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COM(2023) 88 final

2023/0042 (COD)

Proposal for a

**REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL**

**amending Regulation (EU) 2019/1242 as regards strengthening the CO<sub>2</sub> emission performance standards for new heavy-duty vehicles and integrating reporting obligations, and repealing Regulation (EU) 2018/956**

(Text with EEA relevance)

{SEC(2023) 100 final} - {SWD(2023) 88 final} - {SWD(2023) 89 final}

## EXPLANATORY MEMORANDUM

### 1. CONTEXT OF THE PROPOSAL

#### • Reasons for and objectives of the proposal

As one of the key elements of the [European Green Deal](#), which sets the Commission's commitment to tackling climate and environmental-related challenges, the [European Climate Law](#) enshrines in legislation the EU's commitment to reach the climate neutrality target by 2050 and raise the intermediate ambition by setting the target of at least 55% net emission reduction by 2030 compared to 1990. This is in line with the EU's commitment to global climate action under the Paris Agreement. The crisis linked to the invasion of Ukraine by Russia makes the case to reduce EU dependency on fossil fuel even stronger, as highlighted in the [REPowerEU plan](#), setting out actions to save energy, diversify supply, substitute fossil fuels and carry out smart investments and reforms in all economic sectors.

Road transport, in particular, is responsible for one fifth of the total greenhouse gas emissions in the EU, and its emissions show an increasing trend. The case for moving to [zero-emission mobility](#) becomes even stronger and clearer in view of reducing as quickly as possible EU energy dependency, considering that road transport is also responsible for one third of all final energy consumed in the EU. In this respect, the REPowerEU Plan underlines the need to enhance energy savings and efficiencies in the transport sector and accelerate the transition towards zero-emission vehicles combining electrification and fossil-free hydrogen to replace fossil fuels.

In order to deliver on these increased climate targets, in July 2021 the Commission adopted a comprehensive [package of consistent policy proposals](#) as part of the '[Fit for 55](#)' package'.

. Transport is also responsible for more than two thirds of all NO<sub>x</sub> emissions and accounts for a significant proportion (around 10 % or more) of the total emissions of other pollutants. Road transport, in particular, continues to account for a significant proportion of emissions of all the main air pollutants (with the exception of SO<sub>x</sub>).

Without further measures, this sector will not provide a sufficient contribution to the climate and zero pollution objectives for 2030 and 2050 and to reduce EU energy dependency. The policy scenarios that underpin the Climate target Plan and the Fit for 55 package show that increased ambition will be necessary for the reduction of CO<sub>2</sub> emissions from HDVs, alongside policies to improve the freight transport systems, including modal shift.

The heavy-duty vehicle (HDV) sector is responsible for more than a quarter of GHG emissions from road transport in the EU and for over 6% of total EU GHG emissions. In 2019, GHG emissions from HDVs were 44% and 37% higher than emissions from total aviation and maritime transport respectively

Overall the automotive industry is of key importance for the EU economy and accounts for over 7% of the EU's GDP. It provides jobs - directly or indirectly, in manufacturing, sales, maintenance, construction and transport and transport services - to 14.6 million Europeans. The EU is among the world's biggest producers of motor vehicles and demonstrates technological leadership in this sector. EU automotive investment in R&D amounts to €60.9 billion annually. The importance of the heavy-duty sector within the automotive industry is significant, with many major production sites for heavy-duty vehicles in the EU. While the number of annually produced new heavy-duty vehicles in the EU of about 500 000 units is significantly smaller than the number of cars, the value added per unit produced is significantly higher for heavy-duty vehicles.

The automotive sector is undergoing a significant structural transformation, including changes in clean and digital technologies, in particular the shift from internal combustion engines towards zero- and low-emission technologies, as well as increasingly connected vehicles. The ambition should be to empower the automotive sector to continue and strengthen its leadership in the technologies of the future.

The HDV **CO<sub>2</sub> emission standards** are key drivers for reducing CO<sub>2</sub> emissions in the sector. The **general objective** of this proposal is to provide new emission standards to reduce CO<sub>2</sub> emissions and contribute to the shift to zero-emission mobility in the broader context of increased EU climate ambition by 2030 and EU climate neutrality by 2050.

The proposal serves **three specific objectives**. The first is to **reduce CO<sub>2</sub> emissions** from heavy-duty vehicles cost-effectively, in line with the EU climate goals while contributing to improving EU energy security. Considering that the effect of the HDV CO<sub>2</sub> emission standards on the reduction of emissions from the stock of vehicles is not immediate, and considering the dynamics of the fleet renewal, early action is important to ensure the achievement of the long-term objective.

The second specific objective is to provide benefits for European **transport operators and users**, most of which are SMEs, resulting from a wider deployment of more energy-efficient vehicles. The HDV CO<sub>2</sub> emission performance standards trigger manufacturers to increase the supply of zero-emission vehicles so that consumers can benefit from more affordable zero-emission vehicle models and significant energy savings from their use, hence decreasing the total cost of ownership of such vehicles.

The third specific objective is to strengthen the EU's industrial **technological and innovation leadership** by channelling investments into zero-emission technologies. While the automotive sector has been successful in developing and manufacturing advanced internal combustion engine vehicle technologies and marketing them worldwide, it needs to increasingly channel investments in zero-emission technologies to become a leading actor in the ongoing global transition towards zero-emission mobility.

- **Consistency with existing policy provisions in the policy area**

This initiative is closely interlinked with the proposals adopted under the 'fit for 55' package.

By ensuring a reduction of road transport emissions, the CO<sub>2</sub> emission standards notably support Member States in meeting their targets under the Effort Sharing Regulation. Since they incentivise the electrification of vehicles, they contribute both to the energy efficiency objectives and by providing a complementary route to using renewable energy also to the renewables objective. The proposal is also in line with the proposals that came out of the Conference on the Future of Europe, in particular proposals 3 and 4 on climate change, energy, transport, which explicitly underline to further reduce dependencies from oil and gas and to promote the use of electric vehicles as well as investments in the necessary recharging infrastructure.

There are clear complementarities between the CO<sub>2</sub> emission standards and the emissions trading for buildings and road transport. The CO<sub>2</sub> emission standards address the supply of more fuel-efficient and zero-emission vehicles, setting requirements on vehicle manufacturers with regard to their new vehicle fleets. The extension of emissions trading concerns the fuel use in the entire vehicle stock. It could increase both the demand for more fuel-efficient vehicles and for zero-emission vehicles, thus facilitating the fulfilment of the CO<sub>2</sub> efficiency objectives of the vehicle manufacturers.

The CO<sub>2</sub> emission standards, supplying new zero-emission vehicles to the market, are also a complementary measure to the Renewable Energy Directive, which incentivises the uptake of renewable and low-carbon fuels for the combustion engine vehicles in the stock.

There are also important synergies between CO<sub>2</sub> emission standards and a strengthened emissions trading system (ETS), and the Renewable Energy Directive. The emissions trading system and the Renewable Energy Directive will drive the decarbonisation of power generation so that zero-emission vehicles, incentivised by the CO<sub>2</sub> emission standards, are progressively powered by renewable energy sources, thus achieving decarbonisation of full well-to-wheel emissions.

