

Företag/Company name	Dokumenttyp/Type of document		
AB Volvo	PM		
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Volvo Group view on the EU CO ₂ regulation	06		1 (5)
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Volvo Group view on the EU CO₂ emission performance standards for new heavy-duty vehicles

1. COM(2018) 284 final

1.1. Article 1, Subject matter and objective

The combination of reference year 2019, target years 2025 / 2030 and average reduction levels of -15% / -30% is far too ambitious. To reach -15% will require substantial changes of the trucks and the used technologies, changes that timely aren't possible to introduce to the complete range of vehicles before end of 2024. A possible solution is to move the target years forward to 2027 and 2032 and also introduce;

- a more comprehensive VECTO update covering all available technologies,
- a "VECTO fast track procedure" (see section 1.2),
- introduction of a trailer regulation,
- changed ZLEV cap and calculation and
- a rolling 5 and 3 years credit and debit system.

All together, these changes could form a reasonable, but still very ambitious, CO₂ regulation.

Proposal:

- Move the target years to 2027 and 2032 together with introduction of comprehensive VECTO updates and a fast track procedure, trailer regulation, changed ZLEV cap and a 5/3 year rolling credit/debit system.

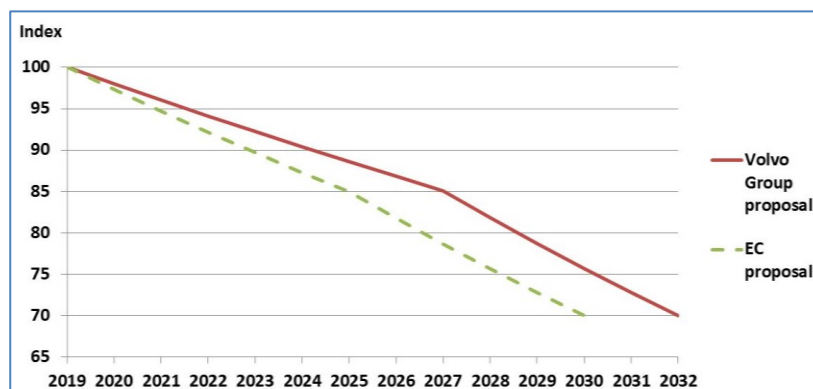


Figure 1. Move target years two years forward together with VECTO updates, a fast track procedure, trailer regulation, higher ZLEV cap and a rolling credit/debit system.

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1.2. New article: VECTO update and VECTO fast track procedure

In order to meet the very ambitious targets, a new article should be added ensuring **VECTO updates** and the implementation of a “**VECTO fast track procedure**”, sometimes called “ECO-feature process”.

VECTO updates should require annual updates of VECTO to ensure that all generally available fuel saving technologies is covered by VECTO. Example: Today we lack the possibility to reflect effects of several driver assistant systems such as predictive cruise control.

VECTO fast track procedure should allow manufacturers to demonstrate and get credits for new CO₂ saving features, not yet possible to reflect in VECTO. The technology details should only be disclosed to the Commission, not to the public. This would encourage manufacturers to implement new CO₂ saving features as soon as possible. Examples could be hybridisation, new driveline optimization strategies etc. Features accepted in the fast track procedure, should later on be implemented in VECTO, if they develop towards general availability.

Proposal:

- Ensure annual and comprehensive update of VECTO to reflect CO₂ saving technologies that are generally available on the market, including update of the standard bodies and standard trailers used in VECTO to reflect market improvements.
- Ensure implementation of a "VECTO fast track procedure", making it possible for manufacturers to demonstrate new CO₂ technologies not yet implemented in VECTO.

1.3. Article 3, Definitions

Each 'Manufacturer' is responsible to meet the targets in the regulation, meaning the person or body responsible for submitting the data relating to new heavy-duty vehicles. Each legal entity, such as Volvo Trucks, Volvo Buses and Renault trucks will thereby be treated separately, despite the fact that they all belong to the Volvo Group.

Proposal:

- Allow internal pooling between manufacturers belonging to the same group of companies. This would allow Volvo Trucks, Renault Trucks and Volvo Buses to be regarded as one manufacturer.

1.4. Article 5, Zero- and low-emission heavy-duty vehicles

In order to incentivize the deployment of zero- and low-emission heavy-duty vehicles (also known as LEVs and ZEVs), the regulation propose a ZLEV factor that can reduce the manufacturer average specific emissions by maximum only 3%. The ZLEV factor is decided based on the share of zero- and low-emission vehicles the manufacturer puts on the market. LEV is defined as vehicles emitting less than 350 g/km CO₂. In the ZLEV calculation, zero emission vehicles are counted as two vehicles.

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Introduction of LEVs and ZEVs will be needed to meet the very ambitious reduction targets. Zero emission vehicle cost is much higher than for conventional vehicles, charging infrastructure is limited, customers are sceptical regarding long haul performance, there are many hurdles to overcome.

Proposal:

- Improve the ZLEV incentive by removing or increasing the ZLEV cap.
- Change the LEV definition to a emission level 35% below the reference value of each vehicle sub-group derived from the 2019 baseline.

1.5. Article 7, Emission credits and debts

In the EC proposal, credits may only be earned if the manufacturer result is below the “trajectory line”, to be below the CO₂ target limit is not enough. Credits earned during the period 2019 to 2024 may only be used during 2025. On the other hand, debts will be created directly above the limit and are restricted to maximum +5%. Depts must be fully cleared by the end of 2029. Altogether, it creates a complicated system with low flexibility to meet changing market demands and long product life cycles.

