

Revision of Regulation (EU) 2019/1242

CO₂ Standards for Heavy-Duty Vehicles

Position
May 2023



German heavy-duty vehicle manufacturers and suppliers are strongly committed to rapidly reducing CO₂ and exhaust emissions from public passenger and road freight transport and to making newly registered commercial vehicles fossil-free for European roads by 2040. To this end, a coherent, progressive and binding regulatory framework that guarantees the right market conditions for successful climate protection must be created.

Commercial road freight transport with heavy-duty vehicles is a demand-driven B2B market with small and medium-sized companies as well as major providers of transport services. Public passenger transport by road is generally supported by public funds and is subject to strict budgetary constraints by cities, municipalities and federal states. Therefore, it is appropriate that the European Commission has now presented a clear roadmap for the further development of the CO₂ fleet emission targets for heavy-duty vehicles (lorries, buses/coaches and trailers) from 2030 to 2040.

The proposal to revise (EU) 2019/1242 contains several points that, in total, mean that a majority of the vehicles used in road freight transport and public passenger transport will need to undergo massive technological changes in the future.

Given the current framework conditions, including the lack of charging and H₂ fuel infrastructure suitable for heavy-duty vehicles and the lack of effective carbon pricing measures, even the current CO₂ reduction target (30% reduction by 2030) is difficult to achieve.

The general target path proposed by the European Commission across all vehicle classes (minus 45% as of 1 January 2030, minus 65% as of 1 January 2035 and minus 90% as of 1 January 2040) is extremely challenging, especially if it is not supported by appropriate framework conditions and it directly enforces the development of electric drive technologies in the commercial vehicle sector. CO₂ reductions to this extent and at this pace will lead to a profound transformation in road freight transport and public passenger transport.

Moreover, achieving these goals necessitates an ambitious goal for developing charging and hydrogen fuel infrastructures throughout Europe that are compatible with heavy-duty vehicles. Only the proper framework conditions will allow transport companies to switch to vehicles with new alternative drive systems. Unfortunately, work on various regulations concerning the implementation of the “Fit for 55” package in recent months has shown a lack of coordination of the various objectives, in particular ambition levels for the setup of the charging and hydrogen refuelling infrastructures that are low.

Therefore, a future-proof revision of (EU) 2019/1242 should not be based solely on guidelines and methodologies for the determination of CO₂ fleet limits but should be considerably expanded to include the assessment of the potential market readiness of zero-emission technologies and the actual state of the alternative fuel infrastructure along the main transport corridors and in each Member State in addition to overall compliance with AFIR requirements.

Table of contents

1	Indicator for the setup of charging and H ₂ fuel infrastructures	4
2	Technology freedom	4
3	New vehicle groups and CO ₂ targets	5
4	Trailers	6
5	Alignment of ambition values for Euro 7 and CO ₂ targets	7
6	De-fossilisation	7

1 Indicator for the setup of charging and H₂ fuel infrastructures

The VDA recommends that the (EU) 2019/1242 be supplemented by a Europe-wide mandatory indicator for the assessment of deployed charging and H₂ fuel infrastructures with regard to the number of heavy-duty vehicles with alternative drive systems registered in the European market and the respective fleet limit values defined for the five-year periods. The purpose of such an indicator is the early detection of possible deviations in the registration numbers of commercial vehicles in relation to the availability of the infrastructure. In doing so, this indicator must take into account the special features specific to the heavy-duty vehicle (e.g., grid connection for charging infrastructure, high charging capacities by using the megawatt charging system, provision of hydrogen at H₂ filling stations, number of E- and H₂ trucks, capacity utilization and degree of equipment on important roads, CO₂ pricing including CO₂-based road tolls, total cost of ownership, etc.).

This indicator shall be used in a binding manner as part of an annual process to assess the effectiveness of this regulation in relation to the level of implementation of the Alternative Fuels Infrastructure Regulation (AFIR). A review of (EU) 2019/1242 only in the context of the proposed review in 2028 comes much too late. On this basis, the forthcoming review of (EU) 2019/1242 should be moved forward to 2027 and the assessment of the indicator should be carried out annually starting in 2025.

If key elements of the annual review are not consistent with the proposed CO₂ targets, the targets should be reviewed and the penalties for non-compliance with the CO₂ regulation should be adjusted accordingly.

Vehicle manufacturers should not be held accountable if EU and Member State policymakers, public authorities or other industry sectors fail to fulfil their responsibilities in de-carbonising heavy-duty vehicle transport.

2 Technology freedom

The new definition of the zero-emission vehicle (ZEV) as proposed in the draft by the European Commission regarding the type of propulsion in trucks, tractors and buses is generally welcome. The triad of technologies – battery-electric, hydrogen fuel cell and hydrogen engine – meets the demand to implement the appropriate drive concept for many heavy-duty vehicle applications.