Important synergies also exist with the Euro 7 emission type approval proposal, ensuring that all vehicles are as clean as technologically and economically feasible. This is particularly important since even zero emission vehicles, still emit microplastics from tyres and particles from brake systems. It is proposed to regulate these non-exhaust emissions in Euro 7.

Finally, while the CO<sub>2</sub> emission standards ensure the supply of zero-emission vehicles, the **Alternative Fuels Infrastructure Regulation** is a necessary complementary instrument to address the market barrier to the deployment of infrastructure.

A combination of energy taxation, investment in charging and refuelling infrastructure, new carbon pricing and updated CO<sub>2</sub> standards leads to a balanced and cost-effective approach for the reduction of emissions from road transport, addressing market barriers and failures as well as providing investors certainty to invest in zero-emission technologies.

- **Consistency with other Union policies**

This proposal is consistent with all EU actions and policies and helps the EU achieve the increased 2030 target and a successful and just transition towards the 2050 climate neutrality target, as stated by the Commission in the European Green Deal Communication.

Together with the proposal that is part of the ‘fit for 55’ package, the Next Generation EU, the REPowerEU Plan and the Multiannual Financial Framework for 2021-2027, it will help achieve the twin green and digital transitions that Europe is aiming for. The combination of these policies will accelerate the shift to a clean and sustainable economy, linking climate action and economic growth. The initiative is also consistent with the Union policies on a clean and circular economy, sustainable and smart mobility and the objectives of the Zero Pollution Action Plan<sup>1</sup>. As accelerating the uptake of zero-emission HDVs will lead to reductions in air pollution, with co-benefits for water and soil too out of reduced pollution via atmospheric deposition, the initiative contributes to clean air objectives, including to the stricter air quality standards in the proposed revision<sup>2</sup> of the Ambient Air Quality Directives.

As announced in its Communication **Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe’s recovery**<sup>3</sup>, the Commission is engaging together with public authorities, stakeholders and social partners in a co-creation process to identify the green and digital transition pathways that will support the scale-up of the manufacturing of zero-emission vehicles, the rapid deployment of alternative fuels infrastructure and the associated up- and re-skilling of workers. The Green Deal Industrial Plan<sup>4</sup> will enhance the competitiveness of Europe's net-zero industry and support the fast transition to climate neutrality. Such plan aims to provide a more supportive environment for the scaling up of the

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<sup>1</sup> COM(2021) 400 final

<sup>2</sup> COM(2022) 542 final

<sup>3</sup> COM(2020) 350 final

<sup>4</sup> COM(2023) 62 final

EU's manufacturing capacity for the net-zero technologies and products required to meet Europe's ambitious climate targets.

This initiative is also consistent with the EU's policy for research and innovation. Support for the development of zero-emission technologies is also foreseen under the EU's Framework Programme for Research and Innovation, and in particular through Horizon Europe partnerships.

The initiative is consistent with EU funding for zero or low emission vehicles and clean transport. Funding via the Cohesion Fund, the European Regional Development Fund and the Just Transition Fund jointly amounts to € 8.2 billion for clean urban transport infrastructure, € 5.1 billion for clean urban transport rolling stock, € 1.1 billion for alternative fuels infrastructure, € 408 million for the digitalisation of urban transport - greenhouse gas emissions, and € 141 million for the digitalisation of road transport - greenhouse gas emissions. Furthermore, support from the Recovery and Resilience Facility amounts to € 7.7 billion for clean urban transport infrastructure, € 5.4 billion for clean urban transport rolling stock, € 60 million for the digitalisation of transport when dedicated in part to the reduction of greenhouse gas emissions in urban transport, € 380 million for the digitalisation of transport when dedicated in part to the reduction of greenhouse gas emissions in road transport, and € 7.6 billion for zero or low emission vehicles.

On 12 January 2023, the Foreign Subsidies Regulation entered into force. This new set of rules for addressing distortions caused by foreign subsidies will allow the EU to remain open to trade and investment, while ensuring a level playing field for all companies operating in the Single Market.

## **2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY**

### **• Legal basis**

The legal basis for this proposal is Article 192 of the Treaty of the Functioning of the European Union (TFEU). In accordance with Article 191 and 192(1) TFEU, the European Union shall contribute to the pursuit, inter alia, of the following objectives: preserving, protecting and improving the quality of the environment; promoting measures at the international level to deal with regional or worldwide environmental problems, and in particular combating climate change. Regulation (EU) [2019/1242](#) and Regulation (EU) [2018/956](#) were both based on Article 192 of the TFEU.

### **• Subsidiarity (for non-exclusive competence)**

Climate change is a trans-boundary problem which cannot be solved by national or local action alone. Coordination of climate action must be taken at the European level and, where possible, at the global level. EU action is justified on the grounds of subsidiarity as set out in Article 5 of the Treaty of the European Union. Since 1992, the European Union has worked to develop joint solutions and drive forward global action to tackle climate change. More specifically, action at the EU level will provide for cost-effective delivery of the 2030 and long-term emission reduction objectives while ensuring fairness and environmental integrity. Articles 191 to 193 of the TFEU confirm and specify EU competencies in the area of climate change.

In light of the emission reduction target for 2030, and in the perspective of the climate neutrality objective to be achieved by 2050, stronger EU action is needed to ensure a sufficiently high contribution of the road transport sector.

Although initiatives at the national, regional and local levels can create synergies, alone they will not be sufficient, also considering the inherent international dimension of road freight transport. A lack of coordinated EU action would translate into a risk of internal market fragmentation due to the diversity of national schemes, differing ambition levels and design parameters. On their own, individual Member States would also represent a market too small to drive industry-level changes and create economies of scale.

- **Proportionality**

This proposal revises the existing CO<sub>2</sub> emission standards for heavy-duty vehicles in order to contribute to the achievement of the climate targets set in the Climate Law. The proposal complies with the proportionality principle because it does not go beyond what is necessary in order to achieve the Union's objectives of reducing greenhouse gas emissions in a cost-effective manner, while ensuring fairness and environmental integrity. The projected additional costs related to the proposal are outweighed by the provided benefits.

- **Choice of the instrument**

The proposal provides for an amendment of Regulation (EU) 2019/1242, and a Regulation is therefore the only appropriate legal instrument.

### **3. RESULTS OF EX-POST EVALUATIONS, STAKEHOLDER CONSULTATIONS AND IMPACT ASSESSMENTS**

- **Ex-post evaluations/fitness checks of existing legislation**

The HDV CO<sub>2</sub> Standards Regulation (EU) 2019/1242 was adopted and entered into force in 2019. It sets new binding CO<sub>2</sub> targets starting to apply from the year 2025 onwards. An evaluation of the effective application of these provisions is not possible at this stage.

However, a revision is necessary in order to bring the Regulation in line with the ambitions of the European Green Deal and the strengthened emission reduction targets of the European Climate Law. These changes were subject to an impact assessment.

- **Stakeholder consultations**

In order to collect evidence and ensure greater transparency, the Commission organised a public consultation from 20 December 2021 to 14 March 2022. A detailed summary and the results are presented in Annex 2 to the Impact Assessment for this proposal. More precisely, the Commission sought feedback from the following stakeholders: Member States (national, regional authorities), vehicle manufacturers, component and materials suppliers, vehicle purchasers (private, businesses, fleet management companies), energy suppliers, environmental, transport and consumer NGOs, social partners, research and academia.

