AEGPL response to Commission's consultation

Strategy to reduce CO_2 emissions from cars

Brief presentation of AEGPL

AEGPL (European Liquefied Petroleum Gas Association) represents **24 national LPG associations in Europe**.

Our association is also composed of the major **LPG equipment manufacturers** and **distributors** in Europe contributing -through the manufacture and equipment of LPG fuelled vehicles- to the **improvement of human health and the environment** in Europe.

Basic figures about LPG-fuelled vehicles:

LPG is the **largest alternative fuel** in EU-27 (4,530,000 vehicles, mainly passenger cars, and 22,500 filling stations) and at worldwide level (13.5 million vehicles).

LPG-fuelled vehicles emit **12% less CO_2 than petrol** cars through the "Tank-to-Wheels" cycle. The 4.5 Million vehicles currently running on LPG in Europe represent at least **1.4 Million tons of CO_2 savings on a yearly basis**.

The LPG-fuelled car industry has a **significant growth potential.** Industry estimates suggest that LPG-fuelled cars could grow from the current share of 2% of the market to approximately 10% of the stock of vehicles by 2030, with at least 25 million light duty vehicles, meaning an average growth rate of 7.82% p.a.

1. Introduction

Climate Change is an undisputable fact that we all have to fight against. AEGPL is fully committed to delivering the greatest possible contribution to this essential goal, through a constructive and realistic approach.

In this context, AEGPL agrees with the specific target and the timeline set by the Commission in its Strategy. AEGPL also supports the market-oriented approach taken by the Commission to reach its objectives.

Nevertheless, AEGPLestimates that the scope for action outlined by the Commission does not integrate all possible solutions.

AEGPL believes that when addressing the possible technical measures to be taken on the supply side, the Commission does not fully recognize the immediate CO_2 emission reduction provided by alternative gaseous fuels.

More specifically, as the European Commission encourages the "increased application of biofuels" among the measures envisaged for the existing car fleet, AEGPL does not see any reason not to also encourage the use of other alternative fuels, such as gaseous fuels, in the same manner.

AEGPL calls on the Commission to integrate the following elements in the forthcoming piece of legislation:

- Recognition of alternative gaseous fuels as an option for car manufacturers to achieve CO_2 reduction;
- Active support for the use of incentives -fiscal/financial for instance- at Member State level for cleaner vehicles.

AEGPL considers that the introduction of these provisions would not be in contradiction with the "technologically neutral approach" outlined by the Commission in its impact assessment.

Indeed, the suggested measures do not represent any specific promotion of a given technology, but the fair consideration of an immediately available option as a path for reaching the proposed goals.

In addition, these measures would be in line with the conclusions of the Transport Council held on 6-8 June 2007, in which EU Ministers have called for "the increased use of alternative fuels" as one of the essential elements in the way forward to reduce the transport sector's effect on climate change.

AEGPL firmly believes that LPG-fuelled vehicles are perfectly compatible with the general and specific objectives of the EU Strategy, and therefore constitute a valid and cost-effective option for car manufacturers to comply with the requirements for 2012 and beyond.

2. LPG-fuelled cars contributions to the Commission's objectives

General objectives:

- **Provide a high-level of environmental protection:**

AEGPL fully agrees that negative impact on the environment in general, and on air quality in particular are among the most important effects of vehicle emissions on the daily life of millions of EU citizens.

LPG-fuelled vehicles contribute to significantly improving this situation. They are particularly advantageous in urban areas, where noxious and particulate matter (PM) emissions affecting human health are generating socially and economically unacceptable costs. The 2003 EETP, European Emission Testing Programme[1], showed that:

- As regards NOx, vehicles running on LPG were 120% to 180% better than petrol and 2000% better than diesel - In other words, one diesel vehicle emits the same quantities of NOx as over 20 LPG vehicles;
- On average, particle emissions from LPG-fuelled vehicles are 99% lower than diesel;
- LPG-fuelled vehicles exhibit very good results on non regulated pollutants (especially oxygenated compounds such as formaldehyde, acetaldehyde…)

As a consequence, in many European cities, cars fuelled by LPG are allowed to circulate even in the most polluted periods, when traffic bans for conventional vehicles are sometimes imposed.

- **Improving EU energy security of supply:**

LPG has substantial reserves due to its dual origins; 66% from gas field extraction 34% from crude oil refining, there are no concerns as to the availability of LPG in the foreseeable future.

The use of LPG also promotes European self-sufficiency as there is an overall balance between Europe's production and consumption of LPG. In addition, LPG imports are geographically diversified, with only 1.7% of Europe's total consumption originated in the Middle East.

