

The Great Fuel Consumption Scam

BEUC position paper on improving fuel consumption testing of cars in the EU

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Summary

Existing European rules and regulations concerning the testing of a car's fuel consumption are massively open to abuse. This is because there are great flexibilities, we call them loopholes, that car manufacturers can exploit and provide claims about a vehicle's fuel consumption and carbon footprint that do not reflect what consumers observe on their car's fuel meter when driving under real life conditions.

The EU has an opportunity to implement a new testing protocol, the Worldwide harmonized Light vehicles Test Procedure (WLTP) and have it operational for 2017. This would be a good step however other measures are also needed to provide prospective car buyers from across Europe with more reliable and easily understandable information. A holistic approach is needed, particularly when the wider goals of EU energy and climate policy are concerned, and when considering the importance of restoring trust amongst consumers.

KEY RECOMMENDATIONS

- **The WLTP should be swiftly adopted under EU law and operational by 2017 in order for consumers to have a more realistic picture on fuel consumption.**
 - **A scaling factor should be applied to convert test cycle emissions to real world emissions.**
 - **The creation of an EU-wide type approval authority is needed to ensure more coherent testing standards and procedures are applied across the EU.**
 - **Conformity checks must be carried out by national authorities on production vehicles both before sale and once in use. If the results of tests differ significantly from the type-approval vehicles, the manufacturers should revise their claims appropriately.**
 - **The 2021 CO₂ targets for passenger cars should be modified to represent WLTP test results. This process should not water down the 95 g/km target or delay the implementation date of the WLTP. To make the process more transparent, it should be subject to regular EU legislative procedure.**
 - **For those countries that already correlate the car tax base to emissions, the tax levels need to be adapted as soon as the WLTP is applied.**
 - **At a national level, those Member States who do not correlate tax base to emissions should further explore and implement car taxation schemes that effectively reward consumers for investing in low emissions vehicles.**
 - **The car labelling Directive must be revised in order to provide consumers with better information at the point of sale and in all advertisements.**
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Introduction

Currently, in order to determine the fuel consumption values and CO₂ emissions of new passenger cars, manufacturers must use a testing protocol known as the New European Driving Cycle (NEDC). The NEDC was originally developed in the 1970's as a means to test Nitrogen Dioxide emissions in urban areas but has subsequently been amended to measure fuel consumption and CO₂ emissions. However, the NEDC has not been modified in order to recognise driving behaviour in the modern day and the technological advances made in the automobile sector. Consequently, consumers receive incorrect information about the fuel consumption of their cars which is not in line with real world driving figures.

The NEDC also includes several requirements that are unsuitable for the purpose of testing cars in Europe and under the testing procedures there are enormous loopholes that can be exploited by car manufacturers, as highlighted in numerous studies by consumer organisations across Europe and by other motorist groups, environmental NGOs and independent research bodies¹. In 2014 Altroconsumo, the Italian consumer organisation and BEUC member, published its findings concerning an investigation into the NEDC and which highlighted the loopholes of the test procedures (See box 1 and image 1).

In this paper, we outline a number of key measures that are needed to improve the testing of a car's fuel consumption and CO₂ emissions and the way in which the information is presented to prospective car buyers. The paper gives detail on: an alternative test procedure (the Worldwide harmonized Light vehicles Test Procedure (WLTP)) and its date for implementation; further safeguards that are needed to ensure against unreliable test results; our opinion on modifying existing fuel economy/ CO₂ targets; changes to national car CO₂ tax bands; and ways to improve car CO₂ labelling.

Finally, we are particularly concerned about the level of progress as regards the legislative process for adopting the WLTP under EU law. It was initially envisaged that a proposal by the European Commission would be delivered by the end of 2014. Evidently this deadline has now passed. If the WLTP is to become operational in 2017 it is critical that a strong proposal is made in 2015 in order to allow for a reasonable period of time before implementation.