In addition to the public consultation, feedback was also sought through the following means: (i) Meetings with relevant industry associations, vehicle manufacturers, components and materials suppliers, transport operators, NGOs; (ii) Position papers submitted by stakeholders or authorities in the Member States. The main outcomes can be summarised as follows.

The majority of respondents supported the objectives of 'reducing CO<sub>2</sub> emissions from new HDVs in a cost-effective way in line with both the 2030 overall climate target of at least -55% and the climate neutrality objective by 2050'.

The other two objectives ('reducing EU energy consumption and import dependence on fossil fuels and strengthening technical' and 'industrial leadership and stimulating employment in the EU value chain of HDVs') were also supported by the majority of respondents, but to a lower extent compared to the first one.

Concerning the scope, in all stakeholders' groups, a majority of respondents supported setting new targets for lorries above 7.5t, urban buses and coaches.

Concerning the target levels, the consultation reflected overall support for strengthening them both in the long and the short term. Environmental NGOs and zero-emission vehicle manufacturers called for the greatest ambition, while vehicle manufacturers, transport operators, component suppliers and suppliers of fuels supported less ambitious targets. Setting standards for trailers and semi-trailers was considered important among all stakeholders except for half of the transport operators who provided mixed opinions. As for the possible introduction of a mechanism for the accounting of renewable- and low-carbon fuels in CO<sub>2</sub> target compliance, the consultation reflected mixed views.

- **Collection and use of expertise**

For the quantitative assessment of the economic, social and environmental impacts, the Impact Assessment has built on a range of scenarios developed for the PRIMES model. This analysis was complemented by applying other modelling tools, such as E3ME and the JRC DIONE model.

Monitoring data on GHG emissions and other characteristics of the new heavy-duty vehicle fleet was sourced from the annual monitoring data as reported by Member States and manufacturers and collected by the European Environment Agency (EEA) under Regulation (EU) 2018/956.

Further information was gathered through service contracts commissioned from external contractors.

- **Impact assessment**

The Impact Assessment is built on integrated modelling scenarios that reflect the interaction of different policy instruments on economic operators in order to ensure complementarity, coherence and effectiveness in achieving the 2030 and 2050 climate ambition. Such scenarios take into account the policies proposed in July 2021 as part of the 'fit-for-55' legislative package and the more recent REPowerEU Plan, as well as the proposed new Euro 7 standards.

Moreover, the Impact Assessment accompanying this proposal has been prepared and developed in line with the applicable Better Regulation guidance. The Regulatory Scrutiny Board issued a negative opinion on 16 September 2022. Following a resubmission, the Board issued a positive opinion with reservations on 6 December 2022.

Improvements, as recommended by the Board, have been incorporated into the final version

This concerns notably the following main points:

- identification of the remaining CO<sub>2</sub> emission reduction gap that the initiative aims to address
- Further description of the baseline
- Additional information on overall costs and benefits for the most relevant combinations of options and on their proportionality.
- Clarifications on the preferred option
- Discussion on the constraints and risks arising from the potential underdeployment of key technologies and supporting infrastructures, including additional analysis of uncertainties that influence the results
- Further elaboration on the international competitiveness of the HDV sector.

### *Policy options*

The impact assessment has analysed policy options grouped into topics to address the identified problems and achieve the policy objectives.

(1) CO<sub>2</sub> emission targets for new heavy-duty vehicles (scope, levels, timing, modalities);

As regards the target levels, the options considered cover three trajectories up to 2040, also reflecting the objective to achieve a reduction in transport emissions of 90% by 2050.

In order to contribute to the overall 2030 increased ambition level and the 2050 climate neutrality objective, the preferred option is to significantly strengthen the CO<sub>2</sub> EU fleet-wide targets for new heavy-duty vehicles as of 2030 and to expand its scope of application. This will provide the necessary steer to accelerate the supply to the market of zero-emission vehicles, bring benefits for vehicle users as well as stimulate innovation and technological leadership while limiting the cost increase for manufacturers. The HDV standards also contribute to reducing air pollutants.

As regards the timing for tightening the targets, the preferred option is to maintain the regulatory approach of setting targets decreasing in 5-year steps in order to take into account the development cycles in the automotive sector.

The possible revenues from excess emissions premiums would remain part of the general EU budget. The other options considered would significantly increase the administrative burden while not directly benefitting the automotive sector in its transition.

The possibility for both EU and non-EU-based small-volume manufacturers to be granted a derogation target would be introduced.

(2) specific incentives for zero- and low-emission vehicles (ZLEV);

Different options were considered as regards the incentive mechanism for ZLEV, both as regards the type of mechanism and the type of vehicles it should cover. The preferred option is to remove, as of 2030, the ZLEV incentive scheme as the market uptake of ZLEVs will be driven by the stricter CO<sub>2</sub> targets applicable from that date. This would also simplify the legislation and avoid the risk of undermining its effectiveness.

(3) a mechanism to take into account the potential contribution of renewable and low-carbon fuels for the purpose of target compliance assessment.

In this respect, two options were considered: either a carbon correction factor or a crediting scheme. However, the preferred option is not to include such an accounting mechanism, as this would not be cost-efficient, neither for the manufacturers nor for the operators and society as a whole, blur the responsibilities of different players to reach the targets, undermine the effectiveness and increase the administrative burden and complexity. Promoting the use of renewable and low-carbon fuels is done through the revision of the Renewable Energy Directive, the EU emissions trading and the Energy Taxation Directives.

- **Regulatory fitness and simplification**

In line with the Commission's commitment to Better Regulation, the proposal has been prepared inclusively, based on transparency and continuous engagement with stakeholders.

Compared to the current Regulation, the proposal is not expected to increase the administrative costs for businesses and citizens. In addition, in order to contribute to simplification, one existing provision, i.e. the ZLEV "bonus" incentive mechanism, is proposed to be removed from 2030 onwards, and an exemption for small volume manufacturers is proposed to be introduced.



- **Fundamental rights**

The proposal respects fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union<sup>5</sup>. In particular, it contributes to the objective of a high level of environmental protection in accordance with the principle of sustainable development as laid down in Article 37 of the Charter of Fundamental Rights of the European Union.

#### 4. BUDGETARY IMPLICATIONS

The analysis and processing of different datasets related to the CO<sub>2</sub> emissions of heavy-duty vehicles are essential elements of the implementation and enforcement of the CO<sub>2</sub> emission performance standards. In view of the important legal effects linked to the analysis and processing of those datasets, efforts are needed to ensure the correctness and reliability of such activities. Further resources would be required within the Commission and the European Environment Agency. A detailed breakdown of the budgetary implications is set out in the Legislative Financial Statement.

#### 5. OTHER ELEMENTS

- **Implementation plans and monitoring, evaluation and reporting arrangements**

A well-established system is already in place for monitoring the implementation of Regulation (EU) 2019/1242. Member States and manufacturers annually report the CO<sub>2</sub> emissions and fuel consumption of newly registered heavy-duty vehicles to the Commission.

