



European  
Automobile  
Manufacturers  
Association

# ACEA Position Paper The European Commission proposal on CO<sub>2</sub> standards for new heavy-duty vehicles



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## EXECUTIVE SUMMARY

- a) Truck manufacturers are willing to commit to a binding and ambitious CO<sub>2</sub> reduction target for the year 2025 (applying to the vehicle groups within the scope of the mandatory CO<sub>2</sub> declaration system in 2019), provided that this target is realistic. Given the state of the market and technology today, a 7% CO<sub>2</sub> reduction by 2025 would strike the right balance between being both ambitious and realistic.
- b) In addition to a 2025 target, the European Automobile Manufacturers' Association (ACEA) supports an indicative CO<sub>2</sub> target for 2030 that would apply to all vehicles covered by the mandatory declaration system, complemented by a comprehensive interim review in 2022. A 16% CO<sub>2</sub> reduction by 2030 (based on a 2019 baseline) would be pragmatic yet progressive.
- c) The interim review of the 2030 CO<sub>2</sub> target in the year 2022 should consider, among others, any new developments regarding standards for pollutant emissions. Moreover, it should be possible to adjust the 2030 target upwards or downwards in order to reflect the realities of the heavy-duty vehicle market at that point in time. For example, by taking into account the level of investment and the availability of the necessary refuelling and charging infrastructure for alternatively-powered vehicles, as well the market uptake of such alternative powertrains.
- d) ACEA supports the European Commission's idea of introducing specific incentives to stimulate innovation, and the uptake of alternative powertrains in particular. In this respect, truck makers welcome the introduction of a super-credit system, but believe that there should be no cap on the credits, at least for the 2019-2025 period, in order to encourage the widest possible deployment of low- and zero-emission vehicles. In addition, ACEA recommends that the proposed banking and borrowing system should allow manufacturers to use credits within five years, while obliging them to clear debts within three years.
- e) While truck manufacturers do not disagree with the principle of paying penalties in case of excess CO<sub>2</sub> emissions – provided that the ambition level is realistic – ACEA is concerned about the extremely high amounts specified in the current proposal. Penalties should be in proportion to the cost of the technology needed and based on the right metric, reflecting the work performed by a heavy-duty vehicle. Therefore, in line with the Commission's assumptions about vans and reflecting the specificities of the truck market, ACEA recommends that the penalty is set at €570 per gramme CO<sub>2</sub>/tkm.

## INTRODUCTION

The members of the European Automobile Manufacturers' Association (ACEA) have significantly reduced CO<sub>2</sub> emissions from their new heavy-duty vehicles over the past years and remain committed to further cutting CO<sub>2</sub> from road transport in the future. Following the introduction of a system for the mandatory declaration of CO<sub>2</sub> values of new heavy-duty vehicles according to certified procedures as of 2019, manufacturers are now keen to contribute to the development of the first-ever EU standards for CO<sub>2</sub> emissions from trucks.

Considering the complexity of the market, introducing legislation suitable for all different configurations of heavy-duty vehicles is challenging. Trucks are fundamentally different from passenger cars. In other words, they are not simply big cars. Heavy-duty vehicles are business tools owned by professionals who, for commercial purposes, are always looking for the best performing vehicle, taking into account fuel consumption and efficiency. This is also why trucks are usually tailor-made to customers' specific orders or are custom-built for a specific mission.

Hence, CO<sub>2</sub> standards for heavy-duty vehicles should be very different from those proposed for cars and vans. As fuel represents around 30% of the total cost of ownership of a heavy-duty vehicle, there are already strong economic incentives for truck makers to develop and sell the most fuel-efficient vehicle, thus stimulating innovation and competition among manufacturers.

In March 2018, ACEA presented its position on future EU standards for CO<sub>2</sub> emissions from new heavy-duty vehicles<sup>1</sup>. Following the publication of the European Commission's proposal on 17 May 2018<sup>2</sup>, this paper complements earlier ACEA proposals by further contributing to the design of the EU framework for regulating CO<sub>2</sub> emissions from trucks.