¹ For more information see the following resources provided by the ICCT, the AA and T&E:
http://www.theicct.org/sites/default/files/publications/ICCT_LabToRoad_20130527.pdf
http://www.theaa.com/motoring_advice/fuels-and-environment/official-fuel-consumption-figures.html
http://www.transportenvironment.org/sites/te/files/publications/Real%20World%20Fuel%20Consumption%20v15_final.pdf

Box 1 Investigation into misleading fuel consumption claims

The Italian consumer organisation and BEUC member Altroconsumo were interested in exploring the use of the NEDC. They wanted to explore the ways in which car manufacturers might be influencing the test results. They tested two cars: A Volkswagen Golf 7 1.6 TDI BM and a Fiat Panda 1.2. In order to investigate the effect of the loopholes allowed under the NEDC, a certified testing laboratory performed the same tests that car manufacturers are obliged to perform. The cars were tested under optimal conditions for both low fuel consumption and high fuel consumption.

The declared fuel consumption claims (those published by the car manufacturers) of both vehicles tested were far different from the results achieved during Altroconsumo's tests. Even under test conditions when the fuel consumption² of the vehicles was expected to be at its lowest, the differences between the manufacturer's results and Altroconsumo's findings were significantly different:

- The declared fuel consumption and CO2 emissions of the VW Golf were more than 50% lower than the test results obtained by Altroconsumo.
- The declared fuel consumption and CO2 emissions of the Fiat Panda were more than 18% lower than the test results obtained by Altroconsumo.

For more information, see BEUC's [Q&A on Altroconsumo's investigation](#)

9 tricks for misleading fuel consumption claims

The fuel consumption and CO2 emissions tests that car manufacturers use is not fit for modern day conditions and is based on an outdated test cycle and procedure. Altroconsumo (Italian consumer organisation and BEUC member), performed the same tests that car manufacturers are required to perform under EU law.

For both the Panda 1.2 and the Golf 1.6 TDI, the declared values advertised by both manufacturers indicate a far better level of performance than what was found in Altroconsumo's investigation. This was found to be the case even when Altroconsumo pushed the flexibilities of the test to the very limit. Even taking into account the large margin of flexibility permitted by the law, the fuel consumption of the Fiat Panda tested by Altroconsumo was more than 18% higher, while the Volkswagen Golf was more than 50% higher.