The Commission, supported by the EEA, publishes every year the final monitoring data of the preceding reporting period, including the manufacturer-specific performance against the CO<sub>2</sub> targets or trajectory. The legislation will continue to rely on this well-established monitoring and compliance framework.

- **Detailed explanation of the specific provisions of the proposal**

***Article 1(1): Amendment to Article 1 – Subject matter and objectives***

Article 1 is amended to explain that the proposal also lays down the requirement for the monitoring and reporting of certain data of new heavy-duty vehicles.

***Article 1(2): Amendment to Article 2 – Scope***

Article 2 is amended in order to expand the scope of application of the Regulation to the wider scope of Regulation 2018/956, including now trailers, urban buses, coaches and other types of lorries. References to Directive 2007/46/EC<sup>6</sup> (type approval framework Directive), which was repealed from 1 September 2020, are replaced by references to the type approval Regulation (EU) 2018/858<sup>7</sup> which applies since that date. Vehicles designed and constructed or adapted for use by civil protection, fire services and forces responsible for maintaining public order are not subject to the CO<sub>2</sub> emissions targets.

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<sup>5</sup> OJ C 326, 26.10.2012, p. 391.

<sup>6</sup> Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles

<sup>7</sup> Regulation (EU) 2018/858 of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC

***Article 1(3): Amendment to Article 3 – Definitions***

Certain definitions are updated or added.

***Article 1(4): New Articles 3a and 3b***

An Article 3(a) is added, which sets out by how much the specific CO<sub>2</sub> emissions of the Union fleet of new heavy-duty motor vehicles shall be reduced in certain years, and defines how such targets are allocated to the HDV subgroups.

It also clarifies that the targets do not apply to special purpose, off-road, off-road special purpose, and vocational vehicles, such as mobile cranes, forestry or agricultural vehicles.

In Article 3b CO<sub>2</sub> emissions requirements related to the Union fleet of new trailers as well as a zero emission vehicle targets for urban buses are set. This zero emission vehicle target does not apply to coaches used for regional and long-distance passenger transport, which are only subject to the CO<sub>2</sub> emissions reduction targets set in Article 3a.

***Article 1(6): Amendment to Article 5 Zero- and low-emission heavy-duty vehicles***

Article 5 is amended to end the zero- and low-emission incentive scheme in 2029.

***Article 1(7): Amendment to Article 6 – Specific CO<sub>2</sub> emissions targets of a manufacturer***

Article 6 is amended to include the CO<sub>2</sub> emissions related to trailers, and the zero-emission vehicle target of buses in the specific CO<sub>2</sub> emissions targets of a manufacturer.

***Article 1(8): New Articles 6a – Transfer of vehicles between manufacturers and 6b – Exemption for manufacturers producing few vehicles***

A new Article 6a is added, giving the possibility to manufacturers to transfer individual vehicles for the purpose of calculating their average specific CO<sub>2</sub> emissions, subject to certain conditions.

A new Article 6b is added, which gives the manufacturers responsible for registering less than 100 new heavy-duty vehicles in the EU the possibility to be exempted from the CO<sub>2</sub> emissions targets.

***Article 1(9): Amendment to Article 7 - Emission credits and emission debts***

Article 7 is amended to allow the manufacturers to take into account emission credits or emission debts also after the reporting period of 2029. A CO<sub>2</sub> emissions reduction trajectory is also determined for the reporting period of years 2030 to 2040.

***Article 1(10): New Articles 7a – Attribution of vehicles to a manufacturer and 7b – Calculation of average specific CO<sub>2</sub> emissions of vehicles of category M***

An Article 7a is added to set how the vehicles registered shall be attributed to a manufacturer for the compliance assessment. A new article 7b is added to set how the average specific CO<sub>2</sub> emissions of vehicles of category M shall be calculated in case the primary vehicle manufacturer is not the manufacturer of the completed vehicle.

***Article 1(12): Amendment to Article 9 Verification of the monitoring data***

Article 9 is amended to cover additional cases in which type-approval authorities and manufacturers must report to the Commission any deviations from the data reported.

***Article 1(13): Amendment to Article 10 Assessment of reference CO<sub>2</sub> emissions***

Article 10 is amended to cover the assessment of the reference CO<sub>2</sub> emissions of vehicle subgroups that have been added to the extended scope.

***Article 1(14): Amendment to Article 11 – Publication of data and manufacturer performance***

A new paragraph is added to allow the Commission to complement the implementing acts referred to in the same Article when the reference emissions must be adjusted due to amendments to the procedure of CO<sub>2</sub> determination.

***Article 1(15): Amendment to Article 13 - Verification of the CO<sub>2</sub> emissions of heavy-duty vehicles in-service***

A sentence is added to Article 13(3) that set the obligation for the responsible type-approval authority to issue a statement of correction with the corrected data and transmit that statement to the Commission and the parties concerned where the data in the type approval documentation may not be corrected under Regulation (EU) 2018/858.

***Article 1(16): new Articles 13a to 13f***

Articles 13a to 13f integrate Articles 4 to 9 of Regulation (EU) 2018/956 into the amended Regulation (EU) 2019/1242.

***New Article 13a - Monitoring and Reporting by Member States***

A new Article 13a, largely corresponding to Article 4 of Regulation (EU) 2018/956, is added which sets the obligation for Member States to monitor and report certain data on the new heavy-duty vehicles.

***New Article 13b – Monitoring and Reporting by Manufacturers or other entities***

A new Article 13b, largely corresponding to Article 5 of Regulation (EU) 2018/956, is added, which sets the obligation for manufacturers or other entities to monitor and report certain data on the new heavy-duty vehicles. A new paragraph is added which clarifies the obligations for manufacturers and other entities responsible for the determination of a heavy-duty vehicle.

***New Article 13c – Central Registry***

A new article 13c, largely corresponding to Article 6 of Regulation (EU) 2018/956, is added, which sets the obligation for the Commission to keep and update a Central register.

***New Article 13d – On-road Verification Tests***

A new Article 13d, largely corresponding to Article 7 of Regulation (EU) 2018/956, is added, which sets the obligation for the Commission to monitor the results of on-road verification tests in line with Article 7 of Regulation (EU) 2018/956.

***New Article 13e – Data Quality***

A new Article 13e, largely corresponding to Article 8 of Regulation (EU) 2018/956, is added with the obligation for the Commission, competent authorities and manufacturers to ensure the data quality based on an implementing act to be adopted by the Commission.

***New Article 13f – Administrative Fines***

A new Article 13f, corresponding to Article 9 of Regulation (EU) 2018/956, is added on the administrative fines.

***Article 1(17): Amendment to Article 14 – Amendments to the Annexes***

Article 14 defines all empowerments of the Commission to amend technical elements in the Annexes with delegated acts. It combines previously existing empowerments of Regulations (EU) 2018/956 and 2019/1242 and adds new empowerments, which became necessary due to the extended scope of the proposed Regulation.

***Article 1(18): Amendment to Article 15 – Review and Report***

Article 15 suggests a review of the proposed Regulation in 2028 .

***Article 1(19): Amendment to Article 17 – Exercise of the delegation***

Paragraphs 2, 3 and 6 are updated to add the references to the empowerments contained in the newly added additional Articles integrating the former Regulation (EU) 2018/956 on the Monitoring and Reporting.