This position paper is structured around three main clusters:

1. Ambition level and timing;
2. Enablers of decarbonisation;
3. Compliance framework and monitoring.

The proposals set out in this position paper are meant to contribute to the ongoing discussions on finalising the EU's first-ever CO<sub>2</sub> scheme for new heavy-duty vehicles. In order to ensure that the CO<sub>2</sub> targets under discussion are also deliverable in practice, ACEA believes that this new regulatory framework should strive to be cost-effective, reflect the diversity of the truck market, and enable innovation without imposing a technology choice.

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<sup>1</sup> ACEA Position Paper: Future CO<sub>2</sub> standards for heavy-duty vehicles: <https://www.acea.be/publications/article/position-paper-future-co2-standards-for-heavy-duty-vehicles>

<sup>2</sup> Proposal for a regulation of the European Parliament and of the Council setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles – COM(2018) 284: <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1530772736657&uri=CELEX:52018PC0284>

# 1. AMBITION LEVEL AND TIMING

## 1.1 CO<sub>2</sub> REDUCTION TARGETS FOR 2025 AND 2030

The European Commission has proposed two CO<sub>2</sub> reduction targets for the period until 2030; both to be based on a 2019 baseline and calculated according to certified procedures as well as VECTO:

- A mandatory 2025 CO<sub>2</sub> reduction target of 15% for the vehicle groups within the scope of the mandatory CO<sub>2</sub> declaration system in 2019 (ie vehicle groups 4, 5, 9 and 10; representing 80% of the EU fleet's CO<sub>2</sub> emissions).
- An aspirational 2030 CO<sub>2</sub> reduction target of 30% for the vehicle groups within the scope of the mandatory CO<sub>2</sub> declaration system in 2019 (ie vehicle groups 4, 5, 9 and 10). However, the proposed interim review of the 2030 target in the year 2022 could result in the -30% target also applying to other vehicle groups.

While this two-step approach is generally supported by industry, ACEA is concerned about the proposed reduction levels as they are based on the partially-flawed impact assessment<sup>3</sup> performed by the Commission. The following inconsistencies in the impact assessment stand out:

- The impact assessment does not sufficiently reflect the fact that truck manufacturers are already exploring every possible option to further optimise fuel consumption. If a cost-effective CO<sub>2</sub> reduction measure exists on the market, manufacturers have a major interest in implementing it as soon as possible. For instance, if 'improved lubricants' allowed for a significant CO<sub>2</sub> reduction, manufacturers would already have implemented such a cost-effective measure.
- The actual implementation rate of the available fuel-saving technologies is much higher in reality than assumed in the impact assessment. In practice, almost 90% of all new vehicles in groups 4, 5, 9 and 10 are purchased by large transport operators that do invest in fuel-efficient technologies. Smaller transport operators may not be able to do so to the same extent, but they account for only 10% of all trucks sold in the above-mentioned groups.
- In addition, the potential of available technologies is calculated based on a long-haul tractor in group 5. In reality, however, the CO<sub>2</sub> reduction potential of these technologies for the total vehicle fleet (ie groups 4, 5, 9 and 10) is lower than for this specific configuration.
- The impact assessment also overestimates the CO<sub>2</sub> reduction potential of certain technologies. For instance, the suggested reduction potential of aerodynamic mud flaps (-1.65%) is much higher than acknowledged by suppliers (~1% with an optimal vehicle combination). The same applies to low-rolling resistance tyres: the CO<sub>2</sub> reduction potential mentioned in the impact assessment should be halved in practice.

