

AEGPL position paper on regulatory options for road transport decarbonisation

AEGPL, the European LPG Association, welcomes the opportunity to share, with European institutions, its views on regulatory options for road transport decarbonisation.

In this paper, AEGPL voices additional suggestions to ensure that the scope for action incorporate all possible solutions to curb emissions from transport. Indeed, we believe that the European Commission does not fully recognise the role of alternative fuels, including LPG used as transport fuel, also called Autogas.

AEGPL calls upon the European institutions to:

- Fully recognise the potential of alternative fuels as options for car manufacturers to achieve CO₂ reductions, alongside engine efficiency improvements. Alternative fuels should be understood as already defined in Directive 2014/94/EU on the deployment of alternative fuels infrastructure.
- Introduce measures to promote all alternative fuels in the context of the EU decarbonisation legislation. Any measures should apply to all alternative fuels in a technology neutral manner.
- Low-emission vehicles should be defined upon objective criteria, to reward technologies on the basis of their environmental performance without picking “winners”.
- Favour a well-to-wheel approach to transport emissions for a better consideration of the overall environmental performance of each technology (covering the origin and production of the fuel).
- Give consideration to the positive synergies between decarbonisation and air quality and favour solutions which simultaneously address both challenges to ensure a high level of environmental protection for EU citizens.
- Actively support the establishment of incentives (e.g. fiscal, financial and non financial) at Member States level for cleaner vehicles.
- Develop tools to address emissions from the existing vehicle fleet. Currently, many LPG-fuelled vehicles are aftermarket conversions and therefore their contribution to CO₂ reduction is not accounted for by the legislation.
- Support the deployment of advanced technologies for alternative fuels that improve efficiency and reduce CO₂ emissions such as LPG liquid direct injection systems.

AEGPL calls for the fair consideration of LPG as an immediately available option as a path for reaching the proposed decarbonisation goals, in line with the objectives of the Clean Power for Transport Package.

AEGPL believes that LPG-fuelled vehicles are perfectly compatible with EU long-term climate objectives as well as the goals of Regulations (EU) No 443/2009 and No 510/2011 setting CO₂ emission performance standards for light duty vehicles and upcoming reviews, and therefore constitute a valid and cost-effective option for car manufacturers to comply with their emission requirements.

LPG contribution to EU policy 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-fueled 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. Tests in laboratories have proven that Autogas vehicles, in average, emit 96% less NOx than diesel vehicles¹. Contrary to diesel, whose fumes are classified as carcinogenic by the World Health Organisation since 2013, LPG cars generate almost no particulate matters and black carbon (soot). More recently, a research on real driving emissions measured through a portable system showed that Autogas cars emit 9% to 20% less CO₂, 45% less CO, and 90% less small particles than their gasoline equivalents². LPG-fueled vehicles show good results on non regulated pollutants (formaldehyde, acetaldehyde...).

▪ Combat climate change and improve fuel efficiency of road vehicles

AEGPL support the fight against raising temperature and is committed to contributing towards global and EU climate change mitigation objectives. Autogas vehicles bring benefits in terms of CO₂ emissions:

- Tank-to-Wheels savings: as quoted in the final report on the evaluation of the cars and vans Regulations³, *“while diesel and petrol have similar CO₂ emissions per kWh on combustion, CO₂ emissions from burning gaseous fuels are substantially lower, in the case of LPG around 10-15%”* according to a study by DEFRA (2014), results which are corroborated by industry tests on benches as well as in real driving conditions.

- Well-to-Wheels savings: according to the largely recognised JEC Well-to-Wheel study⁴, used for laying down the calculation methods and reporting requirements of the Fuel Quality Directive⁵, LPG vehicles emit 21% less CO₂ than petrol and 23% less CO₂ than diesel equivalent vehicles on a life cycle basis.

In addition, LPG vehicles emit limited amounts of methane, which is not currently regulated but which is known to contribute to global warming up to 84 times more than CO₂ in the medium term.

We estimate that if Autogas meets 10% of Europe’s transport needs by 2020, it will bring a reduction of European CO₂ emissions by 350 million tonnes⁶. This opportunity to reduce GHG should not be neglected.

▪ Improve EU energy security of supply

LPG has substantial reserves due to its dual origins - 60% from gas field extraction 40% from crude oil refining globally - there are no concerns as to the availability of LPG in the foreseeable future. The use of LPG also

¹ EETP: "European Emission Test Programme" Final report, N.JEULAND – X. MONTAGNE, 2004

² [Abgastests unter realen Fahrbedingungen: Autogas-Pkw im Vergleich mit Benzin- und Diesel-Fahrzeugen, Prof. Dr.-Ing. Thomas Heinze und Oliver Zemborski im Auftrag des Deutschen Verbandes Flüssiggas e. V. November 2016 and V-Motech for CFBP and AEGPL, Test RDE sur des véhicules GPL, Etude des émissions de gaz et particules, 2015](#)

³ http://ec.europa.eu/clima/policies/transport/vehicules/docs/evaluation_ldv_co2_regs_en.pdf

⁴ <http://iet.jrc.ec.europa.eu/about-jec/downloads>

⁵ <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L0652&from=EN>

⁶ <http://www.aegpl.eu/media/81922/autogas%20roadmap%202013%20final%20mb.pdf>

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 product coming from North America, Central Asia, Russia, North Africa etc.

