non methane hydrocarbons (NMHC) replacing the total HC (THC) limit, at least for CNG vehicles. This limit should be fixed approximately at 85% of the THC one.

2. The EU proposal is introduced to avoid that specific models (e.g. SUV) could benefit from higher limits regarding the LCV's.
But it's necessary to avoid a penalization for the LCV's (as the Ducato), destined also to the passenger transport.
Therefore a new criteria is suggested to have for the vehicles M1 over 2,500 kg derived from LCV's the same limit as for LCV's themselves.
Example: M1 vehicles, designed and equipped to mount seven seats or more.
3. The extension of duration to 160,000 km determines a heavier burden on the technological solutions, not justified in terms of cost/effectiveness analysis.

ANFIA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance protocol due test measurement and laboratory variability. ANFIA does not believe a new method based on particle number would bring any added benefit.

3. Spark Ignition Measures

The proposal for spark ignition NO_x limit of 60mg/km is a 25% reduction against Euro 4. It is widely acknowledged that spark ignition vehicles are already clean and efficient and further measures are unnecessary. A further reduction is not a cost effective measure to improve air quality. The proposed 25% reduction in hydrocarbons (i.e. HC = 75 mg/km) is also an unnecessary and unjustified extra burden on industry in general and specifically for vehicles equipped with DI and CNG engines.

Lowering total HC emission will impose an unattainable burden to CNG vehicles against the 5% substitution target of the Commission communication on alternative fuels (November 2001). **As a matter of fact, if the HC reduction is confirmed, it will be no more possible to produce and put on the market CNG vehicles.**

The proposal to apply a 5 mg/km Particulate Matter (PM) limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not yet mature and it requires more time to meet such a limit.

4. Heavy M1

The Commission proposes to remove the provision for M1 vehicles over 2500 kg to meet N1 emission limits. For these diesel engined vehicles, to meet passenger car limits, will either require NO_x aftertreatment or, if such technology is not mature, a switch to gasoline engines with an associated negative impact on fuel economy. The majority of these vehicles are designed to have a greater utility and / or off road capability, and this should be part of the requirement.

ANFIA would support limiting the use of this provision to vehicles designed and equipped to mount seven or more seats and/or off road capability. The latter can be defined as per the definitions in the framework Directive.

Motor-caravans and other special purpose vehicles should be included in this provision.

5. Durability/Compliance

ANFIA welcomes the retention of in service emissions testing at 100,000 km or 5 years. The draft proposal extends durability to 160,000 km. A durability demonstration is mentioned, the detail of which is unclear and open to interpretation. There is no justification for further regulation in this area and as such this provision should be deleted.

8 September 2005

Dear sirs,

from our point of view the most important issues are:

STAKEHOLDER CONSULTATION – EURO 5 EMISSION LIMITS FOR LIGHT DUTY VEHICLES .

The three most important points are

- 1) PM limit values needs to be more stringent (at least 2.5 mg/km),**
- 2) NOx limit values need to be much more stringent (80 mg/km)**
- 3) a particle number standard should not be decided by comitology, but by Council and Parliament**

The draft proposals for 'Euro 5' emission standards for cars and vans as released by the European Commission in July 2005 are in many respects disappointing. Although their introduction is not foreseen before 2008, they even do not go as far as today's available technology.

In addition, the lax standards for diesel fail to come a step closer to a global harmonisation of emission standards, a development many stakeholders have called for (at least in theory). The lax standards obviously reduce the possibilities for European manufacturers to compete on the US market.

Significant tightening of diesel car standards is technically and economically possible and is badly needed in order to

- protect human health and the environment;
- give Member States the tools to comply with EU air quality regulations.
- overcome the trade-off with between NOX and CO2 emissions (by application of Selective Catalytic Reduction) and hence bring the 120 g/km CO2 emissions target for passenger cars a step closer;
- create a home market for 'clean' diesel cars, which would make it easier for European manufacturers to offer a competitive diesel product on the US market.

More specifically, the we demand:

- at least a 90 reduction of particle emissions from diesel passenger cars to at least 2.5 mg/km, instead of 5 mg/km for passenger cars. Even levels of 2-1 mg/km can be attained and will be measurable with the new 'Particle Measurement Protocol'.
- a 70 per cent reduction of NOX emissions from diesel cars, to 80 instead of 200 mg/km for passenger cars. A strict NOX standard would require application of Selective Catalytic Reduction (SCR), which offers great benefits in terms of fuel consumption and CO2 emissions and is the best solution over the lifetime of the car
- A particle number standard not to be decided upon in comitology, but by Council and Parliament;
- An increase of the in use compliance age to 200,000 rather than the current 100,000 km;
- 2008 as introduction year for the standards to enter into force
- An announcement for a thorough overhaul of the regulatory strategy for emissions control, in particular in use compliance monitoring, now

reports of chiptuning and other cycle-beating practices are becoming ever more frequent.

OEKOBUERO - Koordinationsstelle österreichischer Umweltorganisationen

Dear Sirs,

As you may know, in some EC countries it is nowadays considered to restrict the in-town traffic to DPF vehicles only. Some automotive sector colleagues and me have wondered many times if these local actions should be accepted by the EC community, taking in account that Article 2a of 70/220/CEE (and modifications) says that:

No Member State may refuse or prohibit the sale or registration, entry into service or use of a vehicle on grounds relating to air pollution by gases from positive-ignition engines of motor vehicles if that vehicle satisfies the requirements set out in Annexes I, II, III, IV, V and VI.

I can read in this new preliminary draft proposal that the particles measurement procedure will be revised, so that the number of particles emitted can be limited.

Taking in account this progress, from my point of view the **Article 6** of the proposal for EURO 5 should take in account that it won't be possible for a State Member to ban the use of a vehicle if it fulfills the requirements of the future Directive. The Article 6 should have the following paragraph:

No Member State may refuse or prohibit the sale or registration, entry into service or use of a vehicle on grounds relating to the emission of atmospheric pollutants, if the vehicle complies with the requirements of this Regulation.

Thanks for your attention. Best regards,

Maurici Sales



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EURO 5 EMISSION LIMITS FOR LIGHT DUTY VEHICLES

STAKEHOLDER CONSULTATION

THE RESPONSE OF THE SOCIETY OF MOTOR MANUFACTURERS AND TRADERS

Introduction

The Society of Motor Manufacturers and Traders (SMMT) is the leading trade association for the UK automotive industry. SMMT provides expert advice and information to members as well as to external organisations. It represents some 600 member companies ranging from vehicle manufacturers, component and material suppliers to power train providers and design engineers. The motor industry is an important sector of the UK economy. It generates a manufacturing turnover approaching £45 billion and supports around 850,000 jobs.

SMMT welcome the opportunity to feed into the European Commission's consultation on Euro V emission standards. However, we would like to note that the very tight deadline for response will unfortunately limit the input SMMT is able to provide.

The automotive industry is committed to contribute to the improvement of air quality and fully recognises the importance of continuing to improve the environmental impact of its products. Emission standards of road vehicles have improved vastly since Euro standards were first introduced in 1993 and they have already helped to achieve considerable reduction in air pollution from cars.

SMMT hope that, in setting new emission targets, the Commission will recognise the difficult balance that exists between achieving improved air quality, reducing CO₂ emissions and delivering cost effective solutions and will take into account the work currently carried out by the CARS21 group to develop coordinated policy measures affecting the automotive industry. The conflicting demands being placed upon the industry are further complicated by the additional issue of car mass and engine power increasing as a result of car safety improvements and customer driven utility enhancements.

SMMT believes that the Euro V proposals should be part of the overarching aim of involving as many stakeholders as possible in the improvement of air quality and should fit into the broader Thematic Strategy on Air Quality, due to be published this autumn. SMMT would like the Commission to take into consideration the effects of the new measures on:

- CO₂
- Cost effectiveness
- Balance needed between petrol and diesel emission limit

Under the draft proposals, diesel cars would be required to reduce emissions of particulates by 80 per cent to five milligrams per km (mg/km) compared to the 25mg/km set under Euro IV rules,



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whilst NO_x emissions would be dropped by 20 per cent. Maximum particulate levels under the latest Euro IV standards are already 90% tougher than they were 15 years ago. The only way to comply with the new proposals would be to fit new diesel and lean burn PDI cars and vans with particulate filters, making them more expensive and leading to increased car prices.

Considering the future, the SMMT note the European Commission intention on particle number measurement. However, the SMMT request that the European Commission declare any other future intentions to regulate engine emissions beyond the measures listed here (such as any intention on future 'Euro' standards), Statements of this nature would clearly assist the SMMT members' planning processes, and should include indications on time frame and limits.

Specific comments

Regarding the detailed proposals offered in the European Commission consultation paper the SMMT would like to make the following comments.

Gasoline limit values

The SMMT is opposed to any further reductions in the NO_x and Hydrocarbons (HC) limit values for gasoline vehicles. The SMMT suggest these reductions would have a minimal impact on European air quality. Secondly, a stand still on Gasoline emissions would allow funding to be directed towards the development of the technologies for tackling diesel emission reduction (PM and NO_x).

Particulate matter emissions

The SMMT believes the proposed limit value for Particulate Matter (PM) is feasible, however, retains concerns regarding the timing of introduction (please see our comments under the heading implementation below) and wish for further clarification regarding any in service requirements attached to this limit

Regarding the stated intention to introduce a particle number standard, the SMMT has several concerns. The SMMT believes the current gravimetric method is sufficient for regulating particulates considering the current method of air quality monitoring (PM₁₀ or PM_{2.5}), as recommended by WHO Europe in the CAFÉ programme. The SMMT calls for the regulation of particle number to be withheld until a measurement protocol including a robust calibration methodology is established. The SMMT would also like to remind regulators that requirement to measure particulate number will significantly increase the burden at vehicle certification testing

Extension of durability requirements

The SMMT has a number of concerns regarding the proposal to increase the durability requirement defined in the Type V test from 80,000 to 160,000km. The real world outcomes of the current in use compliance (IUC) requirement (regulated to 100,000km) are as yet uncertain. Therefore, the SMMT requests that no discussion of further durability extensions should take place until the outcomes of the current IUC regulation are known. Extension of durability



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requirements will significantly increase the resources necessary for development and homologation.

Discontinuation of exemption for heavy cars (more than 2.5t)

The SMMT is strongly opposed to the removal of this exemption. The proposal would regulate a number of vehicle types including Minibuses, Motor-caravans, Multi Purpose Vehicles, and Dual Purpose Vehicles, to the emission standards for light passenger cars, although many of these vehicles are derived from light commercial vehicles. For these types of vehicles to achieve the emission standards proposed in the preliminary draft, especially diesel NOx 0.2 g/km, radical and expensive measures would be needed. For example, this regulation may force a switch to gasoline engines in this category undoing progress in fuel consumption reduction or alternatively sophisticated diesel NOx catalysts may be needed, which are as yet an unproven technology. Finally due to the current Euro 4 implementation dates M1 vehicles over 2.5t would be doubly penalised as the regulatory interval of Euro 4 for this class could be as short as 2 years (see section headed implementation below).

The SMMT request that the differentiation of limit values between light and heavy cars over 2.5t is kept. But, the SMMT accept some qualification could be added to maintain progress and avoid the impacts discussed above. The SMMT propose that M1 vehicles over 2.5t GVW should also either fulfil the EU framework directive definition of an off road vehicle (M1g – Section 4 Annex II 70/156/EEC), or be designed to mount 7 or more seats (including the driver), or fulfil the EU framework directive definition of Motor-caravan (SA - Section 5.1 Annex IIa 70/156/EEC).

Implementation proposal, 18 months for new types and 36 months for all types after publication in the Official Journal.

The Commission proposal for a lead time of 18/36 months after entry into force for homologations / registrations respectively gives a number of major concerns to the SMMT.

This proposed pull ahead of Stage V could supply dates as early as June 2008 (homologations) / January 2010 (registrations). Since the application of Stage III in 2000, automobile manufacturers have focussed on implementing programme plans for Stage V emissions development and certification reliant on a start date of 2010 as indicated by the Commission (Stage V questionnaire etc). The lead time of a new product is about 7 years and a new emissions engine development is approximately 38-45 months. In many cases SMMT member companies have timed their product life cycles to correspond with the introduction of Euro V in 2010. As we stand in mid 2005, SMMT members are already out of time for scheduling Stage V engine emissions programmes for application from June 2008.

The SMMT are strongly in favour of a 'fixed' implementation date, and request that Stage V timing should be set at 2010 or 24/36 months (homologation/registration) whichever is the later. This is fundamental for mid and long term development schedules of technologies and products. Alternatively if there must be a 'non fixed' the SMMT suggest the timing needs to be extended to recognise lead time and resource constraints to 36/48 months after entry into force.



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The compaction of timings for light duty commercial (N1 class) vehicles to be concurrent with passenger cars will cause problems. The SMMT believes a drastic pull ahead of timings in this relatively low volume sector would have an unjustifiably severe impact, where the theoretical air quality benefits would not be detectable even if specific CAFÉ air quality model runs were set up to examine this detail. SMMT members have been working to a proposed Stage V introduction at 2011/2012 as previously indicated by the Commission. The draft proposals could result in a 3 – 4 year pull ahead, which may necessitate temporary withdrawal from the market of some diesel engine products. Petrol engine alternatives may be offered with a corresponding negative impact on CO₂ emissions.

The SMMT request an implementation date for N1 (and M1 applying N1 limits) 1 year later than the date M1. This would avoid an overload in the development, homologation and preparation of products.

The concentration of all SMMT member company applications for approval into such a short time frame will result in considerable workload for manufacturers and type approval authorities. This increased workload could result in delays in granting formal approvals, or even result in a failure to certify all products in time. Where approvals are made under such time pressure unintended consequences may result. Approvals could become less robust, where the authorities are forced to take on a high number of short term contractors to cover a very cyclical work load.

Further information

The SMMT would be happy to give further information regarding the content of this paper, and can be contacted at the following details.

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Utrecht, 9 September 2005
our reference: KB/mhw/050909.145

subject: draft proposals for Euro 5

Dear Mr Schulte-Braucks,

Air quality is one of the key environmental challenges facing Europe. In The Netherlands alone, as many as 18.000 people die prematurely each year because of air pollution (RIVM, 2005). Additionally, some tens of thousands are hospitalised because of high levels of air pollution. Besides health effects and subsequent high costs (more than 5 billion Euro yearly for The Netherlands alone¹), high levels of pollution also cause many economic and spatial planning problems.