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<sup>3</sup> European Commission (2018). Impact Assessment: Proposal for a Regulation of the European Parliament and of the Council setting CO<sub>2</sub> emission performance standards for new heavy duty vehicles. Retrieved from: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=SWD:2018:185:FIN>

- The Commission's impact assessment also suffers from double counting. The CO<sub>2</sub> reduction potential of some technologies is counted several times, even though they have the same effect. The following measures, for example, are counted three times: 'Improved lubricants -1.09%', 'Friction reduction + improved water and oil pumps -1.8%' and 'Reduced losses (lubricants, design) -1.7%'.
- The total CO<sub>2</sub> reduction of certain technologies is assumed to be the sum of individual technologies, which is not realistic in all cases. For example, in practice, combining improvements to exhaust gas recirculation (EGR) and optimised selective catalytic reduction (SCR) heating (-4.55% and -2.27% respectively) yields less than the sum of the individual measures. In certain cases, EGR and SCR technology are not combined on the same truck as it does not bring substantial benefits.
- Some technologies identified by the European Commission are not even on the market anymore; they have been abandoned by truck makers because of their low effectiveness (eg a closable front grille, with a reported CO<sub>2</sub> reduction potential of 1.45%).
- Finally, other CO<sub>2</sub>-reduction technologies, such as predictive cruise control, are not yet covered by VECTO and thus simply cannot be counted towards target compliance.

## What does ACEA propose?

Considering the inconsistencies listed above, ACEA's members believe that the following timing and ambition levels for future CO<sub>2</sub> standards for heavy-duty vehicles (within the scope of the Commission proposal) are achievable at high, but acceptable, cost:

- A mandatory 2025 CO<sub>2</sub> reduction target of 7% (ie -1.2% per year). It is important to understand that the development of trucks to be delivered to customers in 2025 is already underway right now, given their long product and development cycles. This 7% reduction by 2025 should indeed be considered ambitious. It will require manufactures to fit, wherever possible, new technologies into vehicles that already are under development, even if this was not originally planned. From an industrial perspective, this is a challenge in itself.
- An aspirational CO<sub>2</sub> reduction target of 16% by 2030 (ie -2% per year from 2025 to 2030). This ambition level was confirmed to be realistic in a study<sup>4</sup> by independent research body Transport & Mobility Leuven, which assessed the CO<sub>2</sub> reduction potential of new heavy-duty vehicles with a 2030 time horizon using the VECTO simulation tool.

## 1.2 REVIEW YEAR

In its recent proposal, the European Commission suggests a review of the CO<sub>2</sub> standards in 2022, with the objective of reporting on the effectiveness of the proposed Regulation. The Commission

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<sup>4</sup> Transport & Mobility Leuven (2018). 2030 vehicle technology potential. Retrieved from:  
<http://tmleuven.be/project/hgvco2/ReportonHDVemissionreductionmeasuresvg.pdf>

proposal aims to review the following elements in 2022:

- Whether or not to expand the scope of the Regulation to include all vehicle groups covered by the mandatory CO<sub>2</sub> declaration system;
- To confirm or adjust the 2030 CO<sub>2</sub> target upwards;
- To assess the effectiveness of the so-called 'modalities' – ie the incentive system for zero- and low-emission vehicles as well as the banking and borrowing mechanism – and to consider the need for continuing those modalities after 2030.

### What does ACEA propose?

ACEA supports the proposed interim review in 2022 when it comes to a possible adjustment of the 2030 target, as well as including all vehicle groups covered by the mandatory CO<sub>2</sub> declaration system. This review cannot happen before 2022, as VECTO data covering all vehicle groups will only be available by mid-2021. In addition, it is clear that all parties involved (ie manufacturers and other stakeholders, including policy makers) need to gain experience with these data before being able to review the 2030 target.

Furthermore, when revising the 2030 target it should be possible to adjust the target both upwards or downwards (and not 30% or higher, as proposed by the European Commission) in order to reflect the realities of the market at that point in time and not to pre-empt the outcome of the review exercise years in advance.

ACEA believes that the following factors should be taken into account during the European Commission's review in 2022 to guarantee a thorough assessment:

- The latest information on the fuel-efficiency performance of heavy-duty vehicles, as declared through VECTO, as well as the newest fuel-efficient technologies on the market.
- The market uptake of alternatively-powered vehicles (APVs) as well as the deployment of the necessary charging and refuelling infrastructure.
- New developments regarding standards for pollutant emissions (the so-called Euro standards), since reducing pollutant emissions requires conflicting measures to reducing CO<sub>2</sub>. Hence, any realistic CO<sub>2</sub> reduction target must be (re)aligned with potential new Euro standards in the future.
- In the long run, the potential benefits of a well-to-wheel approach should also be considered, given the importance of an integrated approach to further reducing CO<sub>2</sub> from trucks.