- **A low-hanging fruit for tackling transport emissions**

LPG provides car manufacturers with an option to cope with EU goals (both CO₂ target and Euro emission standards) without major investment costs, as the technology is well proven, readily available and easy to implement, and the infrastructure is well developed (with over 30,000 filling stations in the EU). In addition, the European industry is a clear leader in the design and development of alternative fuel systems, and has the potential to further develop our expertise and export it to emerging markets. Finally, LPG implies the safeguarding and development of an SME network to convert, maintain LPG-fueled vehicles, providing income and employment at local level.

- **Tackle transport emission in a socially-equitable manner**

Autogas vehicles participate to the promotion of small businesses locally-installed throughout Europe, and not subject to relocation. From a consumer perspective, there is a wide range of vehicle models available from car brands throughout Europe, and most vehicles in the market can be converted to LPG, which is a customer-friendly option.

Most importantly, driving on LPG provide drivers with limited operating costs, in comparison with traditional fuels but also many other alternative fuels. In particular, Autogas costs is in average more than 50% lower than petrol or diesel in the EU. LPG can therefore bring substantial emission reductions while maintaining the purchasing power of low income families.

Other suggestions for action

- **Consumer information and labelling**

AEGPL strongly believes that information to consumers is key to develop more sustainable purchasing decisions. Better informed consumers can play a role in promoting a switch to cleaner fuels and to decarbonise the transport sector. An effective labelling system has the potential to encourage car manufacturers to invest in efficiency improvements as well as in the development of sustainable alternative technologies. AEGPL calls for the expansion of the scope of the car label to include NO_x and PM emissions as well as running costs (e.g. € per kilometre). The CO₂ value indicated on the label should reflect lifecycle emissions, i.e. emissions at all stages therefore including the emissions related to the production and distribution of energy sources in addition to the cars' tailpipe emissions (well-to-wheel approach) for all technologies. We also consider that car labels should be made obligatory for second hand cars, since used cars' sales make up a considerable share of overall car sales. In order to make the label more effective, it is crucial that marketing campaigns aimed at increasing its awareness are delivered on both traditional and electronic media.

- **Measure to tackle emissions from the existing vehicle 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 CO₂ savings in Europe. But measures in this field should consider all the possible options on an equal footing. LPG fuelled cars represent an immediately available means of reducing CO₂ emissions from cars as explained above.

▪ **Promotion of alternative fuels in the context of the monitoring and regulation of CO₂ emissions from heavy-duty vehicles**

Switching to alternative fuels are one of the solutions to reduce transport emissions in the heavy duty sector as well. For buses and trucks, there are technologies allowing for the substitution of a proportion of diesel by LPG. This diesel/LPG mix technology (dual fuel) can offer up to 10% reduction in CO₂ emissions approximately, which is non negligible, in addition to significant benefits in terms of pollutant reductions, and NO_x in particular. Conversion kits are being developed while harmonised technical prescriptions are currently being negotiated at UNECE level. The vehicle modification is rather cost-effective, an investment which is paid back through lower fuel costs (LPG is in average 50% cheaper than petrol and diesel). While this market is currently emergent, diesel/LPG dual fuel options for the heavy duty segment offers great opportunities for the future, and therefore should be properly considered in future regulatory development addressing CO₂ emission from trucks and buses.

Additionally, it is technically possible to have heavy-duty vehicles running 100% on LPG. Several projects are being developed in this field, in particular for buses, responding to a growing demand from local councils in a context of air quality plans implementation. Boosting the introduction of this technology in the market could contribute to higher rates of CO₂ emission reduction with Autogas.

Background - LPG market in Europe

Automotive LPG, also known as Autogas, is Europe's most widely used alternative fuel in the transport sector. With 7,800,000 vehicles already running on Autogas, serviced by a filling station network of over 30,000 sites in the EU, Autogas offers an alternative to conventional fuels⁷. LPG today represent approximately 3% of the EU total passenger cars fleet, according to the European Environmental Agency. European drivers can choose their LPG car among over 90 models, proposed by the biggest car brands (Opel, Ford, Dacia, Fiat, Hyundai etc) with full manufacturer warranty and other benefits. While Autogas is mainly used in the passenger cars segment in Europe, it offers some opportunities in the commercial and heavy duty segments as well.

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About AEGPL (The European LPG Association)

AEGPL is the sole representative of the LPG industry at European level, representing national LPG Associations as well as distributors and equipment manufacturers from across Europe. Our mission is to engage with EU decision-makers and the wider policy community in order to optimise the contribution that LPG - as a clean

⁷ Argus Media, Statistical Review of European LPG, 2015

and immediately available energy source - can make to meeting Europe's energy and environmental challenges.