We therefore ask the European Commission to take its responsibility to protect public health more seriously and to propose emission norms that effectively reduce the particulate, nitrogen dioxide and other emissions of cars.

High levels of Particle Matter are the most prominent problem, but the standards for Nitrogen dioxide for 2010 will not be met either. In order to comply with the air quality standards, the Dutch government needs to implement an ambitious air quality programme.

More stringent euro standards are absolutely necessary. In light of the seriousness of the problem, the draft proposals for 'Euro 5' emission standards for cars and vans, as released by the European Commission in July 2005, are disappointing. The proposals fail to even reflect what is currently technically feasible and available. The proposed standards will therefore permit an entire generation of cars to produce unnecessarily high levels of pollution and health effects during their entire lifespan (13 years or more). Furthermore, the entry date is of the utmost importance. The current proposal creates the risk of delay well beyond 2008.

In light of the health hazards and the obligation of the European Commission to protect public health, these proposals are inadequate and unacceptable. We call upon the Commission to adjust the proposal in the following ways:

- 1 January 2007 should be the latest date of entry for new models (1 January 2008; new and existing models). This leaves industry with enough time to comply, but prevents years of unnecessary pollution.
- Aim for 90 rather than 80 per cent reduction of particle emissions from diesel cars. And a maximum of 2.5 (or rather lower) instead of 5 mg/km.
- Aim for 70 rather than 20 per cent reduction of NO_x emissions from diesel cars - to 75 instead of 200 mg/km.
- Present an outlook for an ambitious 'Euro 6' standard in order to stimulate car manufacturers to make the necessary investments.

¹ New estimations even suggest 18 billion Euro each year.



- Aim for 75 rather than 25 per cent reduction of NO_x and HC emissions from petrol cars. Such a reduction is in line with US and California standards and is technically feasible.
- A further tightening of the particle standard for direct injection petrol engines, in line with diesel.
- An announcement for reassessment of the strategy for determining and controlling vehicle emissions because of the increasing differences between the emissions measured during tests and actual performance.
- A particle number standard to be decided upon by Council and Parliament instead of via comitology (or at least a prospect for a 'Euro 6' standard in which this issue will be dealt with too);

For a more detailed reaction as well as additional background information, please see the position paper drawn up by our European partner organisation, Transport and Environment (T&E).

Milieudefensie

Stichting Natuur en Milieu



SWEDISH ENVIRONMENTAL PROTECTION AGENCY

Transport and Energy Section

DATE

9 September 2005

REF. No.

126-4466-05 Ht

EUROPEAN COMMISSION

**Directorate General for Enterprise
Automotive Unit**

B-1049 BRUSSELS

E-mailed to: entr-euro5@cec.eu.int

In-Put from Swedish Environmental Protection Agency on Stakeholder Consultation on EURO 5 EMISSION LIMITS

ref.: Commission web-site

The Swedish EPA wishes to express its gratitude to the European Commission for having been given the opportunity to respond to the stakeholder consultation on the draft proposal for EURO5 emission limits for light-duty motor vehicles. We look forward to a proposal for a Directive in the near future.

The Swedish EPA is responsible for Swedish participation in the Commission work on motor vehicle emission regulations. We have a number of suggestions for improving the draft proposal from the Commission, based on environmental needs. Attached please find our contribution. However, as soon as we have gained access to further documents on EURO5 and CAFE, we anticipate that there will be reasons for filing additional inputs. We would be willing to discuss the appended proposals and are prepared to supply additional briefing.

Annexes

1. Stakeholder Input on EURO5 from Swedish EPA
2. Annex II to the Input to the 2004 Technology Questionnaire (reissued)

Copies of this document

- Ministry for Sustainable Development
- Ministry of Industry, Employment and Communication
- National Road Administration

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Number of pages 1

MEMORANDUM Annex I to Ref. No.

Date 126-4466-05 Ht

9 September 2005

Stakeholder In-Put on EURO5 from Swedish EPA

Elements for Enhanced European Light Vehicle Emission Legislation

Overview

Swedish Environmental Protection Agency would argue for several improvements to *EURO5*, as pointed out in the table. Solid environment needs guide our priorities. There is no absolute order on our top ten list.

Table 1. Improved emission requirements. Swedish priorities.

| No | Regulation elements | Contents | Reason, Feasibility | Rationale |
|-------------------------|---------------------------------------|---|--|---|
| 1 | Emission limits for petrol/SI engines | <ul style="list-style-type: none"> • More stringent NO_x-limit; • Same limits for all light petrol vehicles • Particulate limits • Possible in stages (EURO6...). | <ul style="list-style-type: none"> • technical adaptation • cost effective measures | <ul style="list-style-type: none"> • lower NO_x |
| 2 | Emission limits for diesel/CI engines | <ul style="list-style-type: none"> • Number-count method and limit; • More stringent NO_x-limit; • More stringent particulate limit; • Same limit for all categories; • Possible in stages (EURO6...). | <ul style="list-style-type: none"> • technical adaptation • drive for new technology | <ul style="list-style-type: none"> • lower NO_x • lower PM • allow push for lower CO₂ |
| 3 | Biofuel fuelled vehicle requirements | <ul style="list-style-type: none"> • Any engine and fuel use should be under the same mandatory requirement. | <ul style="list-style-type: none"> • technical adaptation | <ul style="list-style-type: none"> • biofuel push |
| 4 | Cold test limits | <ul style="list-style-type: none"> • Stringent HC and CO limits. | <ul style="list-style-type: none"> • general compliance | <ul style="list-style-type: none"> • better health |
| 5 | Evaporative emissions limits | <ul style="list-style-type: none"> • Stringent limit and/or longer duration of test. | <ul style="list-style-type: none"> • in use (US) | <ul style="list-style-type: none"> • less ozone • better health |
| 6 | In-Use Conformity test procedure | <ul style="list-style-type: none"> • Improve provisions; test procedure and enforcement. | <ul style="list-style-type: none"> • improve enforcement | <ul style="list-style-type: none"> • lower all emissions |
| 7 | On-Board Diagnostics | <ul style="list-style-type: none"> • Improve, closer tolerances, include evap. control system | <ul style="list-style-type: none"> • adaptation • better R/W | <ul style="list-style-type: none"> • lower all emissions |
| Potential topics | | | | |
| 8 | Crankcase ventilation | <ul style="list-style-type: none"> • Better test procedure. | <ul style="list-style-type: none"> • techn. revisit • enforcement | <ul style="list-style-type: none"> • better health |
| 9 | Roadworthiness test information | <ul style="list-style-type: none"> • Revise requirements for R/W tests. Link to Road Worthiness Directives! | <ul style="list-style-type: none"> • adaptation • better R/W | <ul style="list-style-type: none"> • lower HC, NO_x, PM |
| 10 | Further work | <ul style="list-style-type: none"> • New test concept: include off cycle. • Cover more alternative fuels. | <ul style="list-style-type: none"> • better rules | <ul style="list-style-type: none"> • lower all emissions |

Our input is centred on what we feel should be added or changed in the Commission stakeholder consultation proposal. Good proposals are accepted and not further discussed at the present time in this text! The only thing we do is to list them. The issues summarized in Table 1 are further explained in the following sections. Environmental reasons for doing more in terms of technical requirements, are summarized in the section "Environmental Rationale". Elements of possible enhancement of the requirements are briefed in the section "Suggestions for Further Enhancement of the Requirements...". Table 2 specifies certain more defined proposals.

This Document

Swedish EPA is responsible for the Swedish participation in the European Commission work on motor vehicle emission regulations. The agency is hereby responding to the [invitation](#) for comments the Commission sent out to stakeholder, as a draft proposal for EURO5 done at 14 July 2005, with deadline for responding at 9 September 2005.

This document points out the main priorities the Swedish EPA have for new European emission requirements for light vehicles, as summarized by the cover table. In addition, Sweden will of course take active part in ensuing discussions, flesh out our proposals, and respond to initiative by others to further improve the proposals before reaching agreement.

Earlier in-puts to the EURO5 discussion from us are already available on the commission website:

(http://www.europa.eu.int/comm/enterprise/automotive/mveg_meetings/subgroup_euro/meeting1/index.htm,
http://www.europa.eu.int/comm/enterprise/automotive/mveg_meetings/subgroup_euro/meeting2/index.htm,
http://www.europa.eu.int/comm/enterprise/automotive/mveg_meetings/subgroup_euro/meeting3/index.htm) and answering the Questionnaire in April 2004 (re-appended to this text). A related document was also presented at the CARS 21 hearing in April 2005 (http://www.europa.eu.int/comm/enterprise/automotive/pagesbackground/competitiveness/stakeholder_consultation/contributions.htm).

Data Documentation, Proposals and Rationales

Supporting data, proposals and arguments for going the suggested way with the requirements, are presented in this document in brief. The main points, as brought up in the Table 1 overview, are expanded in following sections.

Some data on emission effects, feasibility and costing etc. have been sent in from Swedish EPA, among other delegations and stakeholders, as a

response to the Technical Questionnaire supplied earlier by the Commission. The Swedish response, dated 29 April 2004, is drawn on also for our current documentation.

However, some pieces of important information are not available at this time. Lacking them we have not been able to do as good a job with these comments as we could have done. One of these lacking pieces is the amalgamation of all those bits of information the Commission received on the Technical Questionnaire last year. We would expect that report, when ultimately published, to both support our proposals and perhaps others as well. The report may cause us to re-intervene on the present subject.

Environmental Rationale

Environmental Argument for Particle Control

It follows from recent analysis made, for example as part of the WHO and Commission CAFE exercise that particle concentration needs to be further reduced. Studies indicate that small particles may have a particular health implication. Particulates emitted from motor vehicles, in particular those equipped with diesel engines, constitute a considerable portion of the particles. These particles are all in the nanometre range, from a few to up to some hundreds of nanometre in diameter.

Also for Sweden the estimated impact on health of the particles in ambient air is considerable. If the air quality standards are lowered further, compliance has to be assisted by a range of measures. Among other actions, this calls for lower motor vehicle particulate emissions, together with tire and road surface wear.

Environmental Arguments for NO_x and HC Control

Main problem with NO_x-emissions is eutrophication. Sweden visions the particular grave problems in the Baltic Sea. Acidification is another problem.

High concentrations of NO_x and hydrocarbons at hot and sunny weather conditions lead to high ozone levels. Recent incidents have lead to an acute increase of deaths. Background levels tend to go up, also affecting regions not subjects to the peak levels, for example Sweden.

Not the least in wintertime the emission of partially burnt fuel, causing emissions of PAH and other organic substances with health implication is a particular problem.

Climate Change

Motor vehicles are behind a fairly large share of emissions causing climate change, mainly as carbon dioxide. Although not directly addressed by the emission rules some important indirect measures should be considered. To assist other measures, among them the commitment by the manufacturing industry to control CO₂ from new cars, the number of new vehicles with capabilities to run on renewable fuels should be increased. A larger share of diesel may also be instrumental in somewhat lowering the consumption of fossil fuel. But for suggesting an increase of diesels, they need further cleaning as proposed in this document. To get the fuller effect, other measures should preferably be employed to encourage the use of small efficient diesel vehicles.

Commission Proposals that are Acceptable and Welcome

Listing Supported Proposals

We would favour the adaptation of the topics in the Commission draft proposal that are listed in the following table.

*Table 2. Acceptable Proposal elements for EURO5.
Summary of Commission draft proposal
regarded as acceptable.*

| Regulation item | Acceptable Suggestion | Comment |
|---|---|---|
| Emission limits for petrol/SI engines | HC tail-pipe limit | See a reserve for biogas. Cf. evap. control |
| Emission limits for all light vehicles | same particulate limit for all | ALL |
| Scraped large car derogation | All cars to be subject to same requirements, even above 2.500 kg. | |
| Two aspects of durability | Durability kilometre ranges for type approval and in-use | To be worked out for the annexes. Go for 8 years! |
| Hybrids | Including the particular test method. | |
| Sanctions | Art. 11 requires MS to legislate manufacturer penalties | |
| Procedure | Split level approach | Mandate for committee |

We will further examine the implications with Regulation rather than a Directive. In addition to this list the Swedish EPA has a number of suggestions. These are detailed in the next section.

Suggestions for Further Enhancement of the Technical Requirements: These Measures are Required!

Cost Effectiveness of Measures

The CAFE/EURO5&6 exercise does not end with EURO5 for cars and light trucks. It is rather the beginning. We are also into contemplating refinements to EURO 4/5-rules for heavy duty vehicles and for new EURO6 rules for heavy vehicles. Also measures on other sectors are involved. Therefore it is not possible at this point to be particularly precise with proposals on EURO5, because measures should be taken where they give most and are most cost-effective. For that the whole catalogue of possible measure should be explored. This means also that it would be premature to cut the list of possible measures on light vehicles short at this point in time.

Emission Limit Values for a Vehicle with SI Engine: NO_x

Proposal

- Go down from current EURO4 limit value of 0,08 g/km to 0,04 g/km.

Rationale

Further reductions are needed from an environmental standpoint and we know that further refinement of emission controls for petrol fuelled vehicles is comparatively cost effective. State-of the art of today's modern productions concepts are far below current limit (0,15 g/km) and many reach below our suggested 0,04 g/km.

Commission was using 0,024 g/km and 0,048 g/km in the still non-published technical regulation analysis document. Of course such values may also be discussed.

Emission Limit Values for a Vehicle with CI Engine: NO_x

Proposal

- Go down from current EURO4 NO_x-limit of 0,25 g/km to a new limit well below the proposal (0,20 g/km).

Rationale

Diesels need to take the crucial step towards cleaner NO_x-emissions, considering what can be achieved by the application of aftertreatment of NO_x-emissions. Failing to do so, diesels can hardly be branded as "environmental cars", which would stand in the way for taking advantage of their CO₂-benefit. However, due to lack of progress in development, stringent limits would be rather far fetched.

At the same time, it is important to use the occasion of this EURO5-discussion to address NO_x-emissions from diesels even if there is not a

clear ready-made alternative for controlling them. The consultation document talks about a new limit at 0,20 g/km (200 mg/km), going down from 0,25 g/km. That proposal does not represent any new technology and is too weak to push for development of aftertreatment technology. Many diesel models already meet 200 mg/km. Even within the confines of currently employed emission control technology, the emission limits may well be made more stringent. Perhaps at 150 mg/km. But we should not stop there. In the technical questionnaire prepared by the Commission, which was out last year, a range of scenarios were studied. A limit value level of 75 mg/km was regarded as representing a technology break, giving aftertreatment with some kind of catalytic limitation of NO_x emissions. Such technologies are emerging, expected to reaching a more mature status within only some years. Without being on absolute certain grounds at this point in time to perhaps be able to set proper emission limits for NO_x for that stage, the option of basing them on the application of aftertreatment technology should be further explored in the EURO5 exercise. One important piece of information, the technical feasibility analysis performed by the Commission still remains to be examined. If, in further EURO5 discussions, strong voices are raised against more stringent NO_x limits, the timing of the introduction of them may be discussed rather than the stringency itself. Again, in the end, to go for such limits will be measured against the overarching yard-stick of cost effectiveness. It is vital to at this time decide on a fairly stringent NO_x limit (although not as stringent as for petrol-fuelled cars). If necessary, perhaps setting also a EURO6 limit.