## 1.3 ECO-FEATURES AND UPDATING OF THE VECTO TOOL<sup>5</sup>

According to the proposal, the future standards should be based on the CO<sub>2</sub> values as calculated

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<sup>5</sup> More information about the VECTO tool can be found here: <https://www.acea.be/publications/article/infographic-vecto>

using the VECTO simulation tool for the purpose of monitoring target compliance. For each new vehicle within the scope of the future Regulation, these CO<sub>2</sub> values will be counted towards the achievement of each manufacturer's specific CO<sub>2</sub> target.

Although the European Commission expects this new Regulation to push truck makers to put new fuel-efficient technologies on the market, the VECTO tool does in fact not cover all technologies developed and available on the market today. In addition, while VECTO currently uses standard bodies and standard trailers for its simulations, certification procedures for precisely measuring the CO<sub>2</sub> reduction potential of optimised bodies and trailers have not been developed yet. In the proposal's recital 13, the Commission commits to a continuous and timely update of VECTO.

### **What does ACEA propose?**

ACEA supports using VECTO for calculating the official CO<sub>2</sub> values of a heavy-duty vehicle, as this simulation tool is able to capture the differences between each individual new truck.

ACEA believes that the European Commission's commitment to regularly update VECTO is a step in the right direction, but deems this to be insufficient in itself. This simply does not guarantee that new fuel-efficient technologies introduced by truck makers in the future to deliver on the CO<sub>2</sub> targets will be duly considered and rewarded. Hence, a binding commitment to regularly update the VECTO simulation tool should be included in the Certification Regulation (EU) 2017/2400; this update should take place on a yearly basis and ought to be accompanied by an appropriate budget.

In addition, in order to reward CO<sub>2</sub>-reduction technologies that are not covered by VECTO for the time being, these technologies should qualify for so-called 'eco-feature' credits. This would basically entail a VECTO 'fast-track procedure' rewarding such innovations until they are integrated into VECTO.

Adding new fuel-efficient features to VECTO is a long regulatory process, so manufacturers should be entitled to credits for innovations that are put on trucks before they are recognised by VECTO. Such a process would stimulate innovation, while in parallel incentivising the uptake of cleaner vehicles in the short run. To that end, the European Commission should be empowered to develop an eco-feature process.

## **2. ENABLERS OF DECARBONISATION**

### **2.1 INCENTIVISING LOW- AND ZERO-EMISSION VEHICLES**

The European Commission proposal includes an incentive system for low- and zero-emission heavy-duty vehicles (also known as LEVs and ZEVs) in order to support their market uptake. Simply put, when selling a LEV or ZEV, a manufacturer will be granted so-called 'super credits' that count multiple times towards achieving the manufacturer-specific CO<sub>2</sub> target. This is an incentive mechanism that would stimulate the market uptake of low- and zero-emission vehicles, by helping

manufacturers to develop and sell such vehicles in a market that is dominated for 96% by diesel today.

Under the Commission's current proposal, a vehicle is considered to be a LEV if it emits less than 350g CO<sub>2</sub>/km. A ZEV is defined as a vehicle emitting less than 1g CO<sub>2</sub>/km, which in today's context means that it has to be either a full-electric vehicle or a hydrogen one. LEVs will count as up to two vehicles, while ZEVs will be counted as two vehicles.

Finally, these LEV and ZEV super credits would be subject to a cap. This means, in practice, that even if a truck maker succeeds in developing and selling many LEVs or ZEVs, this would not be rewarded with super credits as LEVs and ZEVs cannot reduce a manufacturer's CO<sub>2</sub> target by more than 3%.