ALTROCONSUMO
Il tuo punto di forza

BEUC The European Consumer Organisation

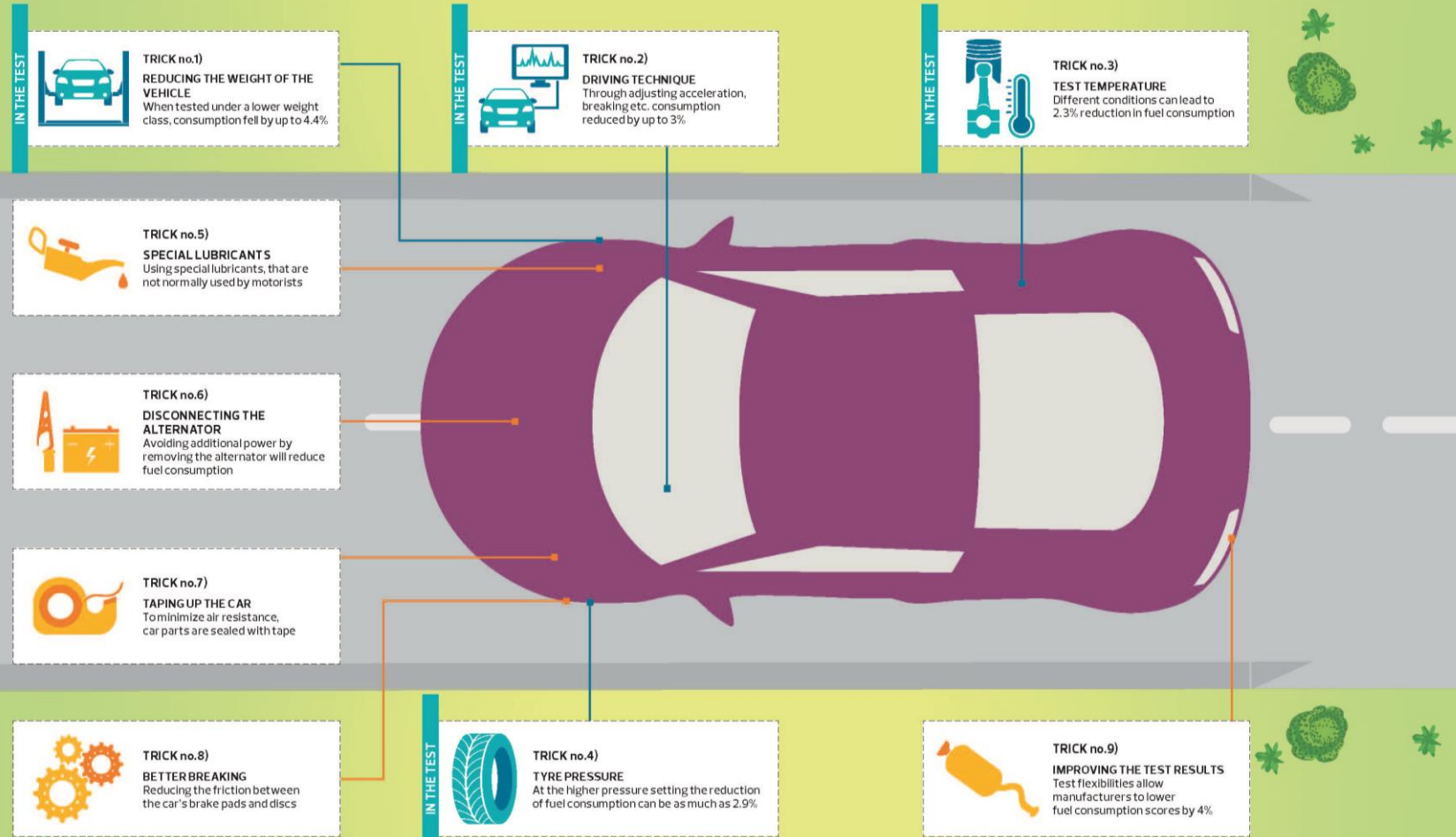


Figure 1 - 9 tricks for misleading fuel consumption claims

There are numerous negative consequences of having an ineffective testing protocol:

- Prospective car buyers are misled by car manufacturers advertising fuel economy performances that cannot be replicated in the real world and are paying far more on fuel costs³ than would be otherwise expected.
- Progressive car manufacturers who are designing the most fuel efficient vehicles are losing out as other suppliers give the illusion of delivering better fuel economy performances.
- Not being able to know the real carbon emission reductions from the automobile sector makes a shambles of understanding the performance of the car industry to cut its carbon footprint and that of European countries themselves. Hence, it undermines EU climate targets.
- In many European countries the CO₂ emissions values of different cars influence the tax band that those cars are under. If the values are not correct for new cars, this means it is impossible to know whether or not the different tax bands are rewarding the most fuel efficient cars, as is their intent.
- Achieving the potential of measures designed to make cars more fuel efficient (and in turn cutting Greenhouse-Gas (GHG) emissions and improving the Europe's energy security) is being diminished as prospective car buyers are more likely to distrust the claims made by manufacturers and in turn buy a car based on other criteria.

How can official fuel consumption testing be improved in Europe?

There needs to be a better and more harmonised testing standard than the NEDC. Fortunately, a new testing protocol, the Worldwide harmonized Light vehicles Test Procedure (WLTP), has been adopted by the United Nations Economic Commission for Europe (UNECE) in March 2014. The WLTP is expected to close many of the loopholes currently exploited by car manufacturers and better simulate real driving conditions, with more modern and realistic driving scenarios (See box 2)⁴. The WLTP must now be introduced into EU legislation as swiftly as possible so this new test can be applied to type approval cars by 2017.

³ Irrespective of present day fuel prices, fuel efficiency is historically a key criteria for prospective car buyers when searching for a new vehicle and make up a significant portion of a car's running costs.

⁴ For more information see the following paper published by the ICCT:
http://www.theicct.org/sites/default/files/publications/ICCT_PolicyUpdate_WLTP_Nov2013.pdf

Although the WLTP could be implemented under EU law now, the rules need to be strengthened and adapted to account for EU specificities. We agree to this approach because the adopted WLTP under UNECE includes some conditions that are not representative of real life driving⁵ in Europe. For instance, enhancing the WLTP should mean that testing considers the use of air conditioning units and that cars are tested in more reflective laboratory conditions i.e. the existing NEDC allows cars to be tested at between 20-30°C, and the UNECE adopted text states that cars should be tested at 23°C, both of which do not fairly reflect average European temperature. A more fitting temperature would be at around 14°C, which better reflects the European average temperature⁶. The EU is also trying to further minimize other testing flexibilities which is welcomed⁷ but which should not come at the expense of the introduction of the WLTP being delayed beyond 2017. It is also worth noting that this implementation deadline date is widely considered as being the most suitable in terms of allowing adequate time for industry and regulatory stakeholders to prepare for use of the new test.

