

T&E reply HDV CO2 emission standards

Public consultation

December 2017

1. EC projections

The inception impact assessment focuses too much on the 2030 energy and climate targets only. Even if 2030 targets are important, they were set in 2014, before the Paris Agreement was signed. At that time, the European Union had a soft target for the transport sector to reduce its transport related emissions by 60% compared to 1990 (2011 Transport [White Paper](#)). However, the success of COP21 changed it all. Almost all countries in the planet agreed to limit climate change to 2 degrees, and to pursue efforts toward limiting warming to 1.5 degrees.

The European Commission is now in the process of revising its 2050 roadmap, in the light of the Paris Agreement. T&E commissioned a [study](#) to assess what the target for sectors not included in the EU emissions trading system (ETS), which includes transport, would need to be by 2050. Considering that there are certain sectors, like agriculture, that cannot completely decarbonise (incl. all GHG emissions), transport needs to reduce its emissions almost to zero if we want to reach our Paris climate targets.

This inception impact assessment deals with energy efficiency standards for heavy duty vehicles. Earlier this year T&E published an in-house [study](#) analysing how road freight emissions could reach zero greenhouse gas emissions in the 2050 timeframe. We performed modelling to assess how different measures could contribute to achieve this goal. Our exercise showed that implementing ambitious fuel efficiency standards for heavy duty vehicles play an important role in reducing emissions from the sector. However, as expected, it is clearly not enough considering the level of the climate challenge. The study makes clear that, in the medium term, zero emission vehicles are needed to decarbonise road freight.

Of all options possible, the most efficient, by far, would be to fuel trucks with electricity. The study and its [update](#) show different options to achieve zero emissions. Even if internal combustion engines could be part of the picture in a decarbonisation scenario using [electrofuels](#), that option would require up to five times more renewable electricity than using electricity directly. Therefore, beyond standards, the Commission should consider in its proposal establishing a measure to incentivise ZEVs (with bonus / malus) for trucks and buses focusing on tailpipe emissions.

2. Options for regulatory standards

Standards - and not voluntary measures or labels - are the only effective way to tackle growing truck CO2 emissions. Voluntary steps or more transparency (through VECTO, monitoring and reporting or labels) will not help to overcome the main market barriers such as financial constraints of SMEs to invest in fuel efficiency technologies and split incentives. With CO2 standards, OEMs will be obliged to put many of the cost-effective technologies on the vehicle at reduced prices. In this way market barriers, such as low deployment of fuel saving technology by OEMs, split incentives, and limited financial resources of SMEs will be tackled, as is already the case in the US, where they recently introduced a second phase 2027 standard. At the same time this will also create a market for component suppliers.

3. Design of the standard

- Engines can deliver one third of the emission reduction potential by 2030 of tractor trailers, ICCT research shows.¹ Therefore engine standards only will not bring the emission cuts EU and Member States need.
- Ambitious 2025 full vehicle and engine standards are the preferred option. This because there is still much potential in improving engine efficiency, and the regulatory barriers for adopting an engine standard are rather low. If this would not be feasible in this timeframe, Europe should introduce ambitious full vehicle standards in 2018 and engine and trailer standards in 2020.
- In the proposal due on 2 May 2018 the European Commission should first set targets for 2025 and commit to future 2030 standards. The proposal for 2030 targets should be made by the next Commission in 2020. The proposals published in 2020 should also include trailers and categories not covered by the 2018 proposal. Zero emission incentive measures - for the period after 2025 - should also be covered. As 2018 will initiate the first European HDV standards, the EU can use the lessons learned during the first phase of standards for targets after 2025. Regarding full vehicle standards, ICCT research shows that fuel efficiency of tractor trailers can be improved by 43% by 2030.^[1] This means cost-effective improvement of tractor efficiency by 20% by 2025. The targets for 2025 standards in the upcoming proposal should aim at such level of ambition and get the maximum cost-effective potential out of trucks.

4. On road testing

The diesel scandal and growing gap between lab and on road CO₂ emissions in the LDV sector has showed we need on road in-service testing for all vehicles. This is already happening for the Euro VI pollutant standards for trucks and with success. For these reasons the EC should introduce in the upcoming HDV proposal a mandatory in-service test that shall be performed by Type Approval Authorities. At the same time accredited 3rd parties shall also be allowed to perform testing of vehicles and also test air drag values of trucks. Type Approval Authorities shall be obliged to take action if 3rd party tests show there is a discrepancy between the declared values and the on road test results. The legal basis for such in-service testing shall be introduced in the upcoming 2018 HDV proposal.

5. Option for setting standards

- The targets shall be defined ex-ante as done in the US. The EC has sufficient data from research and the OEMs to establish a solid baseline. The same applies for the technology improvement potential. Also here research and OEM data can provide sufficient information.
- A top-runner approach is not the best approach as it would lead to low ambition levels given that the difference between an average and premium vehicle (tractor trailer) is around 11%. This while, for example, the 2025 fuel saving potential for the tractor only is already 20%. Similarly the potential for CO₂ reductions to 2025 is also 20% (taking 2020 as the first years of binding standards), according to the same ICCT research.
- The regulation's main objective is to reduce CO₂ emissions from the vehicle itself. It is the OEMs primary responsibility to apply measures that are within their sphere of influence. The metric should focus on these aspects and therefore a g/km is the right metric. Furthermore the European Commission shall work with default payloads in the Regulation.

¹ http://www.theicct.org/sites/default/files/publications/EU-HDV-Tech-Potential_ICCT-white-paper_14072017_vF.pdf

- Fixed year of application is the most effective way to reduce truck emissions. With yearly targets and banking and borrowing OEMs that over comply (because the target or the baseline was not stringent enough) could possibly use these credits for example after 2025. This would weaken the overall target and goal of the HDV regulation which is reducing truck and transport CO2 emissions.
- On top of ambitious standards, a binding zero emission sales target for truck OEMs or benchmark should be introduced. These incentives should include a bonus and malus system. This would effectively increase the uptake and sales of ZEVs. There should also be a cap on the benefits for overachieving the target. The value of a ZEV credit should also be based on the mileage of vehicles.

6. Options for the type of targets

- A not-to-exceed limit for each individual vehicle is too strict, complex and burdensome. Therefore an average target per vehicle group should be introduced. To arrive at a single CO2 value for each vehicle to be compared against the target (for each vehicle group), the European Commission shall introduce a representative weighting of the results of the vehicle certification for different mission profiles and payloads. The weighted averages of the mission profiles and payloads should be in line with the average real world operation of trucks in that vehicle group. EU data for example show that 20% of trucks run empty.²
- No transferring of credits shall be allowed to avoid OEMs mainly investing in categories where they can achieve fast reductions but don't necessarily have a high mileage and CO2 reduction potential. Categories that have the highest mileage should have higher reduction targets because of the cost-effective potential. Pooling shall not be allowed as this would undermine competition between OEMs. Already today the number of manufacturers in Europe is rather low. In addition the cartel has showed we urgently need more competition between different truck OEMs. As mentioned before, banking and borrowing when poorly designed would allow OEMs to undermine the CO2 targets and the overall CO2 reduction goals. Trading could be allowed but only between the same vehicle categories in order to make the process not too complicated.

Further information

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² https://ec.europa.eu/transport/modes/road/news/road-haulage-report_en