



Association  
Européenne  
des Constructeurs  
Automobiles

# ACEA recommendations on Future CO<sub>2</sub> standards for heavy-duty vehicles



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## INTRODUCTION

The European Commission is expected to come forward with a legislative proposal on regulating CO<sub>2</sub> emissions from new heavy-duty vehicles in May 2018. The European Automobile Manufacturers' Association (ACEA) believes that this future framework should be based on the following key pillars:

- CO<sub>2</sub> standards should be combined with an integrated approach that looks at all variables influencing the CO<sub>2</sub> emissions of trucks instead of only focussing on new vehicles and vehicle technology.
- The European Union should define its own approach to CO<sub>2</sub> standards, measures should not be copied from other regions.
- Focus should be on the entire vehicle and not on single components.
- A credible baseline for future CO<sub>2</sub> standards must be based on VECTO-generated CO<sub>2</sub> data.

With this document, ACEA wants to contribute to the on-going discussions on the future CO<sub>2</sub> regime for trucks by making 8 key recommendations for designing the new regulatory framework (pages 3-6). However, before elaborating on those recommendations, this paper will first set the scene by providing the necessary context.

## CONTEXT

### TRUCKS ARE DIFFERENT FROM CARS AND VANS

Most heavy-duty vehicles are custom-built to meet the specific requirements of customers, who use them for a wide variety of different 'missions'. There are literally thousands of shapes and sizes of trucks, from the number of axles to the size of the engine and fuel tank, to the size of the cab or the height of the chassis.

Considering the complexity of the truck market, introducing legislation suitable for all variations will be challenging. There simply is no 'one-size-fits-all' approach for heavy-duty vehicles. Trucks are not 'big cars'. So, CO<sub>2</sub> reduction policy for heavy-duty vehicles should not follow the same approach as that for passenger cars.

### TECHNOLOGY NEUTRALITY

It is crucial to give manufacturers of heavy-duty vehicles the necessary flexibility to select the best (combination of) technologies to meet CO<sub>2</sub> reduction objectives in the future. What is more, competition between different solutions and manufacturers will encourage innovation, resulting in the most cost-efficient pathway to the decarbonisation of road freight transport.

Moreover, there is no one technology suitable for all circumstances. What might be the right option for long-haul transport may not necessarily be the best solution in another use case. Also in this respect, the complexity of the truck market should be respected.

## ALTERNATIVE POWERTRAINS/FUELS AND MARKET REALITY

EU truck manufacturers are committed to finding the best powertrain solution for the specific usage profile of each customer, but this will require a coordinated approach and continued understanding between policy makers and industry. In order to provide certainty to truck makers that want to further invest in alternative powertrains, and to customers that are interested in buying such vehicles, all EU member states will have to invest in adequate refuelling and recharging infrastructure – alongside motorways and national roads, but also in urban areas. It will also depend on the availability of supportive schemes and incentives to stimulate sales of alternatively-powered heavy-duty vehicles.

The transition from diesel to alternative powertrains for the heavy-duty segment will happen at a very different pace than with light-duty vehicles, such as passenger cars. Trucks literally cover thousands of different use cases. What might work for one vehicle in a specific context, will not work in another situation. The Renewable Energy Directive (2009/28/EC) lays the foundation for evaluating the climate impact of alternative fuels.

It is crucial that policy makers adopt a technology-neutral approach. For the time being, diesel remains the powertrain of choice for heavy-duty vehicles, with 98% of all trucks powered by this technology. Diesel offers low fuel costs and high mileage, ensuring a long range between stops. It also provides high pulling power, which improves load-carrying and towing: crucial for the transport of heavy goods.

## CONSIDER THE IMPACT OF OTHER EU LEGISLATION ON CO<sub>2</sub>

### Clean Vehicles Directive

Criteria for heavy-duty vehicles to qualify for quotas under the Clean Vehicles Directive should be realistic. All efficient powertrain and fuel options must be considered, both alternative ones and modern combustion engines.