The European Commission is currently drafting an EU-WLTP regulatory text. This text will become EU law once the Commission's Technical Committee on Motor Vehicles (TCMV) votes in favour of the text and its final version has been published in the Official Journal of the EU. This will involve an implementing act and whereby it will require a majority vote in favour by the 28 EU member states. This work is currently behind schedule and although planned for 2014, it is likely that it will only now be ready at an undetermined date in 2015.

Simultaneous to the drafting of the EU-WLTP regulatory text, the European Commission is also having to adjust the legal limit values for CO₂ emissions which have been set for the year 2020/21 to take account of the use of the different measurement method set out in the WLTP. This work is also behind schedule and a Commission proposal is expected to be made at the same time as the EU-WLTP text. For the adjustment of the targets/test results, this would involve a delegated act and thus involve the European Parliament and Council in either agreeing or vetoing to the Commission proposal.

Recommendation
The WLTP should be swiftly adopted under EU law and operational by 2017 in order for consumers to have a more realistic picture on fuel consumption.

⁵ Although no longer a point of discussion at the EU level in terms of requirements under the WLTP, the driving cycle of the WLTP itself is not expected to result in a vehicle consuming substantially more fuel. For future discussions we would advocate a more varied and realistic simulation of driving conditions as expected in urban, rural and motorway driving conditions.

⁶ For more information see the following paper published by the ICCT:
http://www.theicct.org/sites/default/files/publications/ICCT_WLTP_EffectEU_20141029.pdf

⁷ Idem
For more information see the following paper published by ICCT:
http://www.theicct.org/sites/default/files/publications/ICCT_LaboratoryToRoad_2014_Report_English.pdf

Safeguards to protect consumers

Although there are many positive aspects about the WLTP, some flexibilities in the testing protocol will inevitably still exist. Considering this fact and that varying motorist driving styles will mean for differences in fuel consumption per individual, clearly it is unlikely that the new test will allow for results that identically match real life figures. In this regard, applying a scaling factor to test results should be explored. This would in essence mean a scaling factor being applied to convert fuel consumption values measured under test conditions into values that better represent average driver experiences in real life. This would be crucial in order to give consumers a better indication of expected fuel consumption when buying a new car. In addition, the use of technologies such as Portable Emissions Monitoring Systems (PEMS) that allow for the testing of fuel consumption and CO₂ emissions of a vehicle in real world conditions should also be further explored. Research results indicate such systems are very accurate in measuring emissions and fuel consumption and thus could be used to deliver more realistic figures, as is proposed for the purpose of measuring exhaust emissions under EU legislation.

Thirdly, it is essential that the new test allows for consumers to compare one car model with another and for this purpose it is crucial that the test is conducted in the spirit of the law. For this to be achieved, it is essential that further safeguards are in place. This would mean:

- Conformity of production checks carried out on production vehicles (i.e. mass produced vehicles) before they are offered for sale, and;
- In-service conformity checks carried out on production vehicles that have been purchased and are in use.

Member States would be obliged to carry out the checks so as to ensure in-use performance matches, or is similar, to what is indicated in the type-approval results. These spot checks would allow for the validation of the type approval tests through discovering whether or not the fuel consumption and CO₂ emissions values of the production vehicles match with those of type-approval vehicles. If the differentiation between the type-approval test results and the conformity test results was significant enough, the car manufacturer should be obliged to change their fuel consumption/CO₂ emissions claims. Without this further safeguard, car makers would have little incentive to conduct the test in the spirit of the law and rather would have a direct incentive to exploit any remaining or unforeseen flexibilities that the testing procedures allow for.

Lessons could be learned about conformity testing from the US approach which has seen several car makers forced into amending fuel consumption claims on the back of conformity checks carried out by the US Environmental Protection Agency (EPA) over recent years (See box 2 for more information).