This is one of the most important elements of the EURO5 package for Sweden, and we will further explore the possibility, and timeliness, of further interventions, perhaps with a more firmly defined proposal.

Emission Limit Values for a Vehicle with CI Engine and SI Engines: Particulates

Proposal

Two proposals intended to be taken simultaneously:

- further reduction from current EURO4 limit of 25 mg/km. Consider for mass: 2,5 mg/km and 1,0 mg/km, in steps, and
- introduction of a limit value on number-count (PMP) with a limit at 10¹¹ particles/km. The improvements to the mass-based measurement method that has been investigated and proven by the PMP program, and others, should be included into the new regulations.

Option: launch the new limits in stages: EURO5: a number count limit and 2,5 mg/km and EURO6: 1,0 mg/km, the latter including measurement method improvements.

Rationale

Current market technology is keeping well below 5 mg/km, which is allowed by the preliminary rules to be used against national incentive systems from now on. In fact, well designed particulate filter systems are at a 0,5 mg/km level. That has been documented for series production for at least the last 5 years. Petrol fuelled vehicles are also below 1 mg/km.

In fact, there is a risk with too lenient rules in relation to technology performance. Staying with a less stringent particulate limit, say 5 mg/km, may risk a dead-end route with developing less effective - and cheaper - particulate filters.

At these levels also petrol fuelled engines should be covered by the particulate limit value. This is particularly motivated for alternative-fuelled engines and petrol direct injection engines. For diesel and petrol light trucks some further margins could be considered if it is found to be technically necessary, while holding on to the filter efficiency level, thus the meaning of the requirements.

The currently used mass-based particulate measurement procedure is old and lacks in precision. However, recent years have seen some encouraging developments, both in the USA and by the Particulate Measurement Programme (PMP) in the EU (with Switzerland and Japan). These improvements will raise the precision of the measurements. These amendments should be introduced into the requirements. While doing so, it should be taken care to adjust the limit value in accordance with the differences the changes to the method may produce.

But still, the method will have its short-comings. Higher precision has been demonstrated for the newly developed particulate number count method, also by the PMP project. That would also add information and enhance the linkage between emissions and health effects of particulates. The number count method has been shown to better distinguish particulate emissions from different diesel engines and emission control concepts, e.g., different filter designs.

To lastingly make certain that proper designed particulate filters are used, the number count method is needed, with a proper limit value. We have suggested 10^{11} particulates per km. The number count method will be finally validated by the end of 2005. The procedure is then ready for inclusion into the rules. Further discussion will give adequate limits also for petrol engines.

Biofuel fueled Vehicle Type Approval Rules*Proposal*

Alternative fuelled vehicle should comply with the emission requirements. To do so we would argue for the amendment of the requirements accordingly:

- Draft and propose new regulation elements for covering all alternatives with emission rules.
- Allow for an increase of the allowed oxygen content margin in reference fuels to 10% and introduce provisions for stating that the emission control system design is capable to work with such a fuel.

Sweden intend to supply additional in-puts on these issue, e.g., with draft regulation texts.

Biogas fuelled vehicles should not be blocked out by the application of a more stringent hydrocarbon limit value.

Rationale

Measures to facilitate the control of further increase of climate change are gravely needed. In the technical emission requirements a range of measures may be employed for that purpose.

At least in Sweden the number of alternate fuelled vehicles and vehicles with capabilities for running on alternative fuels is steadily growing. Most popular are ethanol fuelled cars, with biogas fuelling coming next. These alternative fuelled vehicles are branded “environmental cars”, and allow for lower taxation and free parking, etc. This promotion of renewable fuels has been motivated by environmental reasons (climate gases). But for none of these options, cars are currently under emission requirements when driven on the alternative fuel. It is a strange situation to have “environmental cars” which are not covered with emission type approvals.

Sweden has demanded the Commission to take steps for allowing a higher percentage alcohol blending to petrol, up to 10 % ethanol. For this the market fuel specification in Directive 98/70/EEC should also be amended. And following that change, also the reference fuel in the emission directive, with other changes along that.

A potential concern may however emerge with a possible introduction of a more stringent hydrocarbon limit value. The Commission proposes 75 mg/km. The feasibility of biogas fuel and emission cleaning technology at such a level should be further examined and understood. New rules should not make such technologies impossible. It is important for Sweden that biogas usage is allowed to flourish. An option may be to just

regulate non-methane hydrocarbons for this particular application, thus only valid for biogas-fuelled concepts.

Cold Test Limits

Proposal

- The limit values should be amended to 0,9 g/km for HC and to 6,5 g/km for CO. Current limits are 1,8 and 15 respectively.

Rationale

Technically emissions should normally go down parallel with full test requirements getting more stringent. Technologies are available to reach low with the rules, as demonstrated with our data, see our Questionnaire response. Two different messages come out from our documentation, quite reverse: on the one hand data show that already available and used technology, EURO4, is capable of reaching well below current limits. On the other hand certain testing suggests that other model have so high emission that they may hide a technical failure. Our data both suggest that limit may be revised downwards, and making the case for including the under the in-use compliance rules.

When controlling emission further, it should not be ruled out that emissions at even colder temperatures may play a more notable role, perhaps also cold emissions from diesels. These non-regulated modes should be investigated for the possible application of controlling measures.

Evaporative Emission Limits: Hydrocarbons from SI Engines

Proposal

- Extend evaporative control by going from one to three day and night, and/or from 2,0 to 0,5 g/km.

Rationale

Technology allows for further control of hot temperature evaporation of hydrocarbons from petrol vehicles. Above all this may give further control of the largest quantity of evaporative emission – those emitted from a sitting vehicle driven by day-and-night variation of ambient temperature. This relates mainly to ozone formation and health concerns.

Further control of evaporative emissions would potentially give more benefits to the environment compared to getting further down with the hydrocarbon tail-pipe emissions. Of course, to take any one of these or both measures should not be ruled out. Many vehicle models are designed for lower HC emission levels, due to more demanding limits on other markets. This goes for evaporative emissions too.

As is shown by attached piece from our Technology Questionnaire response from last year, including a second and even a third diurnal cycle into the requirements should represent a significant reduction of in-use evaporative emissions. Inventory, however limited, has indicated that maybe as much as a half of the car-fleet is sitting idle for more than two consecutive days and nights, over weekend. That may mean 50 times a year and at least in the warmer part of the year giving a fairly substantial contribution to overall hydrocarbon emissions.

In-Use Conformity Method Improvements

Proposal

- Elaborate precisions to the in-use test method: encourage voluntary recalls, coordinate dealings between type approval authorities, exchange reports, data, and decisions.
- Revise criteria for fault/fail.
- Include evaporative emission and cold temperature emissions.

These IUC topics will be further argued for in a couple of separate instalments, later this autumn.

Background

Based on experience from applying the In-Use Conformity (IUC) test method that came in Directive 98/69/EC, some improvements should be considered. The Commission has got the task to do so, based on the footnote (*) in the revision Directive 2002/80 (page L291/30).

Also here data are available already in the Swedish Questionnaire response, see the attachment, but may get further updated.

Rationale

The IUC method has been used for some years now and based on our experience applying the rules we believe they should be further improved. They should benefit from being further strengthened to enhance the enforcement capability. Faults should amended on in-use vehicles in a more general way than under current rules.

Improvements should involve making the rules more solid in these aspects:

- voluntary recalls to be done by manufacturers, by further encouragements in the rules;
- general reporting of warranty claims by manufacturers to the authorities;
- consider setting up emission warranty rules either in common EU-directives or nationally;

- coordination between member states and type approval authorities on manufacturers in-house in-use testing reports, warranty reports, reports on in-use testing by member states, voluntary recalls, instituted recalls, etc.;
- consider the Commission to take a more active role in coordinating day-to-day enforcement activities in member states.

Again, judging from our own tests we find faults far ahead of reaching a failure according to the stage 2 so called statistical table of acceptance (under item 5 in Annex I, Appendix 4 to Directive 98/69/EC). Even though we have found a fair number of faulty models we have never being able to formally fail any model using that table. So based on real experience that table should be amended or perhaps deleted from the directive.

Currently, the in-use provisions only focus tail-pipe emissions at the full warm test. Not the least Swedish experience gives reasons for including evaporative emissions. Our authority-run in-use surveillance program has revealed a number of problem cases with very high emissions. As a principle all requirement elements should also be covered by in-use compliance. Thus, also cold temperature emissions should be tested. The fear from the beginning that certain regulation element should not be easily applicable for in-use vehicle has not been verified. On the contrary, in-use emission measurements on ordinary vehicles on loan from ordinary owners are done of a regular basis with good reproducibility, e.g., evaporative emission measurements.

In the consultation document the commission talks about Sanctions for non-compliance (Article 11). This demands MS to set up national provisions on sanctions for breaking the emission rules. Sweden has, as the only MS, warranty provisions. In addition, Sweden has experience from applying recall regulations before joining the EU. Such regulation frame-work is an important improvement to the rules and should be supported. But it is important that the basic principles and national sanctions provisions get solid basis in the common requirements. The main reasons for applying sanctions would be to encourage better compliance with the emissions provisions. Sanctions should act as deterrent. So, even with sanctions provisions, further rules on reporting, warranty and recall have to be drafted and included into the rules. Therefore the Article 11 provisions suggested in the consultation document has to be supported with procedures and rules, perhaps in annexes dealing with in-use compliance. Such provisions should give precise rules when there is a case which may cause penalties be taken up. Element for such provisions are the ones we are proposing for improving the IUC rules.

Swedish EPA may separately supply further in-puts, giving further rationale, and suggest amendment proposals on the IUC items mentioned in this section.

On Light Trucks

The assumption has been throughout this document that limits and other requirements are for cars and in principle applicable to all light vehicles, including light duty truck and small buses. That would be generally our assumption, but there may be necessary with some modifications. However, the classification of light trucks into three classes based on test weight should in such a case preferably be amended to better reflect the size-range of car derivatives and to the typical size of chassis based light trucks – i.e., the upper end of the size-range.

Other Regulation Elements

We believe that a number of additional requirement elements should be addressed in this review or starting right away from activity.

Owner's responsibility. The sanctions Article (art 11) may also include a responsibility for the owner. He/she should, along with the manufacturer, bear its part of the responsibility to keep the vehicle in good conditions and to use only the appropriate means for keeping it in motion. This may not the least be an anti-tampering measure (see next paragraph). Of course, some rules have to be added in order to make the sanction requirement useful.

OBD up-to-date. A new generation of OBD should be maturing; upgrading current technology with more stringent thresholds is crucial alongside the review of the emission limits, in order to get the OBD to be a more effective a tool for failure diagnostics and possibly enforcement. Current OBD does neither cover evaporative emission control system, nor cold emission controls. That should be changed. Additionally, it is a challenge to address the high rate of tampering, not the least on diesel cars as has been revealed by Denmark. Perhaps a provision on more demanding owner responsibility may assist trying to come to terms with that difficult problem.

New test concept. It is now perhaps already overdue to initiate a project for revising the driving cycle for emission testing and type approval. It would be a huge task and take long a time to perform. And would it be the right thing to do? Clearly, the test procedure is unrepresentative in many ways for actual driving, and it is consequently understating “real” emissions. But more importantly, it means also that it does not present a sufficient challenge for designers of the emission control system. The test procedures were developed in an era when computers were not used in

vehicles. Today when they are used for controlling many parameters in the vehicle the situation is very different. Looking for a revision of test procedures is perfectly legitimate, but perhaps a better route would be to review the whole test concept. That would take as a basis the use of computers in engine management. Taking all into account the scope for such an overview may be wider, with a random test cycles coupled with an emission cap instead of a limit value. The driving modes would then include varying temperature and possibly other parameters, such as steep slopes, wind, etc. Whatever driving modes used (within certain defined margins), emissions should meet the cap.

Swedish EPA may volunteer to further elaborate such a test concept.

Road worthiness testing. The basic requirements at road worthiness test have to be laid down in the type approval directive. Here is a huge empty space to fill with improved test method and requirements. Not the least OBD features should be employed

Crankcase ventilation. Current rules are from the 1960:ies. Much have happened to technology. But the follow-up of current technology performance may be more vigilant (for example any connection with all these oil spills on all our parking places?), and still no extension of the requirements to turbo-diesels. The viability for containing crankcase fumes etc. from diesels should be re-examined. A separate concern is the test procedure itself, for one thing because enforcement or the requirements may be improved with more appropriate methods.

Depending on further documentation and/or reasons to bring forward a certain item or not at this point in time.

When the New Rules Shall Apply

EURO5 should be introduced around 2008, with certain more stringent requirements and elaborated regulation elements possible to introduce later ("EURO6"), perhaps by 2010.

On the Process

As the Commission intend a "split level approach" for enacting the amendments it is foreseen that a two-stage procedure will take place. The previous experience with split-level approach show that there is plenty of time available to get the details right, such as all the procedures in the annexes. The "only" thing in the first phase is to cover all the things that should be done with proper mandate in the "political" part of the directive, which is to be decided by the Parliament and Council.

We believe this reason that the Commission preparation of the proposal should focus on getting a solid compromise on the basic amendment

elements, and leaving the details for special expert deliberations. The amendments package seems to be fairly large. Thus a cumbersome expert endeavour would be expected, which would call for an early start of a sub-group for carrying out the talks. Another reason is timing. Even is split-level approach may help shorten the time it takes from here to a final print-out of the new regulation, the only example we so far have shows that not to be self-evident. Still at this time, in the autumn of 2005, the amendment and recast of Directive 88/77 have not been published, although deliberations started more than two years ago (proposal COM (2003)522 of 5 September 2003).

Sweden would of course volunteer to join such a sub-group for drafting amendments to the directive annexes. The timing is in itself one of our priorities. After already having exhausted the possibilities of the current rules there is an apparent urgent need for new regulations.