### General Safety Regulation

The impact of new safety requirements (adding extra weight to the vehicle) on the CO<sub>2</sub> performance of trucks should be carefully considered in order not to jeopardise future CO<sub>2</sub> targets. The timeline foreseen for the introduction of such safety requirements should be in line with the timing and development of the CO<sub>2</sub> regulation.

## Weights and Dimensions Directive

More aerodynamic cabins should be part of the 'toolbox' that manufacturers can use to further reduce the fuel consumption of heavy-duty vehicles. In addition, alternative powertrain options and their need for additional space and weight must be considered properly as well. Further regulatory action is needed to make this possible

## Revision of the Eurovignette Directive

ACEA welcomes the revision of the Eurovignette Directive, including the European Commission's proposal to introduce a CO<sub>2</sub> differentiation of charges for heavy-duty vehicles. This is supported by manufacturers of heavy-duty vehicles, provided that any such differentiation is introduced in a 'neutral way', i.e. with no increase in the total amount of toll revenue collected from the transport industry.

# 8 KEY RECOMMENDATIONS

## 1. ENSURE CONSISTENCY BETWEEN CLIMATE AND AIR QUALITY POLICY

Reducing pollutant emissions requires conflicting measures to reducing CO<sub>2</sub> emissions. This 'technological trade-off' makes it extremely difficult to decrease CO<sub>2</sub> emissions and pollutants simultaneously. The EU truck industry believes that it is possible to deliver the CO<sub>2</sub> reductions proposed under the third recommendation of this paper (see below), but only provided that the current Euro VI emission standard remains in place till 2030. Any changes to today's Euro standard would pose significant challenges to meeting future CO<sub>2</sub> targets.

## 2. GUARANTEE ROBUSTNESS OF THE BASELINE

In order to ensure that future CO<sub>2</sub> standards for heavy-duty vehicles are calculated properly and that they will deliver CO<sub>2</sub> reductions in practice, these standards need to be based on a statistically solid baseline. In this respect, certified procedures and VECTO are important instruments to ensure the transparency of the process, allowing for data comparability across vehicles and manufacturers.

The VECTO computer simulation tool (developed by the Commission) models CO<sub>2</sub> emissions from a wide variety of trucks. It can provide vehicle-specific CO<sub>2</sub> figures for various mission profiles, taking into account factors such as specific usage patterns, vehicle configuration and payloads.

The upcoming EU legislation on the certification of CO<sub>2</sub> from heavy-duty vehicles will require a mandatory declaration of CO<sub>2</sub> values for each truck using VECTO. That is why when it comes to

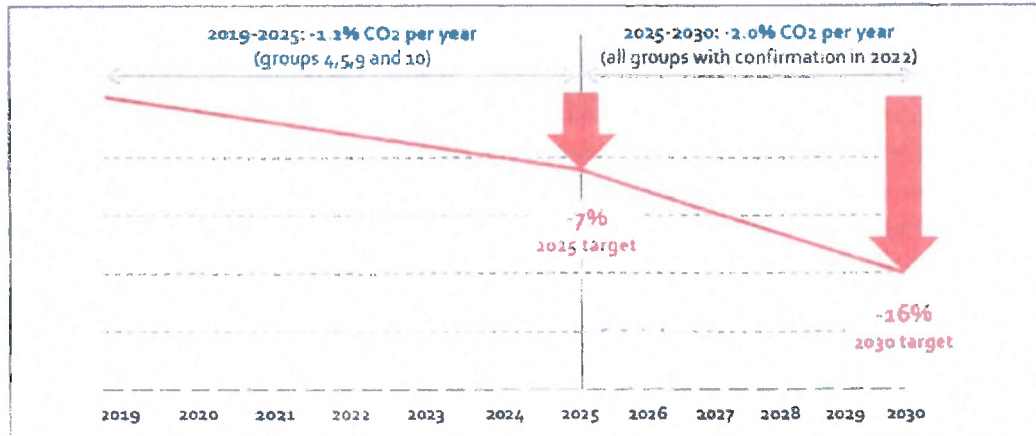


setting future CO<sub>2</sub> standards, any credible baseline for future limits must be based on VECTO-generated CO<sub>2</sub> data (starting in 2019, with the first official data available at the beginning of 2020).