Box 2 The US approach to ensuring fair fuel consumption claims

In the US, there have been several cases of car makers being forced into amending their fuel consumption claims subsequent to conformity checks on production vehicles being carried out by the US Environmental Protection Agency. For instance, in 2012 [Hyundai and Kia](#) were forced into correcting misleading fuel economy values for several of their models and in 2014 [Ford](#), [BMW](#) and [Mercedes](#) were also required to correct the fuel consumption values for certain models.

In the case of Hyundai and Kia, the US EPA also required the companies to pay a [\\$100 million penalty](#), spend approximately \$50 million on measures to prevent any future violations and were made to forfeit 4.75 million greenhouse gas emission credits.

For the purpose of ensuring the type approval tests can provide a fair reflection of the fuel consumption and CO₂ emissions of production vehicles and to give further oversight and assistance to Member States, it is essential therefore that a control mechanism is established. Most straightforward would be to create a European wide authority for this purpose. A dedicated European agency could be established with the responsibility for ensuring EU type approval legislation is being implemented in an appropriate manner, and that standards and procedures are being applied more coherently across the EU. Establishing an EU authority in this area would also not be an unusual step for the European transport sector as for aviation, rail and shipping, there already exists dedicated EU agencies responsible for monitoring the implementation of legislation⁸.

It is important to recognise here that once a manufacturer is awarded with a type approval certificate, it would be valid for use across the EU. Although the benefits here are clear (e.g. a car maker is not obliged to conduct type approval tests in each and every Member State) type approval testing is a competitive market and as there are areas of the legislation that are open to 'subjective interpretation'⁹ it does require oversight. The aim here would be to reduce any potential conflict of interest resulting from the competition between technical services¹⁰ (and type approval authorities where they are affiliated) and thus provide consumers from across Europe with greater trust in the system.

Recommendations

A scaling factor should be applied to convert test cycle emissions to real world emissions.

The creation of an EU-wide type approval authority to ensure more coherent testing standards and procedures applied across the EU.

Conformity checks must be carried out by national authorities on production vehicles both before sale and once in use. If the results of tests differ significantly from the type-approval vehicles, the manufacturers should revise their claims appropriately.

⁹ TNO (2012) http://ec.europa.eu/clima/policies/transport/vehicles/cars/docs/report_2012_en.pdf

¹⁰ I.e. A technical service might be presented with an opportunity to act in the interest of their client, the car manufacturer, in order to gain repeat business.

Correlation Exercise – modifying the targets

The European Commission is also having to account for the effect of the new testing protocol on achieving existing 2021 fuel economy/CO₂ targets for passenger vehicles. This is because the setting of the 2021 targets was based on the understanding that the NEDC would be utilised to test the fuel economy and CO₂ emissions performance of vehicles. Being that the fuel economy/CO₂ emissions performances of vehicles when tested according to the WLTP will differ to those under the NEDC, the legal threshold values which have been agreed will in effect have to be modified to ensure that the same level of stringency can be achieved. In this, it would be important for the correlation exercise to be transparent and easily verifiable to ensure that the target remains as challenging as previously intended.

The Commission's Technical Working Group for the correlation exercise process is heavily dominated by the car industry¹¹. The work is extremely complicated and there is a substantial risk that the 95 g/km CO₂ target could be weakened by exaggeration of the additional requirements of the WLTP. It is crucial therefore that the conversion of NEDC values into WLTP values must not reward those car producers that have made the most extensive use of the "flexibilities" and loopholes of the NEDC. BEUC is also of the opinion that the conversion factor is an essential part of the 95 g/km legislation and therefore should not be left to a comitology procedure that lacks transparency, but be subject to regular EU legislative procedure involving the Council and Parliament as co-legislators. This is the best way to ensure a transparent and accountable procedure.

Although setting an appropriate conversion factor for the purpose of modifying the existing 2021 targets is of course necessary, this should not come at the expense of delaying the introduction of the WLTP beyond 2017. The WLTP must be implemented by 2017 for, at the very least, the purpose of providing prospective car buyers with more reliable information concerning fuel economy and CO₂ emissions performance.

Recommendation

The 2021 CO₂ targets for passenger cars should be modified to represent WLTP test results. This process should not water down the 95 g/km target or delay the implementation date of the WLTP. To make the process more transparent, it should be subject to regular EU legislative procedure.