Summary: Our proposals

As suggested in the Overview, Swedish EPA considers for inclusion into the requirements several items. These are not found in the consultation document.

Table 3. Proposals for EURO5. Summary of Swedish EPA proposals.

| Regulation elements | Suggestion | Limits, etc | Comment |
|---|--|--|-----------------------------------|
| Limits Suggestions | | | |
| Emission limits for petrol/SI engines | • NO _x -limit | 0,04 g/km | |
| Emission limits for all light vehicles | • Particulate limit | 10 ¹¹ PM/km 2,5 mg/km 1,0 mg/km | EURO5 improve test (EURO6) |
| Emission limits for diesel/CI engines | • NO _x -limit | More stringent than 0,20 g/km | Option: in steps, EURO5 and EURO6 |
| Biofuelled vehicle requirements | Cover with rules, when using: • ethanol • biogas • FAME | same as petrol | add regulation elements |
| | • low blending | 10 % | |
| Cold test limits | • HC-limit and • CO-limit | 0,9 g/km 6,5 g/km | unchanged method; -7°C |
| Evaporative emissions limits | • the limit value | 2 g/test or 0,5 g/test | |
| | • test method | Go to 3 diurnal cycles | from todays' one diurnal cycle |

*Table 3. **Proposals for EURO5.** Summary of Swedish EPA proposals.*

| Regulation elements | Suggestion | Limits, etc | Comment |
|-------------------------------------|---|---------------------------------------|------------------------------------|
| | Other elements | | |
| In-Use Compliance Provisions | • Include evap. and cold test | | |
| | • Revise criteria | | Fail clear failures! |
| | • Reporting • Warranty | | Raise cooperation in EU among TAA. |
| | • Develop sanctions. | | Better enforcement |
| On Board Diagnostic | • evap. system | • A new threshold for evap. emissions | |
| | • tighter thresholds | ...along with the limits. | |
| | • tamperproof | | anti-tampering |
| | • develop failure information | | Improve road worthiness tests! |
| Crankcase ventilation | • cover diesel engines • test method check | requirement remain unchanged | |
| Other | • improve enforcement | | To be further considered |
| | • renew test concept | | Cover more real driving modes. |

The amendments should start to be implemented by 2008.

However, this has to be a preliminary notion because of mainly these reasons:

- the Commissions analysis of technical improvements and costs has not been revealed;
- technical requirements for other polluting categories have not been considered. Thus the total package of measure is not known to us at the present point in time.

Our suggestions may be further refined, and perhaps expanded, after having considered further documentation on these issues, including additional, still at this moment un-published documentation on the CAFE program.

Swedish experts will volunteer to further explain these proposals and assist in further drafts. Following this intervention we plan to go on working on several inputs that have been mentioned in this report. Table 4 sums up the items where we should want to supply new in-puts to the proceedings.

Table 4. In-Puts on EURO5. Summary of scheduled Swedish drafts.

| Regulation elements | Coming In-Put on | Comment |
|--|--|---------|
| | | |
| Emission limits for diesel/CI engines | <ul style="list-style-type: none"> • draft proposal for NO_x limit value(s). | |
| Biofuelled vehicle requirements | <ul style="list-style-type: none"> • Explain why go for 10% oxygen content. • Amendment proposals to regulation annexes for inclusion of alternative fuels. | |
| In-Use Compliance tests | <ul style="list-style-type: none"> • Proposals for improvements: criteria, warranty claim reports, communication, improved enforcement, etc. • Include evaporative emissions and cold temperature emissions. | |
| Further Work | <ul style="list-style-type: none"> • Off-cycle test regime. | |

Annex II to letter in response to Questionnaire on EURO5 for light vehicles

Swedish Emission Data Contributions to EURO5

Tail-pipe emissions of EURO 3 and EURO 4

Table 3 brings data over from a report on in-service conformity testing in Sweden¹. These emission results are from in-use production vehicles. It is evident that petrol-fuelled vehicles perform well below the EURO4 limits, even after having been used some years. Diesels seems to have more problems, particularly with NO_x-emissions.

Evaporative emissions

EURO 3 and 4 cars have effectively the same technology for evaporative control as earlier concepts. To pass the requirements, the control system needs to control gas fumes during one day and night over a temperature rise and fall from 20 up to 35 and down again to 20 degrees centigrade. Our recent test date shows that this may lead to that emission are steeply higher from a vehicle sitting for more than one day and night. Some old inventory discussed at the occasion of the drafting of the EURO3 and 4 requirements ten years ago, suggested that to happen fairly often.

The test data in Table 1 give some examples on the evaporative emission behaviour of a good standing EURO 3 and 4 vehicle. The limit value of 2.0 g/test is satisfied (hot soak 0,149 and diurnal 1,307 give the sum 1,456). But if the test is extended beyond the stipulated 24 hours emissions start to increase. In this case a marked increase appears in the third diurnal test round.

If the requirement included 3 days and nights with the same limit value potentially very much evaporation of hydrocarbons could be stopped. For our test case this should mean from total 12.594 down to below 2.0 g/test. The differing 10 grams may take approx. 150 km of driving to get out as hydrocarbon emissions from the tail-pipe.

For this particular test vehicle the California diurnal variable temperature test curve did create some 3 per cent increase of diurnal emissions. The California test goes up to approx. 41 degrees C. It has a difference between minimum and maximum test temperature of 22 degrees, compared to the European 15 degrees.

The in-use testing done by Sweden (see Table 3) has disclosed some quality and durability problems with existing EURO 3 and 4 evaporative control systems. At the same time, tests also show example of systems with good performance in-use. This means that the technology is feasible, but that perhaps more attention need to be given to improve compliance across the board.

¹ Swedish Testing of In-Use Vehicles. First Two Years with Directive 98/69/EC-Rules, SEPA, 29/04/04.

Cold temperature emissions

Vehicles from one EURO3 model was tested, see Table 2. This model was not subject to the cold temperature requirements. Thus it was not optimized for cold performance. Compare these data with the EURO4-specified car model that was tested in the in-use program (Table 3, at top of page 4). It follows from this comparison that: a. there is a range of emission levels in cold test, b. typical cold temperature emission levels are far below the current cold limit values. The limits were established in relation to EURO 3. This may imply that an adaptation to EURO5 of the cold temperature limit values should be considered.

Table 1. **Evaporative emissions.** In-put data to EURO 5 discussions. Test in variable temperature enclosure (VT SHED), diurnal breathing losses.

| Evaporative Emissions | | | | Results: Evaporative emissions (Type IV test in Annex VI in Directive 98/69/EC) | | | |
|-----------------------|----------|--------|------------------------|---|---------------------|-------|-------|
| Test objects | Test | Unit | Conditions | Total | Additional diurnals | | |
| | | | | | 24h | 24h | 24h |
| One passenger car | Hot soak | g/test | | 0,149 | | | |
| | Diurnal | g/test | Diurnal 24 h real time | 1,307 | 1,307 | - | - |
| | Diurnal | g/test | Diurnal 48 h real time | 3,122 | 1,307 | 1,815 | - |
| | Diurnal | g/test | Diurnal 72 h real time | 12,445 | 1,307 | 1,815 | 9,323 |
| | Hot soak | g/test | | 0,117 | | | |
| Same car | Diurnal | g/test | Diurnal 24 h CARB T | 1,349 | | | |

NOTE: Tests performed at AVL MTC 9 January 2004. (CARB=California Air Resources Board). CARB T means diurnal temperature profile 19-41 degrees C.

Table 2. **Cold Temperature Tests.** In-put data to EURO 5 discussions. Tests according to Type IV test. Four in-use vehicles, not subject to EURO3-cold temperature requirements.

| Cold temperature emissions | | | | Cold temperature test (Type VI test, Annex VII in Directive 98/69/EC) | | | |
|--|---------|------------|------|---|-------|--------------|-----|
| | Car No. | Mileage km | Unit | Limit values | | Test results | |
| | | | | CO | HC | CO | HC |
| Cold temperature test minus 7 degrees C | 1 | 47135 | g/km | [15] | [1,8] | 8,7 | 1,7 |
| | 2 | 31255 | g/km | | | 13,7 | 2,8 |
| | 3 | 60674 | g/km | | | 8,7 | 2,8 |
| | 4 | 36617 | g/km | | | 10,2 | 2,7 |

NOTE: Tests performed at AVL MTC 9 January 2004.

Table 3. **Table of results.** Swedish in-use compliance test program 2002-2003 in relation to Directive 98/69/EC and 2002/80/EC. Test vehicle data and emission test results. 8 vehicles per model were tested (7 in one case). Petrol vehicles in light blue and diesels in grey. Red cell background indicates measurement results exceeding applicable limit value.

| Fuel and EURO | Make Model Test weight kg | Trans mission | Mile-age km | Driving Cycle Test, g/km | | | | | Crank case test | Evap. test g/ test | Cold temp test, g/km -7 °C | | Conf. of em. cntr. |
|---------------|---------------------------|---------------|-------------|--------------------------|-------|---------------------|-----------------|----|-----------------|--------------------|----------------------------|----|--------------------|
| | | | | CO | HC | HC+ NO _x | NO _x | PM | | | HC | CO | |
| | | | | | | | | | | | | | |
| Petrol | Volvo | M5 | 29432 | 0,88 | 0,065 | | 0,022 | | P | 0,78 | | | P |
| EURO3 | S60 | M5 | 47952 | 0,83 | 0,042 | | 0,029 | | P | 0,95 | | | P |
| | | M5 | 45487 | 0,80 | 0,047 | | 0,026 | | P | 1,1 | | | P |
| | | M5 | 54582 | 1,40 | 0,092 | | 0,037 | | P | 1,3 | | | P |
| | | M5 | 42515 | 0,82 | 0,045 | | 0,018 | | P | | | | P |
| | IW: | A4 | 48523 | 0,62 | 0,043 | | 0,028 | | P | | | | P |
| | 1700 | A4 | 62204 | 0,87 | 0,061 | | 0,042 | | P | | | | P |
| | | M5 | 49211 | 0,94 | 0,06 | | 0,036 | | P | | | | P |
| Petrol | Renault | M5 | 34926 | 0,67 | 0,1 | | 0,022 | | P | 9,9 | | | P |
| EURO3 | Scenic | M5 | 33560 | 0,70 | 0,11 | | 0,031 | | P | 8,2 | | | P |
| | 1.6 | A4 | 32375 | 0,82 | 0,11 | | 0,061 | | P | | | | P |
| | | M5 | 32825 | 0,72 | 0,11 | | 0,033 | | P | 2,0 | | | P |
| | | M5 | 28938 | 0,87 | 0,11 | | 0,031 | | P | 4,1 | | | P |
| | | M5 | 34797 | 0,74 | 0,13 | | 0,055 | | P | | | | P |
| | IW: | A4 | 28033 | 0,92 | 0,088 | | 0,032 | | P | | | | P |
| | 1360 | A4 | 44392 | 0,77 | 0,097 | | 0,052 | | P | | | | P |
| Petrol | BMW | A4 | 45890 | 0,69 | 0,079 | | 0,033 | | P | 1,2 | | | P |
| EURO3 | 320i | M5 | 33359 | 0,87 | 0,062 | | 0,019 | | P | 2,1 | | | P |
| | | M5 | 23333 | 1,00 | 0,065 | | 0,009 | | P | | | | P |
| | | M5 | 24613 | 0,78 | 0,061 | | 0,02 | | P | | | | P |
| | | M5 | 44343 | 0,92 | 0,069 | | 0,075 | | P | | | | P |
| | IW: | M5 | 54782 | 0,98 | 0,059 | | 0,035 | | P | 0,89 | | | P |
| | 1470 | M5 | 37540 | 0,85 | 0,077 | | 0,04 | | P | | | | P |
| | | M5 | 14346 | 0,95 | 0,05 | | 0,025 | | P | 1 | | | P |
| Petrol | Hyunda i | M5 | 51101 | 0,64 | 0,060 | | 0,050 | | P | 1,5 | | | P |
| EURO4 | Trajet | M5 | 45437 | 0,34 | 0,043 | | 0,048 | | P | 2,4 | | | P |
| | | M5 | 47077 | 0,52 | 0,061 | | 0,041 | | P | | | | P |
| | | M5 | 36247 | 0,58 | 0,061 | | 0,046 | | P | 1,7 | | | P |
| | | A4 | 31228 | 0,47 | 0,065 | | 0,021 | | P | | | | P |
| | IW: | A4 | 60627 | 0,55 | 0,053 | | 0,046 | | P | | | | P |
| | 1810 | M5 | 36590 | 0,45 | 0,060 | | 0,046 | | P | | | | P |
| | | M5 | 49071 | 0,51 | 0,050 | | 0,043 | | P | 0,87 | | | P |
| Petrol | Seat | M5 | 34707 | 0,39 | 0,049 | | 0,055 | | P | 5,7 | | | P |
| EURO4 | Leon | M5 | 23892 | 0,33 | 0,048 | | 0,050 | | P | 3,7 | | | P |
| | | M5 | 32907 | 0,17 | 0,057 | | 0,054 | | P | 5,8 | | | P |