### 3. DEFINE AMBITION LEVEL AND TIMING FOR 2025 AND 2030

ACEA members believe that the following timing and ambition levels for future CO<sub>2</sub> standards for heavy-duty vehicles are achievable at high, but acceptable, cost. Nevertheless, the extremely short lead-time should be taken into account when setting the 2025 standard, especially given that product development of heavy-duty vehicles to be sold in 2025 is already underway:

- A 2025 CO<sub>2</sub> reduction target of 7% (ie -1.2% per year) for vehicle groups covered by the scope of the mandatory CO<sub>2</sub> declaration in 2019 (vehicle groups 4, 5, 9 and 10 – covering 80% of the EU fleet emissions); based on a 2019 baseline calculated according to certified procedures and VECTO.
- A 2030 CO<sub>2</sub> reduction target of 16% (ie -2% per year from 2025 to 2030) for all vehicle groups covered by the scope of the mandatory CO<sub>2</sub> declaration. This target would be based on the 2019 baseline and should be reviewed in 2022 according to latest CO<sub>2</sub> declaration data available.



### 4. REFLECT DIVERSITY OF THE MARKET

Future CO<sub>2</sub> standards for heavy-duty vehicles should take the shape of an overall fleet reduction target that is applied equally to all vehicle sub-groups combined with given flexibilities. Such a system would ensure a fair approach to delivering CO<sub>2</sub> reductions across the fleet while in parallel reflecting the complexity and diversity of the market and use cases. It also makes sure that all manufacturers share the responsibility to reduce CO<sub>2</sub> and that there is no discrimination with

regard to the product portfolio of a particular manufacturer.

That is why the cycles used for setting the limits should be as close as possible to the European 'real world' situation of each vehicle sub-group, allowing for the fleet reduction target to be distributed equally over the various vehicle sub-groups. Each vehicle sub-group should be defined in a way that:

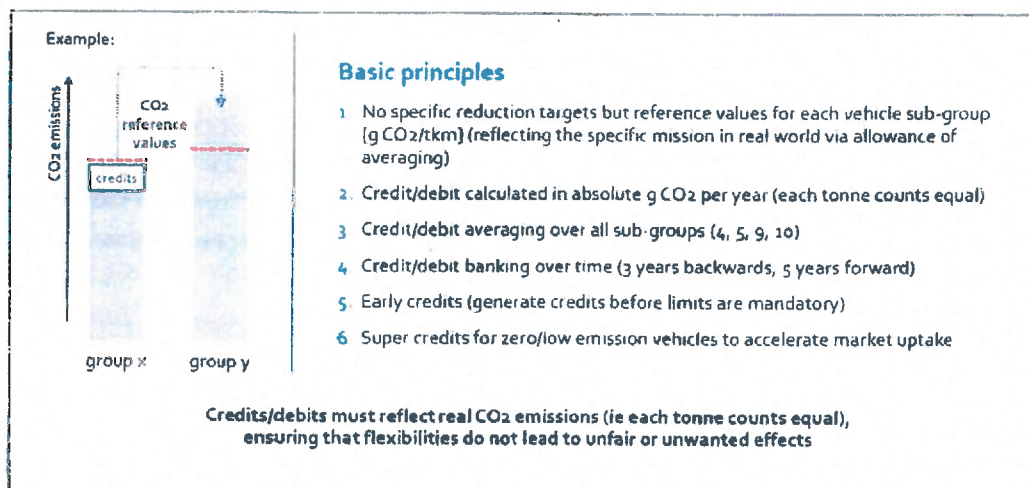
- Matches reality and is credible; each sub-group should be defined based on the main real-use conditions/applications according to the mission of the vehicle (cycle, load, etc).
- Ensures that there is a representative number of sub-groups. Enough to:
  - Differentiate between technologies and specifications, in function of the use cases and the missions concerned.
  - Allow for fair targets for different manufacturers with different portfolios.
- Guarantees that definitions are robust, both today and in light of future product changes.
  - Boundaries and loads/cycles should be robust in the short term but should also allow for adjustments in the future.