The limit value must be determined so as to ensure the eligibility of the above-mentioned three technologies.

3 New vehicle groups and CO₂ targets

The proposal of the European Commission includes the extension of the scope of the regulation to commercial vehicles from 5 tonnes, as well as coaches and city buses. The corresponding CO₂ targets of -43% by 2030 based on a baseline scenario until 2025, i.e. within less than five years, are unrealistic, as the short period between the monitoring phase and target achievement is disregarded.

Since the market introduction of new trucks and coaches correlates with certain ramp-up curves and is characterised by strong economic conditions, especially in this vehicle segment, it is logical to have a greater differentiation of the CO₂ targets according to vehicle subgroups for the five-year periods starting in 2030. New vehicle subgroups included in the regulation must be gauged more closely against the technologically feasible criteria and the framework conditions and should be given different targets from the previously regulated vehicle subgroups. For the new vehicle subgroups, the entry into the CO₂ fleet limit scheme should start in 2030 with a similar level of ambition as in the case of the already regulated vehicle groups in 2025. This would mean a different CO₂ reduction target for the new subgroups for 2030 is needed.

Particularly in the case of intercity buses and coaches, important initiatives are currently lacking for the development of charging and H₂ fuel infrastructures. The important locations for tourist coaches in the setup of infrastructures (places with tourist attractions, trade fair locations, city centres, etc.) are currently not considered among the provisions for the ramp-up of charging or hydrogen-refuelling infrastructure. In addition, the coach market has decreased considerably in volume and liquidity due to the significant travel restrictions of the last three years; a recovery is more likely to be expected in the long term. Therefore, coaches as a subgroup should also be given different CO₂ reduction targets.

Furthermore, the target for city buses (100% ZEV sales mandate for newly registered vehicles) must not contradict the meaningful approach of the Clean Vehicle Directive starting in 2030. It should also be borne in mind that city buses must be used primarily in public transport and must be refinanced by the municipalities, towns and local authorities. The 100% ZEV mandate in 2030 will create major financial and logistical difficulties for numerous public institutions. Without appropriate framework conditions in the form of funding programmes and a large-scale development of charging infrastructure at the depots of public transport companies, the 100% target seems almost unattainable. Situations should be avoided in which existing diesel-powered city buses are operated longer than current standards.

The incentive mechanism for zero-emission (ZEV) and low-emission vehicles (ZLEV) must be maintained beyond 2030, in particular for the new vehicle groups, as it is a useful and effective means of promoting the introduction of zero-emission vehicles. The current mechanism provides for an upper limit of 3% of the average annual performance of a manufacturer. Tightening the reduction targets will require a significant increase in zero-emission vehicles, which is why a complete elimination is rejected and the proposal should instead provide for a significant increase in the upper limit (3%). It is also necessary to amend the mechanism in order to create incentives for the use of zero-emission heavy-duty vehicles in long-distance transport. Currently, up to 3% of zero-emission vehicles are counted as two vehicles in the calculation of the average fleet performance of each manufacturer, without differentiation by range. For zero-emission vehicles with a minimum mileage of more than 350 km (according to VECTO simulation), a multiplier of at least 4 should be applied.

4 Trailers

Although the trailer itself does not emit CO₂, it is undisputed that it can contribute to the reduction of emissions of the entire vehicle combination. But the Commission's proposal raises a number of practical feasibility issues.

The required CO₂ reduction targets (minus 7.5% for drawbar and central axle trailers and minus 15% for semi-trailers) cannot be calculated with the current state of the "VECTO for trailer" methodology and cannot be reached via all trailer groups with all previously permissible technical solutions in the trailer. The proposed target values from the impact assessment require further clarification. The possible influence parameters of weight, rolling resistance and air resistance for trailer optimisation cannot be reduced endlessly, since the trailer, on the one hand, must fulfil a transport operation and, on the other hand, forms under real conditions a unit with the towing vehicle. Consequently, with the revision of the (EU) 2019/1242, the mandate for a regular and timely revision of the "VECTO for Trailer" simulation tool must also be issued in order to directly incorporate new technologies that go beyond the current topics of lightweight construction, tires, rolling resistance and aerodynamics (e.g., recuperation axles, driven axles, energy storage systems for the optimisation of auxiliary units, etc.). It is ineffective to disregard new technologies in the simulation and thus possibly create market-distorting structures.