## What does ACEA propose?

The European truck industry welcomes the Commission's proposal for a ZEV/LEV incentive system in the form of super credits. Clearly, it is necessary to reward manufacturers of heavy-duty vehicles for developing and offering alternatively-powered vehicles.

However, ACEA believes that the system will only be effective after making the following changes:

- The definition of LEVs should be improved by using the VECTO metric of g CO<sub>2</sub>/tkm, instead of g CO<sub>2</sub>/km as proposed by the Commission. That is because the tonne-kilometre metric better reflects the work done by a heavy-duty vehicle, ie the amount of goods transported. While bigger vehicles might emit more in absolute terms (ie in g CO<sub>2</sub>/km), they are more efficient than smaller ones as they simply transport more goods. In other words, less trucks are needed for the same work. Hence, defining the LEV threshold in g CO<sub>2</sub>/km is a mistake as it would favour the deployment of smaller trucks. Instead, the Regulation should specify a threshold in g CO<sub>2</sub>/tkm, which could be different for each vehicle class and would stimulate manufacturers to introduce both small and large trucks that are cleaner.
- In addition, super credits should apply to all vehicles emitting at least 35% less CO<sub>2</sub> than the reference value of the vehicle sub-group concerned (derived from a 2019 baseline). Reassessment of the definition of 'low-emission vehicles' should be part of the 2022 review in order to reflect the latest technological developments.
- The method for rewarding ZEVs should be further improved by also considering the range of electric heavy-duty vehicles, which is not as much a problem for urban delivery trucks as it is for long-haul trucks. Hence, ACEA proposes that long-haul ZEVs should count three (range >100km), four (range >200km) or five (range >400km) times, based on sub-group cycle weightings. In this respect, it should be noted that under the truck CO<sub>2</sub> scheme of the United States, the multipliers for ZEVs are 4.5 (battery electric vehicles) and 5.5 (fuel-cell vehicles).
- To ensure that the market for LEVs and ZEVs can mature in years to come, ACEA believes that there should be no cap on super credits for 2025. A cap could be considered for 2030 to

the order of 10% instead of 3%.

## 2.2 BANKING AND BORROWING SYSTEM

As set out in the European Commission's proposal, when a truck manufacturer outperforms its annual company-specific CO<sub>2</sub> target in a given year it would be possible to 'bank' that overperformance using credits. These credits can then be used later, for example if a truck maker does not reach the annual CO<sub>2</sub> target in another year. However, the Commission also suggests that any credits earned between 2019 and 2024 can only be used for complying with the 2025 target and become invalid afterwards. All credits are discarded after the 'cut-off years' of 2025 (when the first period ends) and 2029 (when the second period ends).

During the 2019-2025 period, the European Commission is planning to allow manufacturers to collect credits for vehicles not yet within the scope of the Regulation, such as buses and coaches. These vehicles might be added to Regulation's scope during the 2022 review, once they are also covered by the certified procedures and the VECTO simulation tool.

### What does ACEA propose?

Europe's truck manufacturers are supportive of the banking and borrowing system as it would provide much-needed flexibility allowing them to cope with fluctuations in market demand. Indeed, registrations of heavy-duty vehicles tend to follow GDP growth closely, given that demand for road transport is directly linked to the state of the economy – which changes over time.

However, manufacturers should be allowed to use their generated credits within five years while being obliged to clear their debts within three years. This would enable manufacturers to make large steps in reducing CO<sub>2</sub> through new product offerings with intervals of more than one year. Such a system would also reflect the long product cycles and development time of heavy-duty vehicles in a meaningful manner.

## 2.3 POOLING

Manufacturers of heavy-duty vehicles may have different brands or different legal entities for trucks or buses/coaches within the same group. So far, the European Commission has not proposed a workable mechanism that allows for the pooling of CO<sub>2</sub> emissions of heavy-duty vehicles built by different legal entities, even though this is allowed for light-duty vehicles between what the Commission calls 'connected manufacturers'.

### What does ACEA propose?

Hence, the vehicle manufacturers concerned should be able to pool the results of all entities or brands within a group. Similarly to what already has been proposed for cars and vans, ACEA believes that this should also become possible for heavy-duty vehicle manufacturers.