***Article 2*** repeals Regulation (EU) 2018/956.

***Article 3*** sets the entry into force of this Regulation.

Proposal for a

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(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,  
Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

After transmission of the draft legislative act to the national parliaments,

Having regard to the opinion of the European Economic and Social Committee<sup>1</sup>,

Having regard to the opinion of the Committee of the Regions<sup>2</sup>,

Acting in accordance with the ordinary legislative procedure,

Whereas:

- (1) Tackling climate and environmental-related challenges and reaching the objectives of the Paris Agreement, adopted in December 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), are at the core of the Communication on the “European Green Deal”, adopted by the Commission on 11 December 2019<sup>3</sup>. The necessity and value of the European Green Deal have only grown in light of the very severe effects of the COVID-19 pandemic on the health and economic well-being of the Union’s citizens.
- (2) The European Green Deal combines a comprehensive set of mutually reinforcing measures and initiatives aimed at achieving climate neutrality in the Union by 2050, and sets out a new growth strategy that aims to transform the Union into a fair and prosperous society with a modern, resource-efficient and competitive economy, where economic growth is decoupled from resource use. It also aims to protect, conserve and enhance the Union's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts. At the same time, this transition affects women and men differently and has a particular impact on some disadvantaged groups, such as older people, persons with disabilities and persons with a minority

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<sup>1</sup> OJ C [...], [...], p. [...].

<sup>2</sup> OJ C [...], [...], p. [...].

<sup>3</sup> Commission Communication of 11 December 2019 on the European Green Deal, COM(2019) 640 final.

racial or ethnic background. It must therefore be ensured that the transition is just and inclusive, leaving no one behind.

- (3) The Union committed to reducing the Union's economy-wide net greenhouse gas emissions by at least 55 % by 2030 below 1990 levels in the updated nationally determined contribution submitted to the UNFCCC Secretariat on 17 December 2020.
- (4) In Regulation (EU) 2021/1119 of the European Parliament and of the Council<sup>4</sup>, the Union has enshrined the target of economy-wide climate neutrality by 2050 in legislation. That Regulation also establishes a binding Union domestic reduction commitment of net greenhouse gas emissions (emissions after deduction of removals) of at least 55 % below 1990 levels by 2030.
- (5) All sectors of the economy are expected to contribute to achieving those emission reductions, including the road transport sector.
- (6) The "Fit for 55" legislative package, adopted by the European Commission in 2021, aims to implement the 2030 greenhouse gas emissions reduction target. It covers a range of policy areas. The revision of Regulation (EU) 2019/1242 of the European Parliament and of the Council<sup>5</sup> is an integral part of that package.
- (7) The REPowerEU Communication<sup>6</sup> outlined a plan to make the Union independent from Russian fossil fuels well before the end of this decade. The Communication highlights the importance, among others, of further increasing the efficiency and reducing fossil consumption in the transport sector, where electrification can be combined with the use of fossil-free hydrogen to replace fossil fuels.
- (8) In order to contribute to the reduction in net greenhouse gas emissions of at least 55 % by 2030 compared to 1990 and in conformity with the energy efficiency first principle, it is necessary to strengthen the reduction requirements set out in Regulation (EU) 2019/1242 for heavy-duty vehicles. A clear pathway also needs to be set for further reductions beyond 2030 to contribute to achieving the climate neutrality objective by 2050.
- (9) The strengthened CO<sub>2</sub> emission reduction requirements should incentivise an increasing share of zero-emission vehicles being deployed on the Union market whilst providing benefits to users and citizens in terms of air quality and energy savings, as well as ensuring that innovation in the automotive value chain can be maintained. Zero-emission vehicles currently include battery electric vehicles, fuel-cell and other hydrogen-powered vehicles, and technological innovations are continuing.
- (10) Against that background, new strengthened CO<sub>2</sub> emission reduction targets should be set for new heavy-duty vehicles for the period 2030 onwards. Those targets should be set at a level that will deliver a strong signal to accelerate the uptake of zero-emission

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<sup>4</sup> Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021, p. 1).

<sup>5</sup> Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202).

<sup>6</sup> Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, REPowerEU Plan, COM(2022)230 final of 18.5.2022.

vehicles on the Union market and to stimulate innovation in zero-emission technologies in a cost-efficient way.

- (11) The updated New Industrial Strategy<sup>7</sup> foresees the co-creation of green and digital transition pathways in partnership with industry, public authorities, social partners and other stakeholders. In this context, a transition pathway is being developed for the mobility ecosystem to accompany the transition of the automotive value chain. The pathway takes particular heed of small and medium-sized enterprises in the automotive supply chain, of the consultation of social partners including by Member States, and also build on the European Skills Agenda with initiatives like the Pact for Skills to mobilise the private sector and other stakeholders to up-skill and re-skill Europe's workforce in view of the green and digital transitions and on the Talent Booster Mechanism in the framework of the Harnessing Talents in EU regions initiative. The appropriate actions and incentives at the European and national level to boost the affordability of zero-emission vehicles are also being addressed in the pathway. This could, for example, include the possibility for Member States to use the proposed Social Climate Fund to assist micro-enterprises in the purchasing of zero-emission trucks and lorries.

The Green Deal Industrial Plan<sup>8</sup> will enhance the competitiveness of Europe's net-zero industry and support the fast transition to climate neutrality. Such plan aims to provide a more supportive environment for the scaling up of the EU's manufacturing capacity for the net-zero technologies and products required to meet Europe's ambitious climate targets.

- (12) The Union fleet-wide targets are to be complemented by the necessary roll-out of recharging and refuelling infrastructure as set out in the Commission Proposal for a regulation on the deployment of alternative fuel infrastructure<sup>9</sup>.
- (13) The transition to climate neutrality requires significant investments in the electricity grids including enhanced capacity, resilience and storage, as well as additional connections. Concerning the heavy-duty vehicles, with the target levels proposed in Article 3a for the year 2030 the share of zero emission vehicles in the total fleet of vehicles circulating on the road as well as the electricity consumption in the sector will remain limited. Therefore the related impact on the electricity grid will remain limited as well.
- (14) Manufacturers should be provided with sufficient flexibility in adapting their fleets over time in order to manage the transition towards zero-emission vehicles in a cost-efficient manner, and it is therefore appropriate to maintain the approach of decreasing target levels in five-year steps.
- (15) Due to the heterogeneous structure of the total truck fleet, it is not possible to fully predict whether for all niche uses, technological developments will be quick enough to ensure that zero-emission tailpipe technology is a viable choice. This may include uses such as long-haul heavy-duty vehicles in specific territorial morphology and

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<sup>7</sup> Commission Communication on Updating the 2020 New Industrial Strategy: Building a stronger Single Market for Europe's recovery, COM(2021) 350 final of 5 May 2021.

<sup>8</sup> COM(2023) 62 final

<sup>9</sup> Proposal for a Regulation of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU of the European Parliament and of the Council, 14.7.2021, COM/2021/559 final.

meteorological circumstances, coaches and lorries for critical security and safety applications that cannot be fulfilled by zero-emission tailpipe technologies. The vehicles in question should constitute a limited share of the entire heavy-duty vehicle fleet. In view of such considerations, some margin in the 2040 target should be left to accommodate developments in technology yet to occur.