The VDA proposes that the respective subgroups of trailers are evaluated according to their potential for improvement, which can be determined in the "VECTO for Trailer" calculation method, with well-adjusted CO₂ fleet limits per subgroup and not with a "flat rate" of minus 7.5% or minus 15%. Furthermore, like trucks and coaches, trailers must stepwise be brought up to a final CO₂ target in five-year steps from 2030 onwards. This offers trailer manufacturers the opportunity to gradually introduce new technologies (e.g., trailers with generator and/or drive axles or devices for energy storage) and at the same time to develop them further after the year 2030. However, these new technologies cannot be brought onto the market in the short term and therefore cannot initially contribute to achieving the CO₂ reduction targets, since extensive validations and implementation of the approval process are still required. E.g., the e-axles cannot be type-approved currently. Furthermore, they are very expensive, have an influence on payload and can only be used for certain transport operations. The VDA therefore proposes **setting a 5.0% CO₂ reduction target for all trailers in 2030, based on the potential that can currently be represented in "VECTO for Trailer", and increasing this target for individual trailer subgroups to 7.5% in 2040.**

The Commission proposal defines an emission-free trailer for Article 3, paragraph 11 of (EU) 2019/1242 in section (c). From the point of view of the VDA, it makes sense in certain applications to electrify the trailer in its various forms to contribute to reducing the CO₂ emissions of the trailer and auxiliary units. To be able to adequately evaluate these technologies, however, they must be made physically assessable in "VECTO for Trailer" according to their real savings potential and also taking into account the change in payload.

It should also be borne in mind that trailers used in intermodal transport and can be loaded onto the railway's wagons/barges have significantly lower annual mileage than standard trailers in pure road transport. Here, a more detailed specification of the mileage for the subgroups of semi-trailers (see Annex I Point 2.6.3) would be necessary, as this influences the factor "Mileage and payload weighting factor (MPWsg)" according to Annex I Point 2.6.

The trailer market in Europe is characterised by strong competition. In addition, manufacturers are facing an inflationary increase in manufacturing costs. Against this

background, the VDA missed a certain degree of sensitivity in the European Commission's proposal to revise (EU) 2019/1242. This is reflected, for example, in the completely disproportionately high penalties from the perspective of the trailer manufacturer if the specific fleet limit values are exceeded. In particular, the high diversity of the different trailers in correlation with user-specific applications is an outstanding strength of European trailer manufacturers. Europe should not endanger this competitive advantage, as it is precisely these high penalties that may pose an existential threat to all trailer manufacturers and prevent their further activity in the vehicle segment. The VDA therefore rejects the flat-rate approach (4,250 Euros per gram CO₂ per vehicle) and recommends, on the one hand, a reduction in penalties in accordance with Article 8 and, on the other hand, a differentiation based on net prices for trailers.

5 Alignment of ambition values for Euro 7 and CO₂ targets

Close coordination between the CO₂ dossiers and the Euro 7 dossiers for heavy-duty vehicles is crucial in terms of ambition level, implementation effort and implementation period. In its legislative proposal for Euro 7, the European Commission assumes a very minimal market ramp-up of alternatively powered commercial vehicles, which would not be sufficient to meet the proposed CO₂ fleet targets. Both regulations should be based on the same scenario in order to be able to align the vehicle emissions targets with the future powertrain mix.

The European Commission must align the proposed tightening of CO₂ targets for heavy-duty vehicles with the planned new emission limits for the Euro 7 Regulation.

6 De-fossilisation

Road transport is at the beginning of its transformation to climate neutrality. Although it is still unclear to what extent the conditions (such as charging infrastructure) that are absolutely necessary for the planned electrification will be available in time. Therefore, in the spirit of resilience, it would be important to keep the technological path open for additional climate protection technologies.

It is undisputed that the delivery of "green electricity" must be massively expanded and the industrial production of "green hydrogen" must be accelerated. However, fossil-free fuels must also be part of the climate-neutral road transport sector. The needs of the transport sector and the existing major difficulties in setting up a suitable charging and hydrogen fuelling infrastructure for commercial vehicles throughout Europe should be considered. We reject a general ban on technologies.

The corresponding VDA position paper, "Renewable fuels – indispensable for climate neutrality in road transport", addresses this topic in more detail and should be consulted in case of enquiries.

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The German Association of the Automotive Industry (VDA) consolidates more than 650 manufacturers and suppliers under one roof. The members develop and produce cars and trucks, software, trailers, superstructures, buses, parts and accessories as well as new mobility offers. We represent the interests of the automotive industry and stand for modern, future-oriented multimodal mobility on the way to climate neutrality. The VDA represents the interests of its members in politics, the media, and social groups. We work for electric mobility, climate-neutral drives, the implementation of climate targets, securing raw materials, digitization and networking as well as German engineering. We are committed to a competitive business and innovation location. Our industry ensures prosperity in Germany: More than 780,000 people are directly employed in the German automotive industry. The VDA is the organizer of the largest international mobility platform IAA MOBILITY and of IAA TRANSPORTATION, the world's most important platform for the future of the commercial vehicle industry.

If you notice any errors, omissions or ambiguities in these recommendations, please contact VDA without delay so that these errors can be rectified.

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