## 2.4 EMS VEHICLES AS A SEPARATE SUB-GROUP

Vehicles with the European modular system (EMS) are high-capacity vehicle combinations with a gross combination weight (GCW) ranging from 40 to about 60 tonnes. These are the most CO<sub>2</sub>-efficient vehicles on the market right now, whether measured in CO<sub>2</sub> g/tkm (weight transported) or CO<sub>2</sub> g/m<sup>3</sup>km (volume transported). When used for transporting heavy goods (eg timber), these EMS vehicles come with three axles, more power and a stronger (but heavier) chassis than those used for transporting high-volume cargo. In case of the latter, EMS trucks are defined according to specific GCW and engine-power ranges.

The CO<sub>2</sub> standards proposed by the Commission would put these high-capacity vehicles in the same vehicle sub-groups as any other truck, as well as evaluating their CO<sub>2</sub> performance using a reference payload that is not representative for the actual use of EMS vehicles.

### What does ACEA propose?

In its current shape, the Commission proposal penalises EMS trucks by attributing CO<sub>2</sub> g/tkm values to them that are much higher than their real-life performance. This has to be corrected.

EMS vehicles should be treated fairly by creating a separate vehicle sub-group for three-axle trucks with high power ratings and by applying the EMS-specific duty cycles and payloads as defined in the CO<sub>2</sub> declaration regulation and VECTO. Moreover, a specific approach is needed that recognises EMS vehicles used for volume transport.

## 2.5 ALTERNATIVE FUELS

The European Commission acknowledges the potential of alternative fuels – and liquified natural gas (LNG) in particular (recital 16) – to further reduce CO<sub>2</sub> emissions from heavy-duty vehicles. However, the current proposal does not sufficiently consider the CO<sub>2</sub> reduction potential of LNG-fuelled trucks.

### What does ACEA propose?

A so-called 'carbon correction factor' should be introduced in order to promote the use of renewable gas for heavy-duty vehicles, thereby rewarding manufacturers that invest in this cleaner technology.

## 2.6 TRUCK PLATOONING

The proposal presented by the European Commission in May does not reflect the considerable CO<sub>2</sub> reduction potential of truck platooning. Given that trucks in a platoon can drive closer together at a constant speed, the air-drag friction is reduced significantly, thereby lowering fuel consumption and with that CO<sub>2</sub> emissions.

## What does ACEA propose?

Truck platooning holds great potential to help cut CO<sub>2</sub> emissions. This is something that should be recognised in the Regulation for truck CO<sub>2</sub> standards. For example, the aerodynamics of a vehicle used for truck platooning should be better reflected in VECTO to provide a strong impetus for this innovative technology that delivers significant CO<sub>2</sub> improvements on the road. The European Commission should consider including truck platooning in future updates of VECTO; suitable vehicles could be identified using a list of technical requirements.

# 3. COMPLIANCE FRAMEWORK AND MONITORING

## 3.1 PENALTIES

In case of exceeding the manufacturer-specific CO<sub>2</sub> target, the Commission proposal specifies that a truck maker would have to pay a penalty, the so-called 'excess emission premium'. The amount of this penalty is currently set at €6,800 per gramme CO<sub>2</sub>/tkm, which is equivalent to €570 per gramme CO<sub>2</sub>/km.

## What does ACEA propose?

While truck manufacturers do not disagree with the principle of paying penalties in case of excess CO<sub>2</sub> emissions – that is, provided that the ambition level is realistic – ACEA is concerned about the extremely high amount specified in the current proposal. The economic objective of this penalty system is to encourage manufacturers to reach the CO<sub>2</sub> targets by investing in new fuel-efficient technologies, rather than paying a fine. The amount of the penalty should be set accordingly.

The penalty proposed by the European Commission has been determined by comparing CO<sub>2</sub> emissions from vans with those of trucks (in g CO<sub>2</sub>/km). However, this comparison is misleading, as a heavier truck carrying a greater load is more efficient than a lighter one (in g CO<sub>2</sub>/tkm), even if the total emissions in g CO<sub>2</sub>/km are higher on paper.