| Fuel and EURO | Make Model Test weight kg | Trans mission | Mile-age km | Driving Cycle Test, g/km | | | | | Crank case test | Evap. test g/ test | Cold temp test, g/km -7 °C | | Conf. of em. cntr. |
|--------------------|---------------------------|---------------|-------------|--------------------------|-------|---------------------|-----------------|-------|-----------------|--------------------|----------------------------|------|--------------------|
| | | | | CO | HC | HC+ NO _x | NO _x | PM | | | HC | CO | |
| | | | | | | | | | | | | | |
| | | M5 | 33059 | 0,28 | 0,050 | | 0,061 | | P | 3,0 | | | P |
| | | M5 | 25831 | 0,35 | 0,056 | | 0,045 | | P | | 1,5 | 3,1 | P |
| | IW: | M5 | 33437 | 0,39 | 0,059 | | 0,059 | | P | | 1,4 | 3,6 | P |
| | 1360 | M5 | 45962 | 0,49 | 0,060 | | 0,044 | | P | | 1,4 | 3,1 | P |
| | | M5 | 38843 | 0,33 | 0,054 | | 0,048 | | P | | 1,3 | 2,8 | P |
| Petrol | 9-5 | M5 | 24819 | 0,44 | 0,031 | | 0,007 | | P | 5,2 | | | P |
| EURO3 | | M5 | 38043 | 0,42 | 0,041 | | 0,009 | | P | 3,1 | | | P |
| | | A5 | 18734 | 0,33 | 0,043 | | 0,083 | | P | | | | P |
| | | A5 | 25050 | 0,48 | 0,073 | | 0,013 | | P | | | | P |
| | IW: | M5 | 58023 | 0,52 | 0,043 | | 0,011 | | P | | | | P |
| | 1700 | M5 | 49856 | 0,45 | 0,035 | | 0,011 | | P | 3,2 | | | P |
| | | M5 | 38176 | 0,34 | 0,035 | | 0,008 | | P | 4,0 | | | P |
| | | M5 | 33958 | 0,44 | 0,042 | | 0,008 | | P | | | | P |
| Petrol | Fiat | M5 | 40198 | 1,08 | 0,131 | | 0,028 | | | | | | |
| EURO3 | Punto | M5 | 11383 | 1,99 | 0,209 | | 0,052 | | | | | | |
| | 55 S | M5 | 51370 | 0,93 | 0,132 | | 0,034 | | | | | | |
| | | M5 | 46561 | 0,84 | 0,139 | | 0,033 | | | | | | |
| | | M5 | 30414 | 1,26 | 0,145 | | 0,035 | | | | | | |
| | IW: | M5 | 32588 | 1,12 | 0,152 | | 0,041 | | | | | | |
| | 1020 | M5 | 29113 | 1,86 | 0,205 | | 0,064 | | | | | | |
| | | M5 | 21040 | 1,49 | 0,195 | | 0,035 | | | | | | |
| Petrol | Rover | A5 | 55571 | 0,28 | 0,04 | | 0,016 | | | | | | |
| EURO3 | 75 | A5 | 28702 | 0,26 | 0,051 | | 0,011 | | | | | | |
| | | A5 | 14676 | 0,23 | 0,031 | | 0,01 | | | | | | |
| | | A5 | 36531 | 0,20 | 0,027 | | 0,015 | | | | | | |
| | | A5 | 47489 | 0,65 | 0,051 | | 0,47 | | | | | | |
| | IW: | A5 | 33213 | 0,26 | 0,035 | | 0,014 | | | | | | |
| | 1590 | M5 | 23436 | 0,10 | 0,016 | | 0,115 | | | | | | |
| | | A5 | 71646 | 0,27 | 0,037 | | 0,015 | | | | | | |
| Average all petrol | | | 37728 | 0,68 | 0,07 | | 0,04 | | | 3,07 | 1,40 | 3,15 | |
| | | | | | | | | | | | | | |
| Diesel | Saab | M5 | 64355 | 0,28 | | 0,93 | 0,89 | 0,037 | P | | | | P |
| EURO3 | 9-3 2.2 | M5 | 55647 | 0,30 | | 0,87 | 0,85 | 0,043 | P | | | | P |
| | TID | M5 | 30679 | 0,26 | | 0,51 | 0,5 | 0,036 | P | | | | P |
| | | M5 | 33398 | 0,32 | | 0,65 | 0,63 | 0,038 | P | | | | P |
| | IW: | M5 | 74491 | 0,35 | | 0,47 | 0,44 | 0,057 | P | | | | P |
| | 1590 | M5 | 33235 | 0,23 | | 0,39 | 0,37 | 0,032 | P | | | | P |
| | | M5 | 48684 | 0,24 | | 0,42 | 0,41 | 0,037 | P | | | | P |
| Diesel | VW | A5 | 41105 | 0,07 | | 0,48 | 0,46 | 0,042 | P | | | | P |
| EURO3 | Passat | A5 | 34838 | 0,06 | | 0,56 | 0,55 | 0,029 | P | | | | P |
| | | M6 | 42303 | 0,25 | | 0,7 | 0,68 | 0,055 | P | | | | P |
| | | M6 | 13582 | 0,23 | | 0,61 | 0,58 | 0,031 | P | | | | P |

| Fuel and EURO | Make Model Test weight kg | Transmission | Mileage km | Driving Cycle Test, g/km | | | | | Crank case test | Evap. test g/test | Cold temp test, g/km -7 °C | | Conf. of em. cntr. |
|---|---------------------------|--------------|------------|--------------------------|----|---------------------|-----------------|-------|-----------------|-------------------|----------------------------|----|--------------------|
| | | | | CO | HC | HC+ NO _x | NO _x | PM | | | HC | CO | |
| | | M6 | 58895 | 0,20 | | 0,46 | 0,43 | 0,038 | P | | | | P |
| | IW: | M6 | 14538 | 0,31 | | 0,49 | 0,46 | 0,049 | P | | | | P |
| | 1700 | M6 | 32074 | 0,32 | | 0,51 | 0,48 | 0,048 | P | | | | P |
| | 1590 | M6 | 18586 | 0,17 | | 0,17 | 0,5 | 0,034 | P | | | | P |
| Average all diesel | | | 39761 | 0,24 | | 0,55 | 0,55 | 0,04 | | | | | |
| NOTE: In terms of Directive 70/220/EEC language Driving cycle test=Type I test, crankcase emission test=Type III test, Evaporative emission test=Type IV test, Cold temperature emission test=Type VI test. | | | | | | | | | | | | | |

Sweden, Stockholm - 2005-09-06

Comments regarding Euro 5 emission limits for light duty vehicles

It's the Swedish Gas Associations opinion that the suggested Euro 5 legislation for light duty vehicles will drastically deteriorate the possibilities for natural gas vehicles (NGV) on the European market.

The Euro 4 as well as the suggested Euro 5 limits for light duty vehicles are outlined for gasoline (spark ignition) and diesel (compression ignition) vehicles. Today NGV has the same type of engine as a gasoline car. In the future it can not be excluded that methane is used in cars with compression ignition.

In the suggested Euro 5 legislation as well as in previous legislation no consideration is taken to the composition of the hydrocarbon emissions. It's a problem for natural gas vehicles (NGV) that the hydrocarbon emissions include methane. NGV has higher methane emissions compared to gasoline and diesel cars, but lower emissions of other hydrocarbons. Natural gas and biogas that are used in NGV both mainly consist of methane. Small amounts of unburned methane pass through the engine and exhaustion system.

Methane is not toxic and it has low reactivity for forming ozone compared to other hydrocarbons. On the other hand methane is a green house gas, but the low levels of methane that are released from NGV is negligible compared to the reduction of carbon dioxide emissions when gasoline is substituted with natural gas and biogas.

The Swedish Gas Association recommend that the emission levels for hydrocarbons for light duty NGV are outlined in the same way as in the European legislation for heavy duty vehicles. That is exclusive methane - NMHC (non methane hydrocarbons) and separately for methane.

In the Euro 5 draft limits for HC for spark ignition engines (which also apply for NGV) are reduced with 25 % compared to Euro 4, giving a limit value of 75 mg/km. NGV manufacturers are doubtful that this is technically realizable. This means that the Euro 5 will be a drastic disadvantage for NGV. This is bad for the environment since methane is a much simpler fuel than gasoline and diesel and therefore implies lower emissions of NMHC, particles, nitrogen oxides and carbon dioxide.

It's the Swedish Gas Associations opinion that the Euro 5 levels for HC might risk excluding NGV from the European market. This will not only threaten Sweden but also EU's possibilities to reach the EU-directive 2003/30/EG as well as the target for 20 % alternative fuels 2020.

Best Regards,
SWEDISH GAS ASSOCIATION

European Commission
DG Enterprise & Industry
Automotive Industry Unit - F1
BE-1049 Brussels

Comments by the Swedish NGO Secretariat on Acid Rain to the Commission's draft proposals for Euro 5.

In the European Union, each year some 370,000 persons die from breathing contaminated air. This means that the toll from air pollution, much of which comes from cars and trucks, is more than seven times greater than the number of deaths from road accidents.

More than 90 per cent – nearly 350,000 – of these premature deaths are caused by fine particles (PM), the remaining 21,000 by ground-level ozone. To this should be added a large number of morbidity effects that affect a much greater number of people. For example, the current levels of PM are estimated to be responsible for around 100,000 cases of respiratory or cardiac hospital admissions, 30 million respiratory medication use days, and several hundred million restricted activity days each year.

The figures above come from studies prepared under the European Commission's Clean Air For Europe (CAFE) programme. This four-year programme has produced some alarming figures – not only regarding health impacts, but also on the environmental damage caused by air pollution. It has also clearly demonstrated that the benefits of taking additional action to further reduce air pollutant emissions by far outweigh the costs.

Improving air quality is listed as one of the priorities in the EU's Sixth Environment Action Programme, and in article 2 it is stated that the programme aims at *“contributing to a high level of quality of life and social well being for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment...”*

This aim is to be pursued by objectives and actions as outlined in article 7. Regarding air quality the stated objective is to achieve *“levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment”*. Among the key measures listed are the development of a thematic strategy on air pollution, and the review and updating of air quality standards and national emission ceilings, with a view to reach the long-term objective of no exceedance of critical loads and levels.

Air pollutant damage to human health and the environment constitutes one of the most serious problems in Europe. Additional action for reducing emissions from motor vehicles is necessary, both for attainment of the health and environmental objectives of the 6EAP, and for member states to be able to meet the EU air quality standards for PM, NO₂, and ozone. Consequently, the introduction of stricter emission standards for motor vehicles is urgently needed.

In the light of these challenges, the Commission's draft proposal for Euro 5 standards is clearly not enough. In spite of the fact that these proposed new standards are not likely to take effect until earliest by 2008, they do not even reflect the best currently available techniques.

We therefore suggest:

- a first step reduction of at least 90 per cent in PM emissions from diesel passenger cars to maximum 2.5 mg/km or lower, instead of 5 mg/km as in the current draft proposal. (Even levels of 2 - 1 mg/km are attainable.);
- at least a 70 per cent reduction in NOx emissions from diesel cars, to maximum 75 or 80 instead of 200 mg/km as a first step. (A second step could be a lowering down to 40 mg/km, for both diesel and petrol cars.) A strict NOx standard would require application of exhaust after treatment (such as selective catalytic reduction) for diesel cars, which offers additional benefits in terms of fuel consumption and CO₂-emissions;
- 2008 as introduction year for the first step of the new standards to enter into force;

Göteborg 2005-09-09

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Stockholm, 2005-09-02

To The European Commission
Enterprise and Industry

Comments from the Swedish Society for Nature Conservation on the preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of atmospheric pollutants from motor vehicles (Euro 5)

Introduction of SSNC

Swedish Society for Nature Conservation is the largest and oldest Swedish Environmental NGO with approx 170 000 members. We have been active in the field of car emissions since the 1970s when acidification, overfertilisation, ground-level ozone and different health problems related to traffic became a public issue.

Comments to Commission's pre-proposal

Basically we ask for a technically neutral structure of the standards. We can expect that new engine solutions as well as new ways to provide the vehicles with energy will show up. A standard based on gasoline and diesel run the risk of becoming increasingly obsolete.

A second reason for technical neutrality is that it would make it easier for the member states to base their taxation on the same principle, preferably on the estimated social marginal costs. Today diesel is generally in most member states considerably less taxed than petrol. This tends to undermine the overall efficiency of the transport system. If the same emission standard is applied on all vehicles it would be easier to push down the carbon dioxide emissions from the cars at low costs.

On the basis of this we suggest that the final proposal includes the present values for vehicles category M (mg/km):

| | Petrol | | | Diesel | | |
|-----------------------|--------|----------------|-------|--------|------------|-------|
| | Euro 4 | Commission | SSNC | Euro 4 | Commission | SSNC |
| Hydro carbons (HC) | 100 | 75 | 50 | (50) | (50) | 50 |
| Nitrogen oxides (NOx) | 80 | 60 | 80/40 | 250 | 200 | 80/40 |
| Particles | - | 5 ¹ | 2/1 | 25 | 5 | 2/1 |
| Carbon monoxide | 1000 | 1000 | 500 | 500 | 500 | 500 |

¹ only lean burn direct injection

The SSNC proposals on NOx and particles indicates a two-step approach with step-wise tightening of the standards.

We welcome the proposal to introduce a number standard for particles.



New fuels

In Sweden, ethanol is increasingly replacing petrol. Other fuels, as RME, is given a lot of interest. The present standards are not adapted to this development. We therefore urge the Commission to propose standards also for other fuels than petrol and diesel.

The test cycle

The present test cycle seems to have considerable weaknesses. It does not sufficiently reflect real driving conditions. This also have strong implications when member states try to base the vehicle taxation on the estimated carbon dioxide emissions. A new and better test cycle is needed.



Bundesamt für Strassen **ASTRA**
Office fédéral des routes **OFROU**
Ufficio federale delle strade **USTRA**
Swiss Federal Roads Authority **FEDRO**

Bundesamt für Umwelt, Wald und Landschaft **BUVAL**
Office fédéral de l'environnement, des forêts et du paysage **OFEFP**
Ufficio federale dell'ambiente, delle foreste e del paesaggio **UFAFP**
Swiss Agency for the Environment, Forests and Landscape **SAEFL**

Berne, 6 September 2005

European Commission
Enterprise and Industry
Directorate-General

BE-1049 Brussels

Send to: entr-euro5@cec.eu.int

Stakeholder Consultation – Euro 5 Emission Limits for Light Duty Vehicles

Dear Madam, dear Sir,

Thank you for giving us the opportunity to comment the draft proposal for Euro 5 emission limits for passenger cars and light duty vehicles.

Since 1995, the Swiss emissions standards for light and heavy duty vehicles have been harmonized with the European Union. We welcome the further emission reduction for both diesel and gasoline vehicles, and particularly the intention to introduce a particulate number standard.

The reduction of vehicular emissions is very important with regard to human health and environmental protection. Actual levels of particulate matter exceed the Swiss ambient air quality standards by far and lead to severe pulmonary illnesses and premature deaths. Black carbon emitted by diesel cars provokes pulmonary cancer. Nitrogen oxides are responsible for the excessive ozone pollution in Switzerland and elsewhere. Road traffic is an important source of these pollutants. The emissions urgently need to be cut as far as possible by applying the best available technologies. This will help Switzerland and the EU countries to reduce the health threat to their citizens as well as to fulfill their obligations in the framework of the UNECE Convention on Long-range Transboundary Air Pollution.

With reference to the published draft proposal, here are the Swiss comments:

Comment no.1: Set the Diesel Euro 5 emission limits for NOx to 125mg/km

The NOx limit value for diesel engines should be reduced by 50% of the Euro 4 value instead of 20% as proposed. The reason is that systems for NOx reduction like SCR catalyst, NOx Adsorber catalyst and high exhaust gas recirculation systems have now the potential of cutting at least 50% of the total NOx emissions. Their introduction on the market should be encouraged as soon as possible, for example by the means of the Euro 5 limit values.