Specific objective:

Combat climate change and improve fuel efficiency of light-duty road vehicles by reaching the 120 gCO_2/km target.

[1] EETP commissioned on a range of 26 vehicles running on LPG, petrol and diesel, see Annex 1 attached.

LPG-fuelled cars, by virtue of the particular characteristics (H/C ratio) of LPG automotive fuel, can make a significant and immediate contribution to this objective. They produce fewer CO_2 emissions than traditional fuels, namely gasoline and diesel:

- Tank-to-Wheels savings: An Autogas vehicle emits 12% less CO2 than a petrol car through the "Tank-to-Wheels" cycle. According to Industry estimations the 4.5 Million LPG-fuelled vehicles represent at least 1.4 million tons of CO2 saved per year in the EU2 (although this calculation is based on conservative assumptions, and actual results could be better)3. For instance an originally gasoline-fuelled car emitting 134.4 g / km would emit 120 g / km once converted to LPG at the tailpipe.
- Well-to-Wheel savings: The largely recognized JEC Well-to-Wheel study states that in the 2010 perspective, a medium size LPG-fuelled car should deliver 10% and 15% less CO2 emission than Diesel and Gasoline respectively on its Well-to-Wheels cycle.

In addition, the above mentioned CO_2 offset calculations are based on assumptions of the worst case scenario regarding the LPG WTT pathway. Even on this basis, CO_2 reductions delivered by the use of LPG are significant and certain, while the WTW CO_2 benefits of other alternatives such as biofuels are far more difficult to evaluate.

3. AEGPL position on to the proposed measures

Technical measures addressing new vehicles:

In Europe, LPG-fuelled Light Duty Vehicles are mainly petrol-fuelled vehicles converted to LPG, that is to say not type approved under the European scheme. For brand new vehicles, these operations are undertaken at the national level by or on-behalf of the car manufacturer/importer, before or after registration. For in-use petrol –fuelled vehicles, the retrofitting to LPG is undertaken by a local workshop.

The Commission recognises in its impact assessment document that LPG could be used "as a technical solution under the instrument to promote technical progress in M1/N1 vehicles".

In this sense, AEGPL believes that, among the technical measures addressing new vehicles (M1/N1), any forthcoming legislation should allow manufacturers/importers to take into account the CO_2 data related to the LPG mode when they sell bi-fuelled (petrol + LPG) vehicles.

For a variety of reasons, it is clear that a consumer buying a bi-fuel vehicle will drive on LPG for the quasi-totality of the lifetime mileage, and this for various reasons:

- Significant environmental benefits
- Obvious advantage of fuel price at the pump compared to gasoline
- Large existing network of LPG filling stations,
- Large existing network of professionals responsible for the maintenance of the vehicles

It is therefore logical to use the CO_2 emissions related to the LPG mode when considering these bi-fuel vehicles, even if they are fitted with a gas feeding system on a national type approval basis.

---

[2] Calculation made on the basis of the official average of 162 g / km for new cars sold in 2004 in the EU-27, with a CO_2 offset of 12% per car, each car running an average of 16.000 km/annum.

[3] The CO_2 savings of using LPG rather than petrol are underestimated due to the facts that:

- The Average age of the passenger cars in Western Europe is about 8 years according to the ACEA (amounting to 176 g/km in the EU-15 in 1999);
- Usually, LPG-fuelled vehicles are larger than the average fleet;
- As stated in the "task A" report, the real world emissions could be estimated at 1.195 the type approved CO_2 emissions.

Under a more realistic calculation, savings of CO_2 emissions through the TTW cycle could reach 2 million tons (4,530,000 x 1.1 x 176 x 0.12 x 1.195 x 16.000).

A sound and detailed technical type-approval procedure is already in place for the fitting of gas feeding systems (Regulation 115[4] approved by UN/ECE and recognised by the EU). This regulation sets detailed administrative and technical requirements, providing clear and well established limits for each stakeholder's liability. R115 gives reliable figures concerning CO_2 emissions in LPG/NG mode, facilitating measurability and accountability of such an initiative.

From the perspective of the car industry, the possibility of taking into account LGP-fuelled cars emissions when manufacturing of bi-fuel LPG vehicles will help car manufacturers to meet the CO_2 reduction goal, to comply with more stringent emission standards without extra significant costs and to meet national customers' demand.

Technical measures addressing the existing fleet:

AEGPL firmly supports actions addressing the existing vehicle fleet. As repeatedly stated by car manufacturers, the existing fleet represents the most important potential of CO_2 savings in Europe. But measures in this field should consider all the possible options on an equal footing.