The future legislative framework should therefore address the following issues according to ACEA:

- Penalties should be in proportion to the cost of the technology needed. By contrast, the European Commission did not consider the specificities of the heavy-duty market nor its technology implementation rate when it calculated the amount of the penalties. In fact, the Commission simply used the same assumptions as for cars and vans.
- Instead, penalties for trucks should be based on the right metric, reflecting the work performed by a vehicle, ie grammes of CO<sub>2</sub>/tkm. Defining such penalties in g CO<sub>2</sub>/km, as currently proposed by the Commission, would be counterproductive. For instance, the CO<sub>2</sub> penalty could turn out to be lower for a smaller vehicle than for a larger vehicle. Indirectly, this would push manufacturers to sell smaller vehicles, which are often less efficient than bigger ones.
- In addition, the penalty should reflect the fact that a truck on average carries a payload of 12

tonnes while an average van transports about 1 tonne, and the mileage of a truck is roughly six times higher than a van's, according to the Commission's own impact assessment. Therefore, in line with the Commission's assumptions about vans, and reflecting the specificities of the truck market, ACEA recommends the penalty to be set at €570 per gramme CO<sub>2</sub>/tkm.

### 3.2 IN-SERVICE CONFORMITY CHECKS

The European Commission has proposed to introduce in-service conformity (ISC) checks to verify the CO<sub>2</sub> emission values calculated by the VECTO simulation tool. A deviation between such an ISC check, for which authorities would select a few vehicles from the fleet, and the VECTO values would be taken into account by the Commission when setting the manufacturer-specific CO<sub>2</sub> target.

#### What does ACEA propose?

ACEA does not agree with the approach put forward by the Commission. In a nutshell, the ISC procedure, developed for checking pollutant emissions, should not be used for verifying compliance with CO<sub>2</sub> values as calculated by VECTO. This would transform the proposed Regulation into a vehicle test, discarding the accuracy and cost-savings of simulations, and effectively rendering the VECTO simulation tool meaningless.

In fact, manufacturers are responsible for correctly measuring the CO<sub>2</sub> values of key components of their new vehicles, following the requirements specified by the Certification Regulation (EU) 2017/2400. Remedial procedures are already foreseen in case any deviation is observed. However, truck manufacturers do not control how the VECTO simulation tool calculates the official CO<sub>2</sub> values nor are they in charge of VECTO development, maintenance, updates, etc. This is the responsibility of the European Commission. Using ISC checks to verify CO<sub>2</sub> values would make truck manufacturers responsible for a tool that is beyond their control and responsibility. This raises the fundamental question of who would be responsible for any incorrect CO<sub>2</sub> values.

What is more, such an approach could result in a limited number of ISC checks, performed under unknown conditions, altering the reported total fleet values. ACEA wants legal certainty that non-compliance and remedial actions can only be instigated based on component testing and data handling, following the implemented legal framework. Possible deficiencies of VECTO, if any, are not in the hands of vehicle manufacturers, thus they cannot be held responsible for them. Hence, truck makers should not be required to perform remedial actions to address VECTO deficiencies.

### 3.3 REAL-WORLD CO<sub>2</sub> CALCULATION TO ASSESS VECTO

The proposal foresees that the European Commission is given a mandate to monitor and assess the representativeness of the CO<sub>2</sub> emission values calculated by VECTO. To that end, all heavy-duty vehicles would be equipped with mandatory and standardised fuel consumption meters as a first step. The generated data would then be collected in an anonymised way in order to assess the

representativeness of the VECTO simulation tool (component input data, VECTO cycles, etc).

## What does ACEA propose?

The overall idea of monitoring real-world CO<sub>2</sub> emissions is supported by the members of ACEA, under the condition that customer privacy can be ensured and that the costs are in proportion to the benefits. Moreover, the legislator should make clear that such data will not be used to assess compliance with the manufacturer-specific CO<sub>2</sub> targets.