Flexibilities should be provided for the different vehicle groups and sub-groups, enabling the transfer of CO<sub>2</sub> credits and debits between the groups. For each sub-group, a reference value has to be set as the baseline and the defined fleet ambition level should be applied accordingly.

The EU truck industry believes that this approach is the most workable and reasonable way forward; it helps to avoid any distortion of the market on the one hand and allows for a single fleet ambition level on the other hand.

## 5. PROVIDE FLEXIBILITY: BANKING AND TRADING OF CO<sub>2</sub>

Applying the above-mentioned system to the various vehicle groups in the portfolios of Europe's truck manufacturers would allow for an equal distribution of efforts among all, as well as providing the best way to meet CO<sub>2</sub> emission targets and market demand at the same time. New technologies that enable trucks to drive with low or zero emissions need to be incentivised, given their very high cost. ACEA's members see 'super credits' (ie a multiplier for low- and zero-emission vehicles) as the most powerful option to accelerate market uptake of these vehicles.



## 6. CONTINUE TO UPDATE THE VECTO SIMULATION TOOL

As explained before, the baseline for future CO<sub>2</sub> standards should be based on VECTO-generated data. That is why it will be crucial that VECTO is updated regularly in the future in order to consider fuel-efficiency technologies that will be introduced by truck makers to deliver on the CO<sub>2</sub> targets.

Robust updates would provide strong incentives to truck manufacturers to put cutting-edge technology in their vehicles – thereby stimulating further CO<sub>2</sub> reductions and encouraging customers to buy the most-efficient vehicles. However, this would require a well-defined process with a clear timeline. ACEA recommends that, as from 2023 (when all vehicle classes will be certified), VECTO is reviewed on an annual basis.

This update should go hand in hand with the so-called 'ECO feature' process. When a truck manufacturer wants to introduce a new feature to reduce CO<sub>2</sub> without having to reveal it to its competitors, the ECO feature process should be used to confirm the fuel reduction benefit. Once an ECO feature has been approved and published, it should be added to VECTO as soon as possible.

## 7. FOCUS ON THE ENTIRE VEHICLE, NOT COMPONENTS

Any future CO<sub>2</sub> standard for heavy-duty vehicles should focus on the entire vehicle or vehicle combinations and not on single components; this is the most cost-effective approach. Component-based CO<sub>2</sub> standards, such as standards for engines, can even have a negative impact on the net CO<sub>2</sub> reduction potential of a vehicle, as such standards do not properly reflect how the components are actually being used (and perform) in real life. Moreover, some of the latest innovations (such as hybrid powertrains and sophisticated gear boxes) deliver significant CO<sub>2</sub> reductions, but would not be properly considered using a component-based approach.

## 8. BE CONSISTENT WITH METRICS

To be coherent with the metrics used for the mandatory declaration of CO<sub>2</sub> emissions from heavy-duty vehicles based on the VECTO calculation tool, future CO<sub>2</sub> emission standards must refer to the work done by the vehicle. Standards should therefore be defined using the following metrics: g/t\*km or g/m<sup>3</sup>\*km for heavy-goods vehicles, and g/passenger\*km for heavy-passenger vehicles.





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## 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

- 12.6 million people – or 5.7% of the EU employed population – work in the sector.
- The 3.3 million jobs in automotive manufacturing represent almost 11% of EU manufacturing employment.
- Motor vehicles account for almost €396 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 more than €50 billion invested annually.
- The automobile industry generates a trade surplus of about €90 billion for the EU.

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