CO₂ taxation changes

Several Member States have adopted tax systems where for passenger vehicles the registration and/or circulation tax paid by car owners correlates to the CO₂ emissions of the vehicle. In this, many countries have adopted policies that in essence incentivise consumers to buy vehicles which are the most fuel efficient. This has proven popular and many consumers consider this an important criterion when purchasing a new car. Being that the CO₂ emissions of each vehicle is likely

¹¹ ICCT (2014):
http://www.theicct.org/sites/default/files/publications/ICCT_WLTP_EffectEU_20141029.pdf

to be higher when tested under the WLTP than when tested under the NEDC, for those countries that already correlate the tax base to emissions, the tax levels must be adapted as soon as the WLTP is applied.

Furthermore, at the national level, it would also be important for Member States to implement taxation schemes that effectively reward consumers for investing in cars with a low environmental and health impact (both CO₂ and exhaust emissions) and impressive fuel economy performances. For example in France the 'bonus-malus' tax system operates in such a way that vehicles with high carbon footprints are taxed on sale (the higher the emissions the higher the tax paid), whilst those cars with low carbon footprints are subsidised in the form of a deduction to the price of the vehicle (the lower the emissions the higher the deduction). Similar approaches to rewarding car buyers for sustainable behaviour have been taken up in several EU countries and can provide consumers with a strong nudge towards buying more environmentally friendly vehicles.

In a similar vein, we are also very supportive of linking national company car taxation systems to the environmental performance of the car. The favourable tax treatment of company cars in several member states such as Germany has led to a higher demand of more powerful, but also more polluting vehicles onto the market.

Recommendation
For those countries that already correlate the tax base to emissions, the tax levels need to be adapted as soon as the new testing standard (WLTP) is applied.
At a national level, those Member States who do not correlate tax base to emissions should further explore and implement car taxation schemes that effectively reward consumers for investing in low emissions vehicles.

Revision of the car labelling Directive

In order to provide consumers with better information on the fuel consumption and environmental performance of cars, there also needs to be a revision to the car labelling Directive (See our position paper on car CO₂ labelling for detailed recommendations¹²). This is now seven years overdue, and it is our assessment that in several EU Member States this instrument for better consumer information has not reached a high level of recognition and that the scheme has not been implemented in all countries in a way that maximises its impact.

Even though we consider setting ambitious emissions performance standards for passenger vehicles as the major instrument to reduce CO₂ emissions from cars, revising the car labelling Directive will also be fundamentally important in order to enable consumers to better factor in fuel efficiency and running costs when choosing a car. It is important to recognise that such matters are historically amongst the most important to consumers when choosing a new vehicle, and irrespective of present day fuel costs, it is important that consumers are reliably and clearly informed about such costs.

¹² BEUC position paper on car labelling: http://beuc.eu/publications/beuc-x-2014-053_cca_cars_co2_labelling-2014_anec-beuc_position_paper_long_version.pdf

What is very clear is that if the EU's climate and energy targets are to be achieved, it will require a truly holistic approach to bringing down fuel consumption in the EU and car labelling will be essential here. The car CO₂ labelling Directive is in essence undermining these goals as prospective car buyers in many EU countries are unable to make an informed decision when considering a vehicle's CO₂ emissions/fuel economy performance. Factoring in that prospective European car buyers also consider and indeed purchase cars from other EU Member States than their own, means that if the label does differ significantly between countries there is the real risk of further confusion and disengagement with the labelling information.

Lastly, it is also important to recognise that in some Member States where a 'relative labelling' scheme is utilised, not only are consumers confused with the information made available to them¹³ but it also gives a disincentive for car makers to invest in light weighting, which is one of the most effective ways to reduce a car's CO₂ footprint and fuel consumption.

We therefore urgently call for revision of the car labelling Directive by standardising and optimising the format of the label across the European Union in order to make sure that all EU consumers are provided with information that is given in an intuitive and user-friendly way allowing simple and accurate comparisons between cars. We also require that clearer and more visible information must be provided via all kinds of advertisements including the internet as an additional measure to more effectively encourage consumers to buy cars that use less fuel and thereby steer the market towards more sustainable vehicles.

Recommendation
The car labelling Directive must be revised in order to provide consumers with better information at the point of sale and in all advertisements.

¹³ In contrast to a relative labelling scheme based on a car's weight, an absolute scheme would ensure cars are rated on their total emissions, to avoid having big SUV's being categorised as equal to small and more fuel efficient cars.