In this sense, AEGPL regrets the uneven application of the "technologically neutral approach" favoured by the Commission. Indeed, this principle applies for certain options (notably LPG or NG-fuelled cars), while it is left aside when referring to biofuels, of which the Commission calls for the "increased application".

The LPG industry does not see any reason not to encourage the use of alternative fuel in the same manner. LPG-fuelled cars represent an immediately available means of reducing CO_2 emissions from cars:

- 12% CO2 immediate tailpipe economy when converting a petrol car to LPG.
- 10% and 15% CO2 offset on a WTW basis compared respectively to diesel and petrol models.

An additional 10 million passenger cars running on LPG would represent a savings of 3.1 million tons CO_2 emissions through the TTW cycle. This opportunity to reduce GHG should not be neglected.

In addition, as the Commission's impact assessment states, any measure of that type will benefit from popular support (within the chapter "general public responses" to the public consultation, the Commission acknowledges that 65% of the consulted public favours the use of alternative fuels as one of the means in order to reduce CO_2 emissions from vehicles) .

Demand/behaviour oriented measures:

CO_2 based taxation schemes for passenger cars:

AEGPL agrees that car taxation is a powerful instrument to influence the purchasing decisions of consumers. A common definition of Light-duty Environmentally Enhanced Vehicle (LEEV) is an essential tool in order to establish incentives for the most efficient class of cars (scheme based on the labelling Directive).

This definition should be based on regulated pollutants, so called Euro standards, and other criteria:

- CO_2 emissions, on both WTT and TTW cycles. The TTW or tailpipe CO_2 emissions are already tackled by the regulations. Regarding the WTT cycle, each low CO_2 emitting pathway could be rewarded by a CO_2 credit or a CO_2 rate offset according to its performance.
- The security of supply criteria should also be considered.

This approach can be more easily developed for the LEEV standard.

[4] Regulation on uniform provisions concerning the approval of specific LPG (liquefied petroleum gases) or CNG (compressed natural gas) retrofit systems to be installed in motor vehicles for the use of lpg or cng in their propulsion system.

Furthermore, CO_2 based taxation schemes will address both new and in-use vehicles by, on one side, promoting the purchasing of CO_2 efficient cars and on the other side, favouring technical measures to offset CO_2 emissions of in-use vehicles. Drivers will have an incentive to purchase and/or convert their cars to a low carbon fuel.

Consumer information (including CO_2 labeling):

AEGPL believes that a labelling scheme is a useful tool to raise awareness about climate change and energy efficiency.

AEGPL supports the widening of the scope of the labelling to include light-duty commercial vehicles as well as the harmonization of the Directive 99/94.

AEGPL position on the options discarded at an early stage:

Excise duty for fuels:

AEGPL supports excise duty policy on a European basis, not as the exclusive measure of policy option but as part of an integrated approach in order to guarantee a fair level playing field for all types of fuel, based on energy efficiency and emissions of GHG and pollutant gases.

In this approach, it is disappointing to note that the favourable treatment of diesel fuel in terms of excise duties has lead to a situation in which the diesel fuel price increased far less than petrol fuel price from 1995-2005 (in the EU 15, automotive petrol and diesel increased respectively by 74% and 54%, all taxes included).

This favourable treatment of diesel could make sense in the partial vision related only to its CO_2 emission through the TTW cycle. However, in a global approach such as the one outlined by the Commission, one should also look at diesel's harmful effects on human health (PM and NO_x pollutant emissions) and its increasingly unbalanced supply landscape.

Mobility/traffic and infrastructure management:

AEGPL welcomes local initiatives/measures to curb congestion problems by means of traffic flow management. In many cities, LPG-fuelled LDV are recognized as low polluting vehicles and benefit from incentives (free above and underground car parking, zero congestion charge, lower insurance costs, no ban …) in order to help solving local air quality problems.

4. Measures initially identified but excluded from the posterior impact analysis

Rejection of any particular measure for promoting LPG/NG vehicles

In the impact assessment accompanying the Strategy, the Commission rejects any specific measure for the promotion of LPG or NG-fuelled cars, on the basis of the work developed with the ECCP stakeholders consulted during the preparatory works for the impact assessment.