## CONCLUSION

ACEA supports the European Union's main objective of further reducing CO<sub>2</sub> emissions from new heavy-duty vehicles, while at the same time underlining the importance of the Commission recognising the diversity of this market and the vehicles within the scope of the proposed CO<sub>2</sub> standards.

Europe's truck manufacturers are willing to commit to an ambitious 2025 CO<sub>2</sub> target, provided that the required reduction is realistic and in line with what is technologically possible and economically viable. In order not to distort this complex market, the future framework should provide enough flexibility and the right enabling conditions to make sure that the CO<sub>2</sub> targets are also deliverable in practice.

Incentives to stimulate the uptake of low- and zero-emission vehicles must aim to deliver the widest possible deployment of alternative powertrains. The adoption of other innovations that can reduce CO<sub>2</sub> emissions from road transport in a cost-effective way, such as the European modular system (EMS) and truck platooning, should receive more support from the Commission in this regard.

Finally, industry agrees that compliance is key, but the measures and means must be proportionate to the current regulatory framework as well as the complexity of the truck market. Hence, the proposed 'excess emission premium' (ie a penalty for exceeding the manufacturer-specific CO<sub>2</sub> target) must be revised accordingly, while in-service conformity checks should not be used for verifying compliance with CO<sub>2</sub> values as calculated by VECTO.

## ANNEX

This table provides an analysis of what the European Commission has identified to be 'existing technologies' to reduce CO<sub>2</sub> emissions in the impact assessment that underlies the Commission's proposal for CO<sub>2</sub> standards. The reduction potential of each technology, as assessed by the Commission, has been analysed below and compared with the actual CO<sub>2</sub> reduction potential of that specific technology.

Please note that not all the technologies listed below are currently included in VECTO, and hence do not count towards achieving the proposed CO<sub>2</sub> standards.

Technology	CO <sub>2</sub> reduction potential according to Commission	Actual CO <sub>2</sub> reduction potential
(1) Improved lubricants	1.09%	0.71%
(2) Improved SCR and optimised SCR heating methods	2.27%	1.80%
(3) Aerodynamic mud flaps	1.65%	0.20%
(4) Tyre pressure monitoring systems (TPMS)	0.26%	0.16%
(5) Closable front grille	1.45%	0.25%
(6) Cooling fan	0.47%	0.09%
(7) Friction reduction, plus improved water and oil pumps	1.80%	0.88%
(8) Air compressor	1.56%	0.57%
(9) Reduced losses (lubricants, design)	1.70%	0.56%
(10) Predictive cruise control (PCC)	1.30%	1.24%
(11) Down-speeding with optimised map	0.67%	0.51%
(12) Improved turbocharging and EGR	4.55%	1.46%
(13) Side and underbody panels of truck chassis	1.45%	0.91%
(14) Low-rolling resistance tyres on truck/tractor	7.17%	2.80%
<b>Total</b>	<b>24.34%</b>	<b>11.50%</b>



European  
Automobile  
Manufacturers  
Association

## ABOUT ACEA

- ACEA represents the 15 Europe-based car, van, truck and bus manufacturers: BMW Group, DAF Trucks, Daimler, Fiat Chrysler Automobiles, Ford of Europe, Honda Motor Europe, Hyundai Motor Europe, Iveco, Jaguar Land Rover, PSA Group, Renault Group, Toyota Motor Europe, Volkswagen Group, Volvo Cars, and Volvo Group.
- More information can be found on [www.acea.be](http://www.acea.be) or [@ACEA\\_eu](https://twitter.com/ACEA_eu).

## ABOUT THE EU AUTOMOBILE INDUSTRY

- 13.3 million people – or 6.1% of the EU employed population – work in the sector.
- The 3.4 million jobs in automotive manufacturing represent over 11% of total EU manufacturing employment.
- Motor vehicles account for some €413 billion in tax contributions in the EU15.
- The sector is also a key driver of knowledge and innovation, representing Europe's largest private contributor to R&D, with €54 billion invested annually.
- The automobile industry generates a trade surplus of €90.3 billion for the EU.