- (16) Contracting authorities or contracting entities should consider, when basing the award of contracts for the purchase or the use of vehicles referred to in point 4.2 of Annex I, the resilience of supply, including by considering the “Guidance on the participation of third country bidders and goods in the EU procurement market” (C(2019) 5494 final).
- (17) With the stricter Union fleet-wide targets from 2030 onwards, manufacturers will have to deploy significantly more zero-emission vehicles on the Union market. In that context, the incentive mechanism for zero- and low-emission vehicles (‘ZLEV’) would no longer serve its original purpose and would risk undermining the effectiveness of Regulation (EU) 2019/1242. The ZLEV incentive mechanism should therefore be removed as of 2030.
- (18) The possibility of assigning the revenue from the excess emission premiums to a specific fund or relevant programme has been evaluated as required pursuant to Article 15(4) of Regulation (EU) 2019/1242, with the conclusion that this would significantly increase the administrative burden, while not directly benefit the automotive sector in its transition. Revenue from the excess emission premiums should therefore continue to be considered as revenue for the general budget of the Union in accordance with Article 8(4) of Regulation (EU) 2019/1242.
- (19) The subject matter should be enlarged to also cover the monitoring and reporting obligations which are integrated into Regulation (EU) 2019/1242 by means of this Regulation.
- (20) Regulation (EU) 2019/1242 should be amended in order to cover the same scope as Regulation (EU) 2018/956 of the European Parliament and of the Council<sup>10</sup>.
- (21) For vehicles, which are not in the scope of the automotive type-approval legislation, such as agricultural and forestry tractors, vehicles designed and constructed for the use by armed forces and track-laying vehicles, the CO<sub>2</sub> emissions are not determined and therefore these vehicles do not have to meet the CO<sub>2</sub> targets set in this Regulation.

Vehicles designed and constructed or adapted for use by civil protection, fire services and forces responsible for maintaining public order, or urgent medical care that are voluntarily type-approved should also be exempted from having to meet the CO<sub>2</sub> targets of this Regulation in order not to create an incentive to no longer type-approve such vehicles voluntarily, which would have negative safety and environmental implications, unless the manufacturer asks for including these vehicles.

Member States should also be entitled to indicate an exemption from having to meet the targets for vehicles, not specifically designed, but registered, for use by civil protection, fire services, forces responsible for maintaining the public order, armed

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<sup>10</sup> Regulation (EU) 2018/956 of the European Parliament and of the Council of 28 June 2018 on the monitoring and reporting of CO<sub>2</sub> emissions from and fuel consumption of new heavy-duty vehicles (OJ L 173, 9.7.2018, p.1).



services or urgent medical care, such as normal coaches used for the transport of police or army forces, by confirming that such exemption responds to the public interest.

As for certain vehicle groups, which are type-approved, CO<sub>2</sub> emissions are not determined yet for technical reasons, these vehicles do not have to meet the CO<sub>2</sub> targets set by this Regulation. These are for example special purpose vehicles, such as mobile cranes, carriers of hydraulic multi-equipment or exceptional load transport vehicles, off-road vehicles, such as certain vehicles used for mining, forestry and agricultural purposes, as well as other vehicles with non-standard axle configurations such as vehicles with more than 4 axles or more than 2 driven axles, small buses with a maximum mass lower than 7,5 t, and small lorries with a maximum mass lower than 5t.

Vocational vehicles, such as garbage trucks, tippers or concrete mixers, should continue to be exempted from the calculation of average specific CO<sub>2</sub> emissions of manufacturers.

- (22) Certain definitions should be introduced in order to harmonize the terminology with that of the vehicle type-approval legislation of the Union, in particular Regulation (EU) 2018/858 of the European Parliament and of the Council<sup>11</sup> and Commission Regulation (EU) 2017/2400<sup>12</sup>.
- (23) For the purposes of the newly introduced transfer of vehicles between manufacturers and of establishing an exemption for manufacturers producing only few vehicles, a definition of the term of ‘group of connected entities’ should be added to Regulation (EU) 2019/1242, in substance following the terminology used in Regulation (EU) 2019/631 of the European Parliament and of the Council<sup>13</sup> for light-duty vehicles.
- (24) For defining the obligations of individual manufacturers, Union fleet-wide CO<sub>2</sub> reduction targets for the new heavy-duty vehicle fleet should be translated into specific reduction targets for subgroups that should be defined by the technical characteristics of the vehicles they comprise.
- (25) Since the CO<sub>2</sub> emissions related to trailers have a strong impact on the overall CO<sub>2</sub> emissions and energy consumption of motor vehicles, respective targets for the trailers should also be defined.
- (26) Due to the technical readiness of the sub-sector and the need to improve air quality in cities, a mandatory minimum share of new zero-emission urban buses should be set.

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<sup>11</sup> Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC.

<sup>12</sup> Commission Regulation (EU) 2017/2400 of 12 December 2017 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the determination of the CO<sub>2</sub> emissions and fuel consumption of heavy-duty vehicles and amending Directive 2007/46/EC of the European Parliament and of the Council and Commission Regulation (EU) No 582/2011 (OJ L 349, 29.12.2017, p. 1).

<sup>13</sup> Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO<sub>2</sub> emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 (OJ L 111, 25.4.2019, p. 13).

- (27) A mandatory minimum share of zero-emission urban buses should reflect the societal need for affordable public transport, including in rural areas. The increased supply of zero-emission urban buses that result from such a mandatory minimum share should have a positive effect on purchasing cost, both in terms of upfront purchase price and the total cost of ownership of zero-emission urban buses, reflecting fossil fuel savings resulting from their operation. Joint procurement of urban buses building on the Clean Bus Platform can bring the purchasing cost of such buses further down, and the proposed Social Climate Fund could be used by Member States to support vulnerable citizens with reduced or free public transport tickets or subscriptions. Finally, regional and long-distance buses and coaches, including for transport in rural areas, remain subject to the targets for heavy duty vehicles. Support from the Social Climate Fund could address specific needs of rural areas and prevent transport poverty<sup>14</sup> by securing access to affordable public transport.
- (28) The zero- and low-emission factor should last be applied for the reporting period of the year 2029, because it is no longer considered necessary after that time as an incentive to promote the market entrance of zero-emission vehicles.
- (29) As commercial rather than legal entities should be considered for compliance, economically connected manufacturers should, within certain limits, be allowed to transfer vehicles between them for the purposes of accounting these vehicles under Regulation (EU) 2019/1242.
- (30) Furthermore, in order to strengthen the development of new zero-emission technologies in specialized small- and medium-sized companies, it should also be possible to transfer zero-emission vehicles between non-connected entities.
- (31) In order to avoid disproportionately high costs of compliance and in order to reduce the administrative burden, manufacturers producing few vehicles fulfilling certain legal requirements should be exempted from compliance with CO<sub>2</sub>-emission targets. As they are required to comply with the reporting obligations of Regulation (EU) 2019/1242, there is an appropriate control mechanism for those manufacturers.
- (32) The existing system of multi-annual emission credits and emission debts should be extended to 2039 as reduction targets keep strengthening beyond 2030 until 2040 and require forward-looking technical developments of manufacturers during that period.
- (33) Regulation (EU) 2019/1242 should for each vehicle category clearly stipulate who is the manufacturer to whom a vehicle should be attributed, thereby specifically taking account of the different constellations for vehicles of category M.
- (34) The rules on the verification of the monitoring data should also cover possible ex post corrections of errors in such reported data and how the Commission should handle such corrections for implementing the CO<sub>2</sub>-emission fleet targets.
- (35) The assessment of the reference CO<sub>2</sub> emissions should be amended to also cover the vehicle subgroups newly included in the scope of Regulation 2019/1242.
- (36) Monitoring and reporting by manufacturers and Member States is an essential precondition for the implementation of Regulation (EU) 2019/1242. Merging Regulation (EU) 2018/956 into Regulation (EU) 2019/1242 should produce synergies and allow for interpretation of the provisions taking into account the objectives of both Regulations.