Proposal:

- Create a rolling credit/debit system where credits and debts are earned/created below and over the CO₂ limit. Credits can be saved for five years and debts must repaid within three years. Early credits can be earned from 2020 if below the 2025 target. This kind of rolling scheme, without any demands to be at “zero” at any certain year, is already used in the current US Greenhouse Gas Emission regulation for commercial trucks & buses.

1.6. Article 8 (1), Excess emission premium

The Excess emission premium is set to 6 800 €/gCO₂/tkm based on a comparison with the penalty level proposed for passenger cars of 95 €/gCO₂/km. Trucks are considered to travel 6 times longer and carry 12 tons payload which leads to the penalty level of 6 800 €. However, from a society perspective, the positive value of driving 1 km with a passenger car and driving 1 km with a truck loaded to 12 tons, cannot be compared as an equal service. A more reasonable judgement would be to set the penalty to $6 \times 95 = 570$ €/gCO₂/tkm

The penalty of 6800 €/gCO₂/tkm is extremely high and will risk to create a distorted market. The penalties are for example probably higher than the cost for zero emission vehicles. Example:

Assume the target for a manufacturer is 850 g/km in group 5-LH and that the result 2025 is 3% above this target. If 1.8% of the trucks are replaced by ZEVs, the target will be met and potential fines eliminated. It also means that each ZEV will reduce the penalties by 820 000 €.

Conclusion: If penalties are higher than vehicle cost, the business case for selling ZEV trucks will be eliminated. Potential customers will realise that

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manufacturers are forced to “sell” ZEVs at any price in order to avoid penalties.

Proposal:

- Set the Excess emission premium to 570 €/gCO₂/tkm

1.7. Article 9, Verification of the monitoring data

The proposed regulation states that deviations found between CO₂ emissions measured in-service and CO₂ emission values in the declaration, shall be reported to the Commission. Also that Commission shall take those deviations into account for the purpose of calculating the average specific emissions of a manufacturer.

The proposal implies that the test procedure referred to in 595/2009 for pollutant emissions can be used for comparison with the CO₂ values indicated in the CO₂ declaration. The tests are not directly comparable; they are not performed under the same conditions of speed, payload and duration. The article would also mean that the outcome of a few vehicle tests, in unknown conditions, gives the Commission the possibility to change the average specific emission result of a manufacturer.

Proposal:

- Add to the article that deviations found during in-service measurements shall first be thoroughly investigated. If those deviations are proved to be caused by a systematic non-compliance to the type approval certificates, the Commission may take those deviations into account.

1.8. Article 10, Publication of data and manufacturer performance

The Commission shall determine and publish a list for each manufacturer, indicating the average specific emission of CO₂, specific emission target, the zero-and low emission factor etc. However, there are no possibilities for the manufacturer to review the results before publication.

Proposal:

- The Commission shall notify each manufacturer of its provisional calculation for that manufacturer before being published. The notification shall include data per Member State on the number of new commercial vehicles registered and their specific emissions of CO₂.

2. COM(2018) 284 final, Annex I

2.1. Table 1 – Vehicle Sub-groups (sg)

Separate vehicle sub-groups for “EMS” vehicles are missing. These vehicles, intended to pull high payloads (about 60 t GCW), are the most CO₂ efficient vehicles on the market measured in CO₂ gram/tkm, both in reality and according to VECTO calculations. Trucks intended to pull GCW of 60 tonnes and above are specified with stronger and heavier chassis and drivetrains compared to trucks intended for GCW

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of 40 tonnes. Usually they also have higher rear axle ratios to get needed start ability and hill climbing capability.

However, the proposed CO₂ emission performance standards for new heavy-duty vehicles are putting these high capacity vehicles in the same vehicle sub-groups as trucks intended to pull maximum 40/44 tons GCW. It also evaluates the CO₂ performance under low payload conditions, the average used payload is only 13 tonnes despite the fact that the maximum payload is about 35-40 tonnes.

The result is that these highly efficient trucks are being penalized by getting higher CO₂ emissions per ton-km. A fair treatment would be obtained by having separate sub-groups for trucks with higher power ratings and by applying the “EMS” duty cycles and payloads already defined in the CO₂ declaration regulation.

Proposal:

- Create two new sub-groups:
 - Rigid lorries 6x2, sleeper cab, >550hp
 - Tractors 6x2, sleeper cab, >550hpApply the “Long haul EMS” (LER) mission profile in VECTO to these new sub-groups

2.2. Table 2 – Mission profile weights (Wsg,mp)

In the proposed regulation, 30% of the final CO₂ emission result comes from mission profiles with “low” payload and 70% with “reference” payload.

The “reference” payloads are set to 50-75% of maximum payload, in order to reflect the average payload during normal use, including both driving fully loaded and empty. The “low” payload is set to 10% of maximum payload to reflect empty runs. The result is that a 6x2 rigid lorry with day cab will only carry an average of 6,3 ton payload, a 4x2 long haul tractor only 13,8 ton in the limit value calculations.

All in all, the proposal to use 30% low load and 70% reference load may lead to unintended consequences in the form of higher CO₂ emissions. 30% low load is not reflecting real driving conditions and may force manufacturers to optimize trucks against driving cycles that aren’t used on-road.

Proposal:

- Change the weight factors to 100% “reference” load.