This rejection is based on the so-called "Task A" report[5], which discards LPG vehicles from any further analysis as an option for future legislation on CO_2 emissions for the following reasons:

- Poor CO2 offset

[5] "Review and analysis of the reduction potential and costs of technological and other measures to reduce CO_2 emissions from passenger cars", final report, Contrat n° SI2 408212 by TNO for DG Enterprise and Industry, October 2006

- Poor growth potential
- Use of LPG mainly as a feedstock
- Use of LPG increases Europe's dependence

AEGPL regrets that such an analysis of the performance and possibilities of LPG-fuelled cars has been undertaken without having consulted the concerned industry. AEGPL estimates that the arguments used to reject the evaluation of LPG-fuelled cars' potential and some actual facts do not fully take into consideration the reality of the sector.

- **LPG-fuelled vehicle provides an interesting CO_2 performance:** As stated in the "Task A" report, LPG-fuelled vehicles emit 15% less CO_2 than petrol-fuelled vehicles on the WTW cycle (not so far from 16.7 % CO_2 gain of NG-fuelled vehicles). Despite of this small difference, the "Task A" report does not take into account LPG-fuelled cars. AEGPL does not see a reason for such unbalanced consideration.
- **The Automotive LPG has the potential for a significant increase:** LPG-fuelled car share currently amounts to 2%, and industry estimations foresee a significant growth potential - up to at least 10% - of the same magnitude as the other alternative fuels identified in the Commission's Communication from the on alternative fuels for road transportation[6];
- **LPG is used in several sectors:** According to the World LP Gas 2006 statistical review, the refinery and chemical sectors represent only 28% of the LPG consumption worldwide (30% for Europe & Eurasia).
- **The use of LPG favours Europe's energy diversification:** As already stated in page 2, LPG promotes European self-sufficiency. The "task A" report states "increased use of LPG (…) increases Europe's dependence on energy from the Middle-East". This is clearly contrary to the current and forecasted situations. Europe, EU 27 plus Norway, imports and exports in balanced volumes. In what regards imports, the LPG market enjoys a diverse set of supply sources. In addition, in 2005, only 1.7% of Europe's total LPG consumption came from the Middle East.

Rejection of public procurement

Although the public procurement measure has been discarded, AEGPL nevertheless wishes to express its support for any green public procurement scheme based on a common definition of LEEV. Initiatives of this kind represent a useful tool to encourage the purchasing of the most efficient class of LDV.

Nevertheless, the strong emphasis on CO_2 emissions should not unbalance the necessary reduction of pollutant emissions (NO_x, PM, HC…), which should also be taken into account for environmental and health reasons.

5. Conclusion

AEGPL considers that LPG-fuelled vehicles represent a valid and feasible solution to today's challenges, as they can provide the following economic, social and environmental benefits:

- **Environmental aspects of LPG-fuelled vehicles:**
  - Significant CO_2 savings
  - Efficient means of upgrading cars to cleaner emission standards
- **Economic aspects:**
  - Possibility of helping car manufacturers to cope with EU goals (both CO2 target and EURO 5/6 emission standards) without major costs

[6] COM(2001)547 of 7 November 2001

- Current EU leadership on the design and development of alternative fuel systems (important potential to further develop our expertise and exports to emerging markets)
- Maintenance and development of an SME network to convert, maintain LPG-fuelled vehicles, providing local income, VAT…

- **Social aspects:**
  - Solution readily available and easy to implement
  - Promotion of small businesses locally-installed throughout Europe, not subject to relocation
  - Wide range of vehicles available, and most vehicles in the market can be converted to LPG (Customer-friendly option)
  - Low operating cost for consumers (maintain the purchasing power of low income families)
  - Very good track records on safety, with a robust scope of regulations (at EU and UN levels)
  - Contribution to EU's security of supply

The European LPG Association

agrees with the objectives set by the Commission, and:

- **Calls on the Commission** to allow car manufacturers selling bi-fuel (LPG-gasoline) vehicles to base their CO_2 emissions declaration on LPG-type CO_2 levels;
- **Calls on the Commission** to provide equal treatment for all alternative fuels (biofuels and alternative gaseous fuels), by issuing a specific legislative initiative for LPG and NG-fuelled cars;
- **Invites the Commission** to tackle emissions from the existing car fleet by promoting CO_2-based fiscal measures (for instance, yearly circulation tax, excise duty on fuels, etc);
- **Supports the introduction** of the Well-to-Tank approach when developing the EU LEEV standard;
- **Stresses the importance** of maintaining the general goal of a high level of environmental protection in any forthcoming legislation on CO_2 emissions, considering all pollutants emitted by light-duty vehicles.

For further information, please contact:
Patrick Segarra
Director General
Tel. +32 (0)2 566 91 20
E-mail: patrick.segarra@aegpl.be