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<sup>14</sup> In line with the definition in the Social Climate Fund regulation, article 2(2a)

- (37) On the occasion of merging monitoring and reporting provisions into Regulation (EU) 2019/1242, the opportunity should be seized to slightly modify those provisions in light of the experiences gained from the first two reporting cycles under Regulation (EU) 2018/956.
- (38) Taking account of the fact that the determination will no longer be carried out by manufacturers alone, reporting of CO<sub>2</sub> emissions and other technical data of the vehicles should be extended beyond manufacturers to those entities which perform the determination of the vehicles under Regulation (EU) 2017/2400 and Commission Implementing Regulation (EU) 2022/1362<sup>15</sup>. The data to be reported should comprise the manufacturer's record file.
- (39) The Commission should be enabled to take into account technical progress, the evolution of freight transport logistics, necessary adjustments based on the application of this Regulation and amendments of the underlying type-approval legislation and to ensure that the data requirements and the monitoring and reporting procedure remain relevant over time for assessing the heavy-duty vehicle fleet's contribution to CO<sub>2</sub> emissions, to ensure the availability of data on new and advanced CO<sub>2</sub> reducing technologies and on the results of on-road verification test and to ensure that the air drag value ranges remain relevant for information and comparability purposes, as well as to supplement the provisions on administrative fines.
- (40) For these reasons, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of amending the criteria defining vehicles sub-groups, defining vocational vehicles, for the operational ranges of different powertrain technologies, the list and weight of mission profiles, the payloads, passenger numbers, passenger masses, technically permissible maximum payloads, technically permissible maximum passenger number and cargo volumes of vehicle sub-groups and annual mileages values, amending the data requirements and the monitoring and reporting procedure laid down in Annexes to this Regulation, of specifying the data to be reported by the Member States for the monitoring of the results of on-road verification tests, of amending the air drag value ranges, and of defining the criteria, the calculation and the method of collection of administrative fines imposed on manufacturers. It is of particular importance that the Commission carry out appropriate consultations during its preparatory work, including at expert level, and that those consultations be conducted in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.
- (41) Regulation (EU) 2018/956 should be repealed with a timeline allowing the reporting period ongoing at the moment of entry into force of this Regulation be concluded under the rules applicable at the beginning of that reporting period, including all after-

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<sup>15</sup> Commission Implementing Regulation (EU) 2022/1362 of 1 August 2022 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the performance of heavy-duty trailers with regard to their influence on the CO<sub>2</sub> emissions, fuel consumption, energy consumption and zero emission driving range of motor vehicles and amending Implementing Regulation (EU) 2020/683 (OJ L 205, 5.8.2022, p. 145).

processing of the data collected. Accordingly, this Regulation should be applied from the beginning of the following reporting period.

(42) Regulation (EU) 2019/1242 should therefore be amended accordingly,

HAVE ADOPTED THIS REGULATION:

#### *Article 1*

### **Amendments to Regulation (EU) 2019/1242**

Regulation (EU) 2019/1242 is amended as follows:

(1) Article 1 is replaced by the following:

‘Article 1

#### **Subject matter and objective**

1. This Regulation establishes CO<sub>2</sub> emissions performance requirements for new heavy-duty vehicles that contribute to achieving the Union's target of reducing its greenhouse gas emissions, as laid down in Regulation (EU) 2018/842<sup>16</sup>, and the objectives of the Paris Agreement<sup>17</sup> and to ensure the proper functioning of the internal market.

2. This Regulation also lays down the requirements for the reporting of CO<sub>2</sub> emissions from and fuel consumption of new heavy-duty vehicles registered in the Union.’;

(2) Article 2 is amended as follows:

(a) paragraph 1 is replaced by the following:

‘1. This Regulation shall apply to new vehicles, which have either been type-approved or approved individually under Regulation (EU) 2018/858 or do not require type-approval under Article 2(3) of the same Regulation, belonging to the following categories:

(a) M<sub>2</sub> and M<sub>3</sub>;

(b) N<sub>1</sub>, which do not fall under Regulation (EU) 2019/631, N<sub>2</sub> and N<sub>3</sub>;

(c) O<sub>3</sub> and O<sub>4</sub>.

For the purposes of this Regulation, those vehicles shall be referred to as heavy-duty vehicles. Vehicles falling under points (a) and (b) shall be referred to as heavy-duty motor vehicles.

The vehicle categories referred to in this Regulation refer to the vehicle categories as defined in Article 4 of Regulation (EU) 2018/858 and Annex I thereto.’;

(b) paragraph 2 is amended as follows:

(i) the first subparagraph is replaced by the following:

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<sup>16</sup> Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013 (OJ L 16, 19.6.2018, p. 26).

<sup>17</sup> OJ L 282, 19.10.2016, p.4.

‘2. The vehicles referred to in paragraph 1 shall, for the purposes of this Regulation, be considered as new heavy-duty vehicles in a given reporting period, if they are registered in the Union for the first time in that period and have not been previously registered outside the Union.’;

(ii) the following subparagraph is added:

‘Paragraph 1 shall not apply to vehicles first registered for a period not exceeding one month and registered for the sole purpose of transition to a country outside of the Union.’;

(c) The following paragraphs 4, 5 and 6 are added:

‘4. Notwithstanding Article 2(3) of Regulation (EU) 2017/2400, approved vehicles falling under Article 2(3), point (b), of Regulation (EU) 2018/858 shall not be subject to the CO<sub>2</sub> emission targets set out in Article 3a of this Regulation, unless the manufacturer chooses to include those vehicles in the calculation of its specific CO<sub>2</sub> emissions and targets when reporting the vehicle in accordance with Part B of Annex IV to this Regulation.

5. Vehicles other than those referred to in paragraph 4 registered for use by civil protection, fire services, forces responsible for maintaining the public order, armed services or urgent medical care shall not be subject to the CO<sub>2</sub> emission targets under Article 3a, if a Member State so indicates in the registration and reporting process, thereby confirming in the data reported in accordance with Part A of Annex IV that the purpose of the vehicle cannot be equally served by a ZEV and it is thus in the public interest to register a vehicle with a combustion engine to fulfil that purpose.