Comment no.2: Set the Euro 5 emission limits for mass of particulates to 2.5mg/km

Systems to reduce the particulate matter emissions to 2.5mg/km are available and operative. In order to prevent the fast introduction of open particulate filters on the market, it is important to further reduce the limit value for the mass of particulates for both diesel and direct injection gasoline to 2.5mg/km instead of 5mg/km.

Comment no.3: Introduce an Euro 5 limit value for the number of particulates

We share your opinion that it is important to introduce at an early stage a limit value for the number of particles in order to prevent the application of open filters that could meet the particle mass requirements but would emit large amounts of ultrafine particles. The number value shall be limited as much as technology and operating conditions will allow. Switzerland has actively participated to the UNECE program on Particulate Measurement (PMP) for light duty vehicles in the GRPE, which shows that counting particles is feasible. Our experience from a recent Swiss particulate emissions program on vehicles equipped with different particulate filter technologies and with a gasoline direct injection has further shown that a limit value of 10^{11} particles number per km can be achieved.

We hope that these comments to the Euro 5 draft will be useful for the establishment of the new limit values.

We would be grateful if we could be informed about the outcome of the stakeholder consultation.

Yours Sincerely

Swiss Federal Roads Authority

Swiss Agency for the Environment,
Forests and Landscape



Europäische Kommission

ergeht per E-Mail an:

entr-euro5@cec.eu.int

Wien, 09.09.2005

Zahl: 111-28/05

Stellungnahme zum Dokument „Preliminary draft proposal for a Regulation of the European Parliament and of the Council relating to emissions of atmospheric pollutants from motor vehicles (Euro 5)“

1. Intention des Vorschlags

In dem vorliegenden Entwurf werden höchstzulässige Abgasemissionen während der Typprüfung von neuen PKW und leichten Nutzfahrzeugen vorgeschlagen. Diese EURO 5 Grenzwerte werden ab 2008 in Kraft treten.

2. Stickoxidemissionen in Österreich

Die RL 2001/81/EG (NEC Richtlinie) legt den maximalen Stickoxidausstoß in Österreich im Jahre 2010 mit 103.000 Tonnen fest. Im Jahr 2003 betrugen allein die NO_x Emissionen aus dem österreichischen Straßenverkehr etwa 100.000 Tonnen. Der Straßenverkehr ist damit bei weitem der größte Verursacher für Stickoxidemissionen in Österreich. Durch den gegenwärtigen Trend der Zunahme der Verkehrsleistung ist von einem weiteren Anstieg der Stickoxidemissionen auszugehen.

3. Stellungnahme durch das Umweltbundesamt

Das Umweltbundesamt begrüßt die vorgeschlagenen Grenzwerte für Partikelemissionen, da diese dazu beitragen, die Gesamtemissionen zu reduzieren und somit der Gesundheitsgefährdung durch die Feinstaubbelastung entgegen zu wirken. Die vorgesehenen Grenzwerte erfordern die Ausrüstung von Dieselfahrzeugen mit Partikelfiltern und entsprechen somit dem Stand der Technik.

Ebenfalls zu begrüßen ist die Berücksichtigung der Fahrzeuge mit direkt einspritzenden Ottomotoren in die Partikelgrenzwertgesetzgebung.

Zusätzlich zur Einführung eines Massegrenzwertes ist eine möglichst rasche Einführung eines Grenzwertes hinsichtlich der emittierten Partikelanzahl wünschenswert. Die ultrafeinen Partikel tragen wenig zur Gesamtmasse bei, sind aber aufgrund der hohen Anzahl von großer Bedeutung. Da gerade diese Partikel lungengängig sind und erwiesenermaßen eine Gesundheitsgefährdung darstellen, müssen diese Feinstpartikel zukünftig stärker in die Abgasgesetzgebung eingebunden werden. Die fachlichen Grundlagen hierfür sollten raschest möglich erarbeitet werden.

Demgegenüber sind die vorgeschlagenen Grenzwerte für Stickoxide aus Sicht des Umweltbundesamt nicht akzeptabel. Die angeführten Gründe für die geringe Reduktion gegenüber den geltenden EURO 4 Grenzwerten, nämlich die fehlende technische Umsetzbarkeit, ist nicht nachvollziehbar. Die Abgasgrenzwerte in den USA sowie in Japan liegen schon heute weit unter den im Entwurf vorgeschlagenen 200 mg/km (Abbildung 1).

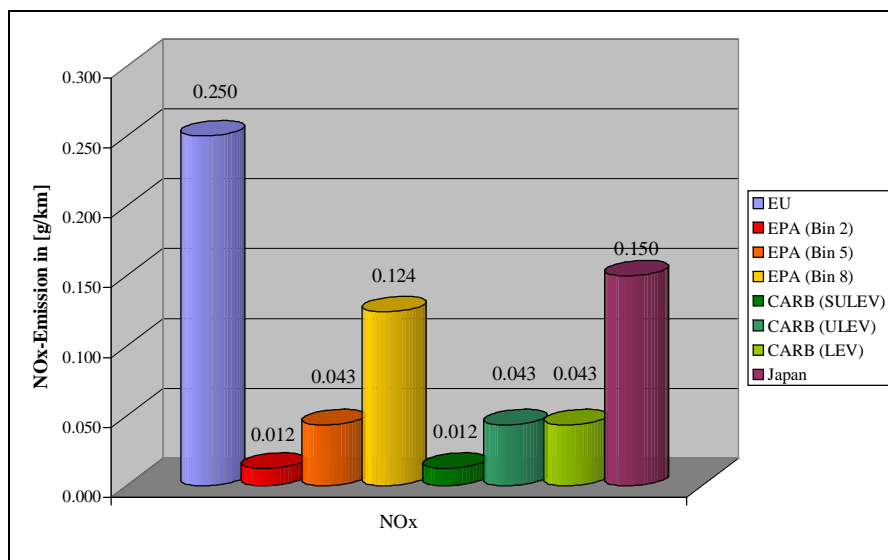
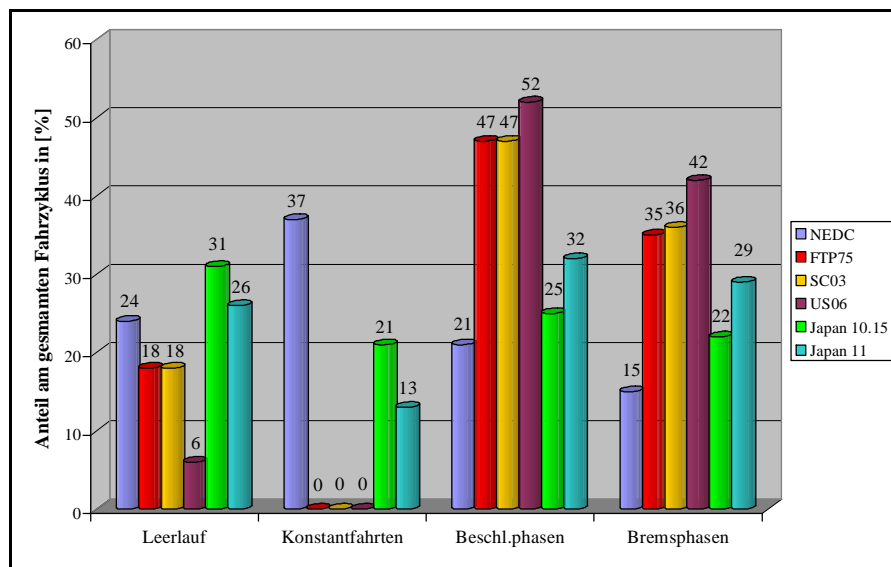


Abbildung 1: NO_x-Grenzwerte für Diesel-PKW in Europa, Amerika und Japan (Stand 2005)

Die durchschnittlichen NO_x-Grenzwerte in Amerika liegen bereits jetzt bei 43 mg/km, somit etwa auf einem Fünftel der im vorliegenden Entwurf vorgeschlagenen Werte für Europa. Ein so hoher Unterschied führt

neben einer nicht zu rechtfertigenden regionalen Differenzierung der Emissionsgrenzwerte auch zu unterschiedlichen Produktqualitäten für verschiedene Regionen, was angesichts eines vorsorgenden Umweltschutzes nach dem Prinzip des Stands der Technik nicht wünschenswert ist.

Anzumerken ist weiters, dass die den Emissionsgrenzwerten zugrunde liegenden Testzyklen speziell in Amerika über deutlich weniger Leerlauf- und Konstantfahrphasen verfügen und aufgrund einer dynamischeren Auslegung mit mehr Beschleunigungs- und Bremsphasen die Einhaltung der NO_x -Grenzwerte zusätzlich schwieriger möglich ist (Abbildung 2a+b).



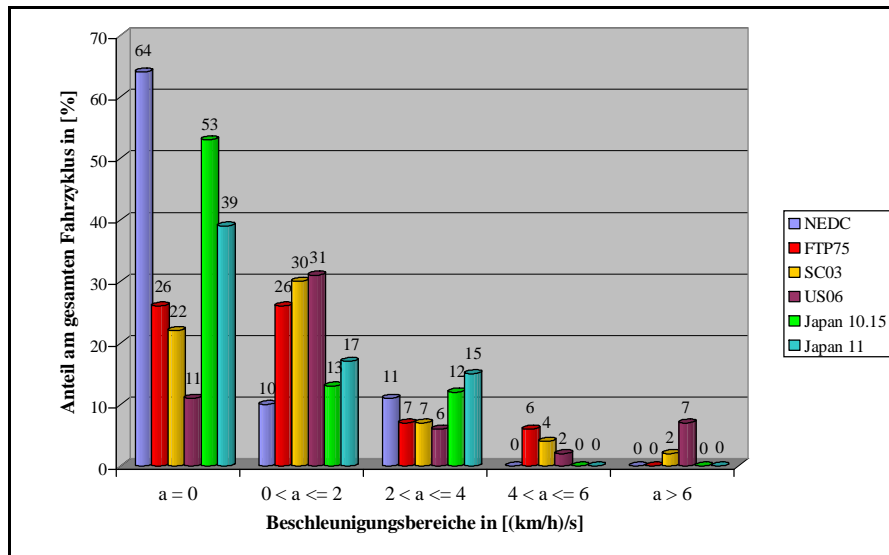


Abbildung 2a+b: Vergleich der Testzyklen in Europa, USA und Japan (Stand 2005)

Derzeit werden in Österreich unterschiedliche Maßnahmenpläne und Programme zur Reduktion der Treibhaus- und Schadstoffemissionen des Verkehrssektors ausgearbeitet. Speziell für die Reduktion der Stickoxidemissionen des Straßenverkehrs stellt die Festlegung strengerer Grenzwerte für PKW, leichte und schwere Nutzfahrzeuge eine der zentralen Maßnahmen dar. Diese Maßnahme würde durch die vorgeschlagenen NO_x Grenzwerte des vorliegenden Entwurfes deutlich abgeschwächt, wenn nicht unwirksam, werden.

Im Juli 2003 wurde vom deutschen Umweltbundesamt mit dem Papier „Future Diesel“ (Umweltbundesamt Berlin, Juni 2003) in der MVEG ein Vorschlag bezüglich neuer EURO 5 Grenzwerte für PKW und leichte Nutzfahrzeuge vorgelegt. Die in dem Papier vorgeschlagenen Grenzwerte wurden von den meisten Mitgliedsstaaten begrüßt. Vorgesehen war eine Absenkung des Stickoxidausstoßes auf 80 mg/km für PKW und leichte Nutzfahrzeuge (100 mg/km für NIII). Auch wurde keine Trennung der Emissionsgrenzwerte für Benzin- und Dieselfahrzeuge vorgenommen.

| Fahrzeugklasse/-gruppe | | Bezugs- masse RW (kg) | CO (g/km) | HC (g/km) | NO _x (g/km) | Partikel- masse (g/km) |
|-------------------------------|--------|-----------------------------|----------------|----------------|---------------------------|------------------------------|
| Klasse | Gruppe | | Otto Diesel | Otto Diesel | Otto Diesel | |
| Pkw | — | alle | 1,0 | 0,050 | 0,08 | 0,0025 |
| Leichte Nutz- fahrzeuge | I | $RW \leq 1305$ | 1,0 | 0,050 | 0,08 | 0,0025 |
| | II | $1305 < RW \leq 1760$ | 1,0 | 0,050 — | 0,08 | 0,0025 |
| | III | $1760 < RW$ | 1,25 | 0,063 — | 0,10 | 0,0032 |

Abbildung 3: Grenzwertvorschlag „Future Diesel“; Umweltbundesamt Berlin, Juni 2003

Aus technischer Sicht ist anzumerken, dass es bereits heute Fahrzeuge auf dem Markt gibt, welche serienmäßig diese Grenzwerte unterschreiten. So weist etwa Toyotas Dieselmotor mit DeNO_x Technologie einen Stickoxidausstoß von 50 mg/km auf. Ein derartiges Konzept kann somit als Stand der Technik angenommen werden.

Die nunmehr durch die Europäische Kommission vorgeschlagenen EURO 5 Emissionsgrenzwerte für Stickoxide sind nicht geeignet, um mittelfristig eine aus Umwelt- und Gesundheitsgründen dringend erforderliche Abnahme der NO_x Emissionen in ausreichendem Maße zu gewährleisten. Das Umweltbundesamt schlägt vor, die Stickoxid-Emissionsgrenzwerte für Benzin- und Dieselfahrzeuge anzugleichen und an die im Vorschlag „Future Diesel“ angeführten Werte anzupassen. Diese Grenzwerte sind aus technischer Sicht bereits heute erreichbar und stellen, gemeinsam mit nationalen Förderprogrammen zur raschen Flottenerneuerung, einen wesentlichen Grundpfeiler für die Erreichung europäischer Umweltqualitätsziele dar.

07.09.2005

VDA-Stellungnahme zum Entwurf der Europäischen Kommission zu Euro 5**1. Generelles Vorgehen**

Die deutsche Automobilindustrie hat ein großes Interesse an einer raschen Festlegung der Euro-5-Genehmigungsstufe, um für die erforderlichen Investitionen in die neue Abgasstufe die notwendige Planungssicherheit zu haben.

Die Automobilindustrie drängt auf einen möglichst schnellen Entwurf auch für die technischen Anhänge um den Gesamtprozess somit zu beschleunigen.

2. Anwendungszeiten

Die deutsche Automobilindustrie fordert eine Einführung von Euro-5 nicht vor dem Jahr 2010, wie es auch von der Europäischen Kommission Anfang 2005 in Aussicht gestellt wurde. Die Einführung von Euro-4 war mit erheblichen finanziellen Aufwendungen verbunden. Ein Vorziehen von Euro-5 würde die Geltungsdauer von Euro-4 verkürzen und somit auch den Amortisationszeitraum von Euro-4 verkürzen.

Die deutsche Automobilindustrie schlägt auf dieser Basis die folgenden frühesten Einführungsstermine vor:

- M1 <2,5t und N1/Gruppe I: ab 1.1.2010 für neue Typen
- M1 <2,5t und N1/Gruppe I: ab 1.1.2011 für alle Neuzulassungen
- M1 >2,5t und N1/Gruppe II+III: ab 1.1.2011 für neue Typen
- M1 >2,5t und N1/Gruppe II+III: ab 1.1.2012 für alle Neuzulassungen

Die deutsche Automobilindustrie wehrt sich massiv gegen die Pläne, die Einführungsdaten vorzuziehen. Entgegen Die Grenzwertabsenkung stellt insbesondere von NOx für die gesamte Fahrzeugflotte einen großen Entwicklungsschritt dar.

Das zeitgleiche Inkrafttreten für M1- und N1-Fahrzeuge der Klassen II und III stellt eine hohe Anforderung an die begrenzten Ressourcen der Typprüfbehörden dar. Bei früheren Änderungen der Abgasgesetzgebung wurde darauf Rücksicht genommen. Daher drängt die Automobilindustrie auf eine verbindliche Einführung von Euro 5 für diese Fahrzeuge ab dem 1.1.2011.

2. Grenzwerte für Ottomotoren

Eine Absenkung der Ottogrenzwerte wird mit folgender Begründung abgelehnt:

1. die deutsche Automobilindustrie verkauft die meisten DI-(lean burn)-Fahrzeuge. Dort führen reduzierte NOx-Grenzwerte zu erhöhten Kosten bei der NOx-Nachbehandlung, die durch Umwelanforderungen nicht gerechtfertigt sind.
2. Die HC-Reduzierung führt bei CNG-Fahrzeugen zu Problemen. Die zusätzlichen Kosten sind durch Umwelanforderungen nicht gerechtfertigt.

Beide Technologien sind zur Reduktion der CO2-Emissionen erforderlich.

Der moderne Ottomotor ist als sauberer und effizienter Motor etabliert. Eine weitere Absenkung führt zu höheren Kosten – nicht jedoch zu einem signifikanten positiven Effekt für die Luftqualität.

Solange die Kosteneffizienz dieser Grenzwertabsenkung nicht bewiesen ist, wird eine weitere Senkung der Limits abgelehnt.

3. Grenzwerte für Dieselmotoren

Die deutschen Fahrzeughersteller sind weltweit gesehen die größten Diesel-Pkw-Produzenten. Deshalb ist es für den VDA wichtig, die Attraktivität und Wirtschaftlichkeit dieser Konzepte zu erhalten und weiterzuentwickeln. Konsequenterweise unterstützt der VDA den Vorschlag der EU-Kommission, den NOx-Grenzwert für Euro 5 so festzulegen, dass er ohne Abgasnachbehandlung erreicht werden kann.

Sollte dies nicht gelingen, werden- falls die Technologie überhaupt verfügbar sein sollte- folgende Nachteile eintreten:

- Der Verbrauch der Diesel wird um ca. 4% ansteigen.
- Aufgrund der hohen Kosten der Aggregate mit NOx-Nachbehandlung wird speziell im Kleinwagensegment eine Verschiebung hin zum Ottomotor erfolgen, was zu einer deutlichen Erhöhung der CO₂-Emissionen führen wird.

a) Partikelgrenzwerte

Die deutsche Automobilindustrie unterstützt den von der Europäischen Kommission vorgeschlagenen Grenzwert von 5mg/km. Das politische Ziel der Einführung des Diesel-Partikelfilters wird durch diesen Grenzwert erreicht.

Die Genauigkeit des gravimetrischen Messverfahrens, die Streuung von Prüfstand zu Prüfstand und von Labor zu Labor erlauben keine weitere Absenkung des Partikelgrenzwertes, da dieser über die gesamte Fahrzeugflotte und die gesamte Fahrzeuglebensdauer eingehalten werden muß. Ungerechtfertigte Kostenerhöhungen trafen insbesondere die deutsche Automobilindustrie, da diese den höchsten Dieserverkauf in der EU hat.

b) NOx-Grenzwerte

Die deutsche Automobilindustrie unterstützt die Bundesregierung bei einem von der Kommission vorgeschlagenen Grenzwert von 200mg/km. Das Limit von 200mg/km bedeutet eine Verbesserung von 20% gegenüber Euro 4 und stellt eine Herausforderung für die Industrie dar. Da NOx-Nachbehandlungssysteme bis etwa 2010 nicht reif für einen Großserieneinsatz sein werden, ist eine weitere Reduzierung nicht darstellbar.

c) PM-Zählverfahren

Die Einführung eines Partikelzählverfahrens wird kategorisch abgelehnt, solange es keine Fakten gibt, die ein solches Verfahren rechtfertigen.

Es gibt hinreichend viele Untersuchungen, die eine Korrelation von Masse und Partikelzahl aufzeigen. Das gravimetrische Verfahren ist bewährt und zuverlässig. Der Mehrwert eines Partikelzählverfahrens ist bisher nicht erbracht worden. Die aus diesem

neuen Messverfahren entstehenden Kosten sind gewaltig sowohl für die Entwicklung als auch für das Typprüfverfahren und sind daher nicht gerechtfertigt.

d) N-Fahrzeuge

Die neuen vorgeschlagenen Partikel-Grenzwerte für die die Gruppen N1-II und N1-III entsprechen gegenüber Euro 4 einer 80%-Absenkung.

Die deutsche Automobilindustrie widerspricht entschieden der Einschätzung, dass eine 80%-Absenkung einer mäßigen Absenkung entspricht.

e) schwere M1

Die deutsche Automobilindustrie sieht weiterhin die Notwendigkeit eigener Grenzwerte für schwere M1-Fahrzeuge.

Als Beispiel sollen hier 7-sitzige Fahrzeuge aufgeführt werden, welche einen erhöhten Raumbedarf, eine spezielle Konstruktion und ein erhöhtes Gewicht aufweisen. Diese Fahrzeuge füllen das Bedürfnis nach Mobilität für Großfamilien bzw. für Shuttle-Busse, Taxis oder den regionalen Sammelverkehr.

Als weiteres Beispiel können Wohnmobile >2,5t aufgeführt werden.

Diese Fahrzeuge haben einsatzbedingt ein höheres Gewicht, welches eine Zulassung als schwere Pkw rechtfertigt.

5. Financial Incentive

Die Festschreibung der Möglichkeit finanzieller Incentives trägt dazu bei, die Vereinheitlichung der europäischen Zulassungsvorschriften voranzubringen. Die deutsche Automobilindustrie stimmt deshalb ausdrücklich dieser Erwähnung zu.

6. Dauerhaltbarkeit

Eine Erweiterung der Dauerhaltbarkeit auf 160000 km wird abgelehnt. Hauptgrund ist, dass die „in-use“-Vorschriften die Emissionsverantwortung im Feld eindeutig beim Hersteller verankern und deshalb der Dauerlauftest und die daraus abgeleiteten Verschlechterungsfaktoren heute nicht mehr von Bedeutung sind.

Zudem werden mit der in-use-Forderung von 5 Jahren und 100000km bereits praktisch alle Fahrzeuge abdeckt, die aufgrund der „in-use“-Kriterien zur Prüfung zur Verfügung stehen. Ältere Fahrzeuge scheiden in der Regel wegen mangelnder Wartung aus.

Hello,

i want to participate.

The PM problem is hot here. So i want an overall (for all cars, motors and mopeds) decrease of emissions of 90%. especially the PM 0,4!

kind regards,
met vriendelijke groet,

Johan Overvest

<http://www.verkeerenleefomgeving.nl>



Response to Stakeholder Consultation – Euro 5 Emission Limits for Light Duty Vehicles

Summary:

Volvo supports the comments provided by ACEA on the Commission draft proposal for future Euro 5 emissions limits. These comments are included below as a summary, and also addressed in more detail in the subsequent sections concerning specific parts of the stakeholder consultation document.

Timing

The Commission proposes that the regulation comes into force 18 months after entry into force; this could, depending on the political process, introduce Euro 5 for new type approvals as early as mid 2008. Industry reminds that a 3 year minimum period is required for industrial development and that it has planned along with its supply base to introduce Euro 5 as from 2010 as indicated in the Commission Communication on Incentives early in 2005; earlier pull ahead is not possible. The proposed regulation should confirm January 2010 or 36 months after entry into force of this Regulation (new types and 1 year later for all new registrations), whichever is later. It is imperative that this lead time is maintained following the confirmation of the associated technical requirements (i.e. publication of the complementary comitology Regulation). A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Compression Ignition Measures

The proposed diesel passenger car NO_x limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NO_x after-treatment system is not mature enough to comply with levels lower than 200 mg/km.

ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance protocol due to test measurement and laboratory variability. ACEA does not believe a new method based on particle number would bring any added benefit.

Spark Ignition Measures

The proposed spark ignition NO_x limit of 60mg/km is a 25% reduction against Euro 4. It is widely acknowledged that spark ignition vehicles are already clean and efficient and further measures are unnecessary. A further reduction is not a cost effective measure to improve air quality. The proposed 25% reduction in hydrocarbons (i.e. HC = 75 mg/km) is also an unnecessary and unjustified extra burden on industry in general and specifically for vehicles equipped with DI and CNG engines.

Heavy M1

The Commission proposes to remove the provision for M1 vehicles over 2500kg to meet N1 emission limits. For these diesel engined vehicles, to meet passenger car limits, will either require NOx aftertreatment or, if such technology is not mature, a switch to gasoline engines with an associated negative impact on fuel economy. The majority of these vehicles are designed to have a greater utility and / or off road capability, and this should be part of the requirement. ACEA would support limiting the use of this provision to vehicles designed and equipped to mount 7 or more seats and/ or off road capability. The latter can be defined as per the definitions in the framework Directive. Motor-caravans and other special purpose vehicles should also be included in this provision.

Durability/Compliance

ACEA welcomes the retention of in service emissions testing at 100,000 km or 5 years. The draft proposal extends durability to 160,000 km. A durability demonstration is mentioned, the detail of which is unclear and open to interpretation. There is no justification for further regulation in this area and as such this provision should be deleted.

1. Explanatory Memorandum

With reference to the “preliminary draft proposal for a Regulation of the EP and Council relating to the emissions of atmospheric pollutants from motor vehicles (Euro 5)” recently published on the DG ENTR web-site, ACEA would like first to address the comments made in the explanatory memorandum, with reference to the following subjects:

- Split level approach
- Clean Air for Europe (CAFE)
- Compression Ignition Measures
- Spark Ignition measures
- Particle number measurement
- Durability
- Heavy Passenger Cars

Split level approach

Although the reasons for the new regulatory approach (the split-level approach) described in section 2 are understood, it is not absolutely clear which details will be included in which of the two documents i.e. the co-decision and the comitology proposals. It is therefore difficult to comment on any omissions from this preliminary draft proposal without seeing a draft of both proposed Regulations. ACEA believes that the rules under which the split approach will operate should be defined in advance.

The process of development of this new legislation must be conducted for both proposed Regulations in parallel.

Clean Air for Europe (CAFE)

The explanatory memorandum states in the last paragraph of section 3:

“The “Clean Air For Europe” (CAFE) programme provided the technical basis for the preparation of the Thematic Strategy on air pollution. CAFE assessed emissions, current and future air quality and the costs and benefits of further measures to improve air quality”.

On this basis, the Commission will identify the measures which are required in order to attain the necessary air quality levels. Euro 5 is one among several such measures that are important to reduce NOx and particulate matter emissions. “

In fact, due to the delay in the availability of cost and effect data from DG Enterprise, DG Environment was forced to use data from another source very late in the process. These data have been shown to be incorrect and have resulted in major underestimation of costs for further vehicle measures. Furthermore, due to the time pressure, there has been no proper cost-effectiveness analysis with respect to road transport measures as only one set of assumptions for vehicles has been used for all scenario runs.

The automotive industry has been supportive of the CAFE process in the belief that proposals supported by solid facts would be accepted by the other EU institutions without delay. ACEA urges the Commission to update the Thematic Strategy on Air Pollution by including additional vehicle scenarios with the costs agreed by the DG ENTR panel and to take this update into account in redrafting the Euro 5 proposal.

Compression Ignition measures

The proposed diesel passenger car NOx limit of 200mg/km is a 20% reduction against Euro 4. Whilst this is described as a small reduction in the explanatory memorandum, nevertheless it is a significant task. The status of NOx after-treatment system is not mature enough to comply with levels lower than 200 mg/km. Furthermore, there is a trade off between NOx emission levels and fuel consumption.

ACEA confirms that a PM = 5 mg/km limit will force the fitment of diesel particle filters (DPF). The testing to this limit in service requires an in depth review of the in-use compliance test protocol due to test measurement and laboratory variability even with the draft new PMP mass measurement method as the quality control for the test facility may be outside the control of the vehicle manufacturer.

Testing for these technologies requires much extended test duration by nature of the regeneration process compared to non-regenerating technologies; the development and certification workload is therefore significantly increased for manufacturers and the technical services regardless of limit for these technologies.

ACEA notes the document refers to the need to recalibrate the PM mass emission limits set out in this proposal when the new measurement procedure is implemented. The correlation of the two methods will require a European study across a number of different laboratories using a wide range of vehicles. This type of exercise is not planned within the PMP activities.

Spark Ignition measures

In section 4, the first paragraph states:

“The main aspect of this Regulation is that it requires a further tightening of vehicle emission limits for NO_x and particulate matter.”

The proposal then goes on to reduce the limit for hydrocarbon and NO_x emissions from vehicles with a positive ignition engine by 25 %, which is definitely not a minor step.

The Auto Oil II program findings and CAFE do not support any further reduction of hydrocarbon emissions on account of air quality. No gasoline scenario was identified as maximum technical feasible reduction scenario.

The major challenge, which engineers are facing today, is improving the fuel consumption of positive ignition engines. This is a sine qua non objective for meeting the commitment on CO₂ emission reduction, whilst these vehicles contribute to less than 10% of the total road transport NO_x emissions.

Lowering NO_x emissions hinders lowering fuel consumption at the same time. The proposal is in contradiction with the principle that new policy proposals are to be assessed in terms of their consistency with existing and other pending measures (ref. CARS-21.Rev. 1 prepared by the SHERPA group and agreed on 4 July).

Lowering total HC emissions will impose an unattainable burden to CNG vehicles against the 5% substitution target of the Commission communication on alternative fuels (Nov 2001). As a matter of fact, if the HC reduction is confirmed, it will be no more possible to produce and put on the market CNG vehicles. It is also an extra burden for vehicles equipped with a DI lean-burn spark ignition engine.

The proposal to apply a PM = 5mg/km limit to lean burn direct injection spark ignition (DISI) may force the costly fitment of filters to such vehicles. This fuel economy technology is not mature and requires more time to meet such a limit.

Particle number measurement

Also in section 4, paragraph 4 states:

“To prevent the possibility that in the future open filters are developed that meet the new particulate mass limit but enable a high number of ultra fine particles to pass, it is foreseen to introduce at a later stage a new standard limiting the number of particles that can be emitted. At the moment, it is not appropriate to define a number standard as research is being conducted at the UN/ECE - the Particulate Measurement Programme (PMP) - and is still examining this issue. Once the results of the PMP programme are available, a number standard will be implemented through Comitology.”

Previous stages of the UN/ECE PMP have demonstrated the correlation between particle mass and particle number, thus negating the justification for the enormous cost of introducing a particle counting requirement throughout the type approval and conformity systems. This correlation is also recognized in the proposed Regulation which states in a footnote to Table 1:

“The standards would be set so that they broadly correlate with the petrol and diesel mass standards.”

ACEA will comment further on the subject of particle count in the response to the relevant proposed Regulation when it is published. This subject is however under discussion within the UN-ECE and such investigations should not be doubled.

Durability

The penultimate paragraph of section 4 states:

“A further change is the proposal that the durability period over which manufacturers must ensure the functioning of pollution control devices has been extended from 80,000 km to 160,000 km. This change is to more realistically reflect the actual life of vehicles and ensure that emission control systems continue to function throughout the life of the vehicle.”

The **160,000 km durability requirement** introduces an additional, impractical burden not evaluated within the Thematic Strategy on Air Pollution. A durability demonstration at the time of type approval is mentioned, the detail of which is unclear and open to interpretation. Additionally, this is equivalent to further tightening of the standards in a non-transparent way as the air quality and cost-effectiveness models are unable to take account of such scenarios.

Heavy Passenger Cars

The final paragraph of section 4 states:

“A final aspect is the removal of the exception in previous legislation which enabled heavy passenger vehicles (Class M1, over 2500 kg) to be type approved as light commercial vehicles. There is no longer seen to be any justification for this exemption. “

ACEA believes that there are vehicles of category M1 that certainly justify the same considerations which apply to light commercial vehicles.

The first group is vehicles with 7 or more seating positions. These vehicles fill the social needs of large families (they provide an environmentally attractive alternative to the use of 2 “normal” passenger cars) and of dedicated transport functions e.g. shuttle buses, minibuses, large taxi cabs. The packaging of 7 or more seats however necessitates the design of a heavier and often higher and/or wider vehicle with specific gearing, and hence slightly higher emissions. Motor caravans and other special purpose vehicles (e.g. ambulances, first-aid) also need to be considered under the same argument.

The second of these groups is off-road vehicles with a maximum mass of more than 2,5 tons. These vehicles are an essential tool in rural communities throughout the world as well as for rescue and recovery services, public utility companies and many other essential applications and thus their specific needs are accounted for in many of the world’s major legislative systems. A definition already exists in the Framework Directive which requires approach, departure and ramp angles as well as ground clearances that are greater than those employed on standard cars. Compliance with these requirements, all of which are essential to off-road usage, along with the additional drive train losses of four wheel drive and often a secondary transmission, produces a vehicle with higher total loading, physically larger size akin to light commercial vehicles and hence again slightly elevated emissions.

The segment volumes of these vehicles are very low and the slightly elevated emissions if given the same provisions as light commercial vehicles (LCV) are negligible in terms of the overall traffic emissions and hence impact on air quality. Such measures can not be evaluated in air quality models as they would fall well below the sensitivity threshold.

If the above 2 groups are not considered in the same way as light commercial vehicles, this would demand either NO_x aftertreatment technology (not currently technically feasible) or a switch to gasoline versions of these products, with a corresponding detrimental impact on fuel economy and CO₂ emissions. Costs of NO_x aftertreatment technology for application in 2010 have already been submitted to the Commission as part of the Euro 5 questionnaire early in 2005.

As the air quality impact is negligible and the costs are substantial (particularly considering the low volume of these products), this measure can not be justified on an air quality basis.

2. Proposed Regulation

Moving on from the explanatory memorandum to the text of the proposed Regulation, ACEA addresses the following issues

- Scope
- Application Dates
- OBD service information
- Particulate number measurement
- Table 1: scope

Scope

Article 2 states that *“this Regulation applies to all motor vehicles with positive ignition engines and ..”*.

Article 5, section 3, which appears to replace section 5.2 in Annex I to Directive 70/220/EEC as latest amended (also summarized in Figure I.5.2.), then lists the requirements the vehicles must comply with to obtain type approval.

The proposed Regulation however does not contain the **Maximum Vehicle Weight limit of 3500 kg** that has been a part of European Emissions legislation since 1983 (M vehicles with a positive ignition engine with a total mass higher than 3500 kg have to comply only with Type II, idle CO, and Type III, crankcase emissions, tests). Although the category N1 is itself limited to 3500 kg, category M or M1 are unlimited. In practice the vast majority of passenger cars have maximum technically permissible masses well below 3500 kg but there are a very small number of specialist vehicles above this limit (e.g. armored vehicles). Some types of special vehicles are exempted from the requirements of the framework Directive and ACEA does not see any logic in introducing the potential confusion of including these vehicles in the future emissions legislation. It is also unclear which requirements would apply to CNG buses, today covered by Directive 88/77/EEC.

OBD service information

Article 4, paragraph 3, states "...This OBD related information will be made available on a non discriminatory basis to any interested component, diagnostic tool or test equipment manufacturer and/or repairer". Similar wording can already be found in the Block Exemption Directive and should not reappear in this proposal.

Application Dates

Article 6 includes the **introduction dates** of the proposal. An 18-month lead-time from the entry into force of this new Regulation is not sufficient since bringing a known but new technology into full production requires at least 3 years.

The proposed regulation should confirm January 2010 as date of entry into force of the new requirements for new vehicle types or impose 36 months after entry into force of the Regulation, whichever is later. A 1 year extension for Commercial vehicles to 2011, in line with previous legislation is required to handle the significant workload for the manufacturer and the certification authorities.

Following the initial process of adaptation/development, manufacturers require two complete iterative cycles of summer and winter testing with sufficient time in between for implementation and validation of changes. Finally, the type approval process requires between 6 and 9 months to complete.

Industry has planned along with its supply base to introduce Euro 5 at 2010; as also indicated clearly in the Commission communication on Incentives which was published early in 2005. Vehicle model changes and the associated production line rebuilds have already been scheduled. Earlier pull ahead is not possible given the short time between now and the mandatory application of Euro 5. Additionally, model cycle plans would thereby be significantly shortened for the preceding specifications, so driving unit cost upwards (lower number of units over which to amortize fixed costs).

When a major new engine emissions programme is Type Approved – it means not only redoing the emissions Approval, but many other Approvals could be affected such as:

- *EMC/RFI,*
- *Noise,*
- *Fuel economy / CO₂,*
- *End of Life (Bill of Materials)*
- *Power*
- *Smoke*
- *Masses and Dimensions including gradability checks*
- *Fire risk prevention*
- *Crash (frontal / side)*

These Approvals may need to be updated, depending on the extent of the changes, this can be done either as a paperwork exercise or with completely new testing. Again, this places additional resource burdens on the Manufacturer and the Type Approval Authority.

Additionally, the same dates of entry into force for M₁ and N₁ vehicles class II and III will impose a burden to type approval authorities which have limited resources for the review of the extensive documentation needed to grant type approval for each of the many different vehicle types presently offered on the market.

Article 9 section 2 attempts to give a 3 month grace period between implementation of the measures of the Regulation and their application. The proposed text however states: *"If the adoption of the implementing measures is delayed beyond [18 months after the date of adoption of this Regulation] the dates mentioned in Articles: 6 (2), 6(3), 12(1) and 12(3) shall be replaced by a date 3 months after entry into force of these implementing measures."*

The lead-time for the entry into force of any new requirement should in reality be based on the date of entry into force of the comitology Regulation, which complements the co-decision Regulation, since the stringency of the requirements and the measures that have to be adopted depend on the test and enforcement protocols

Particulate number measurement

"Whereas" (13) states:

"In order to ensure that emissions of ultra fine particulate matter (PM) are controlled, the Commission should also give consideration to the adoption of a number based approach to emissions of PM, in addition to the mass based approach which is currently used."

But, the table of limit values in Annex I already contains a column for Number of Particulates. Furthermore, the heading of this column refers to a footnote which reads: *"In the absence of a number standard, manufacturers should collect the PM number data and make these available at type approval. This shall be done according to the procedure referred to in Article 9."*

As the Commission is merely considering a number standard, no provision needs yet be made for its inclusion in the legislation. Regarding the above mentioned data collection, the automotive industry currently knows of no accepted and practical measurement method or calibration procedure (Article 9 refers to the introduction timing of the Regulation).

Table 1: scope

The first row of limit values in Table 1 is headed Category M. As the scope of this Regulation should only cover M1 (and by manufacturer's request M2), this row heading should be corrected to read M 1.

3. General Comments

Finally, ACEA has some general comments regarding the **development and consultation process** being employed for this legislation. Until recently, DG ENTR has always developed new proposals concerning emission requirements within the Motor Vehicle Emission Group (MVEG), the expert group involving national delegations, industry associations and NGOs. This was not the case this time.

The above approach allowed an in-depth review of the data which supports the setting of new emission limit values and discussions on many other technical aspects of the new requirements beyond their feasibility and costs such as dates of

implementation for the different vehicle categories, lead-time, the impact on other community objectives and the consequence of the extension of certain requirements to vehicle categories not covered in the past.

Pre-discussions within MVEG would also allow Member State experts to be better informed on the Commission's objectives and the details of its proposal well ahead of the debate at Council level.

Finally, the process leading to this draft proposal does not seem to be in conformity with the better regulation principles and the need to improve the competitiveness of the EU motor vehicle industry as presently discussed under the CARS 21 initiative.

2005-09-09

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Ihr Zeichen, Ihre Nachricht vom
BMLFUW-UW
1.4.9/0026-V/5/2005

Unser Zeichen, Sachbearbeiter
VIP/56905/Eb/La
Dr. Stefan Ebner

Durchwahl
4028

Datum
30.08.2005

EURO 5 Abgasstandards für PKW - Konsultation der EU-Kommission, Stellungnahme

Sehr geehrte Damen und Herren!

Wir danken für die Übermittlung des (vorläufigen) Entwurfs eines EU-Richtlinien-Vorschlags für die Definition der Euro 5-Abgasnormen für Pkw und nehmen dazu wie folgt Stellung:

Die EU-Kommission kam mit der Vorlage eines Entwurfs einer langjährigen Forderung der betroffenen Branchen nach, endlich einen Vorschlag für (umweltfreundlichere) EURO 5-Normen bei Pkw vorzulegen.

Die Initiative der EU-Kommission, mit den strengeren EURO 5-Standards die Grenzwerte für den Ausstoß von Abgasen (Schadstoffen) bei Pkw und leichten Nutzfahrzeugen weiter zu senken, setzt erfolgreiche Aktivitäten seit etwa 15 Jahren fort, die Umweltfreundlichkeit von Kraftfahrzeugen zu verbessern, und wird daher begrüßt.

In Mittelpunkt des Interesses stehen vor allem die Grenzwerte für Diesel-Pkw. Der vorläufige Entwurf der EU-Kommission sieht vor, bei Dieselmotoren den Partikelausstoß von 25 mg/km auf 5 mg/km, sohin um 80 %, und bei Stickoxiden (NOx) von 250 mg/km auf 200 mg/km, sohin um 20%, zu senken. (Beim Partikelausstoß entspricht der geplante Grenzwert den Vorgaben des in Österreich seit 1. Juli 2005 geltenden Bonus-Malus-Systems bei der NoVA.)

Die Absenkung ist auch im Zusammenhang damit zu sehen, dass die Schadstoffemissionen bisher bereits beträchtlich gesenkt werden konnten. ZB senken EURO 4 Fahrzeuge den Ausstoß von Partikeln um 86,1 % im Vergleich zu EURO 1.

Im gewerblichen Personenverkehr sollte aufgrund hoher Fahrzeugaustauschraten eine baldige (bzw vorzeitige) Flottendurchdringung gewährleistet sein. Zur Unterstützung der Flottenerneuerung sollten entsprechende Förderungen vorgesehen werden.

Die europaweite Absenkung der Grenzwerte sollte auch dazu beitragen, restriktivere Beschränkungen im Verkehr (mit meist nur lokaler Wirkung) zu vermeiden (Tempolimits, Fahrverbote).

Die EU-Richtlinie wird auch insofern begrüßt, als sie dazu beiträgt, nationale Alleingänge zu verhindern und einen EU-weiten Gleichklang herzustellen. Von besonderer Bedeutung ist das Prinzip, wonach dem Hersteller völlige Wahlfreiheit zugestanden wird, technologische Möglichkeiten zu wählen bzw Senkungspotentiale zu nutzen.

In zeitlicher Hinsicht muss den Herstellern und Zulieferern eine hohe Berechenbarkeit (Planungssicherheit) bezüglich der künftigen Anforderungen sowie der ökologischen und technischen Machbarkeit der neuen Wirkvorschriften zugestanden werden. Daher ist es erforderlich, dass die geplanten Grenzwertstufen mit ausreichender Vorlaufzeit bekannt gegeben werden.

Wie bisher sollte auch diesmal ein 5-Jahres-Zeitraum vorgesehen werden. Die im vorliegenden Entwurf vorgeschlagene Vorlaufzeit von 18 Monaten (zwischen der Annahme von Euro 5 und der Durchsetzung) wäre auf 36 Monate zu verlängern.

Auch bei der späteren Einführung von Euro 6-Standards sollte ein entsprechender Zeitraum für die Vorbereitung sowie das Inkrafttreten vorgesehen werden. Daher sollte das EU-Gesetzgebungsverfahren für EURO 5-Abgasgrenzwerte für Pkw rasch gestartet bzw abgeschlossen werden.