6. The reporting obligations laid down in Articles 13a to 13f shall also apply to the vehicles that are not subject to CO<sub>2</sub> emission targets in accordance with paragraphs 4 and 5 of this Article.’;

(3) Article 3 is amended as follows:

(a) point (1) is replaced by the following:

‘(1) ‘reference CO<sub>2</sub> emissions’ means the average of the specific CO<sub>2</sub> emissions in the reference period of all new heavy-duty vehicles in each of the vehicle sub-groups, determined in accordance with point 3 of Annex I;’;

(b) the following points (3a) and (3b) are inserted:

‘(3a) ‘reporting period’ means the period of a given year from 1 July to 30 June of the following year;

(3b) ‘reference period’ means the reporting period of a certain year with respect to which the regulatory reduction obligations for a certain vehicle sub-group are specified under this Regulation;’;

(c) point (5) is replaced by the following:

‘(5) ‘specific CO<sub>2</sub> emissions target’ means the CO<sub>2</sub> emissions target of an individual manufacturer determined annually for the preceding reporting period in accordance with point 4 of Annex I;’;

(d) point (9) is replaced by the following:

‘(9) ‘vocational vehicle’ means a heavy-duty vehicle intended to be used for specific duties, which according to the information in its certificate of conformity, as reported by Member States, fulfills the criteria laid out in point 1.2. of Annex I;’;

(e) point (10) is deleted;

(f) the following points (10a) and (10b) are inserted:

‘(10a) ‘reporter’ means an entity which is responsible for the reporting of data to the Commission;

(10b) ‘determination of a heavy-duty vehicle’ means the determination of its CO<sub>2</sub> emissions or input parameters according to Article 9 of Regulation (EU) 2017/2400 or the assessment of its performance with regard to its influence on CO<sub>2</sub> emissions and fuel consumption according to Article 8 of Commission Implementing Regulation (EU) 2022/1362;’;

(g) point (11) is replaced by the following:

‘(11) ‘zero-emission vehicle’ means the following vehicles:

(a) a heavy-duty motor vehicle with not more than 5 g/(t·km) or 5 g/(p·km) of CO<sub>2</sub> emissions as determined in accordance with Article 9 of Regulation (EU) 2017/2400;

(b) a heavy-duty motor vehicle fulfilling the conditions of point 1.1.4 of Annex I to this Regulation if no CO<sub>2</sub> emissions have been determined according to Regulation (EU) 2017/2400;

(c) a trailer equipped with a device that actively supports its propulsion and has no internal combustion engine or has an internal combustion engine emitting less than 5 g CO<sub>2</sub>/kWh as determined in accordance with Regulation (EC) No 595/2009 of the European Parliament and of the Council and its implementing measures or UNECE Regulation (EC) No 49.

(h) point (12) is replaced by the following:

‘(12) ‘low-emission heavy-duty vehicle’ means a heavy-duty vehicle, other than a zero-emission heavy-duty vehicle, with specific CO<sub>2</sub> emissions of less than half of the reference CO<sub>2</sub> emissions of all vehicles in the vehicle subgroup to which the heavy-duty vehicle belongs, as determined in accordance with point 2.3.4 of Annex I;’;

(i) the following points (16) to (23) are added:

‘(16) ‘primary vehicle of a heavy-duty vehicle’ means a primary vehicle as defined in Article 3, point (22), of Regulation (EU) 2017/2400, for the simulation of which a generic body is allocated that corresponds to the actual body of the heavy-duty vehicle with regard to its floor (low/high) deck (single/double) configurations and any other parameters as applicable;

(17) ‘completed vehicle’ means a completed vehicle as defined in Article 3, point (26), of Regulation (EU) 2018/858;

(18) ‘complete vehicle’ means a complete vehicle as defined in Article 3, point (27), of Regulation (EU) 2018/858;

(19) ‘off-road vehicle’ means an off-road vehicle as defined in Part A, point 2.1., of Annex I to Regulation (EU) 2018/858;

(20) ‘special purpose vehicle’ means a special purpose vehicle as defined in Article 3, point (31), of Regulation (EU) 2018/858;

(21) ‘off road special purpose vehicle’ means an off road special purpose vehicle as specified in Part A, point 2.3.1., of Annex I to Regulation (EU) 2018/858;

(22) ‘certificate of conformity’ means a certificate of conformity as defined in Article 3, point (5), of Regulation (EU) 2018/858;

(23) ‘public contract’, in the context of public procurement procedures and unless otherwise specified, means a public contract as defined in Article 2(1), point (5) of Directive 2014/24/EU, ‘contracts’ as defined in Article 2, point (1) of Directive 2014/25/EU, as well as ‘concessions’ as defined in Article 5, point (1) of Directive 2014/23/EU’;

(j) the following paragraph is added:

‘For the purposes of this Regulation, ‘a group of connected manufacturers’ means a manufacturer and its connected undertakings.

‘Connected undertaking’ means:

(a) undertakings in which the manufacturer has, directly or indirectly:

(i) the power to exercise more than half the voting rights; or

(ii) the power to appoint more than half the members of the supervisory board, board of management or bodies legally representing the undertaking; or

(iii) the right to manage the undertaking’s affairs;

(b) undertakings which directly or indirectly have, over the manufacturer, the rights or powers referred to in point (a);

(c) undertakings in which an undertaking referred to in point (b) has, directly or indirectly, the rights or powers referred to in point (a);

(d) undertakings in which the manufacturer together with one or more of the undertakings referred to in point (a), (b) or (c), or in which two or more of the latter undertakings, jointly have the rights or powers referred to in point (a);

(e) undertakings in which the rights or the powers referred to in point (a) are jointly held by the manufacturer or one or more of its connected undertakings referred to in points (a) to (d) and one or more third parties.’;

(4) the following Articles 3a to 3c are inserted:

‘Article 3a

### **CO<sub>2</sub> emission targets**

1. The average CO<sub>2</sub> emissions of the Union fleet of new heavy-duty motor vehicles, other than special purpose, off-road, off-road special purpose, and vocational vehicles shall be reduced by the following percentages compared to the average CO<sub>2</sub> emissions of the reporting period of the year 2019:

- (a) for vehicle sub-groups 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH for the reporting periods of the years 2025 to 2029 by 15 %,
  - (b) for all vehicle sub-groups for the reporting periods of the years 2030 to 2034 by 45 %,
  - (c) for all vehicle sub-groups for the reporting periods of the years 2035 to 2039 by 65 %,
  - (d) for all vehicle sub-groups for the reporting periods of the years 2040 onwards by 90%.
2. To these CO<sub>2</sub> emission targets, the vehicle sub-groups have to contribute as laid down in point 4.3. of Annex I.
  3. The CO<sub>2</sub> emissions related to the Union fleet of new trailers shall be improved in accordance with point 4.3 of Annex I.

### Article 3b

#### **Zero-emission vehicle target for urban buses**

1. For vehicles referred to in point 4.2 of Annex I, manufacturers shall comply with the minimum shares of zero-emission vehicles in their fleet of new heavy-duty vehicles as laid down in point 4.3 of Annex I. For new urban buses the share of zero-emissions vehicles shall be 100% as from the reporting period of the year 2030.;
2. Member States may decide to exclude from the obligation under this Article a limited share of the urban buses registered in each reporting period, confirming that the purpose of the vehicle cannot be equally served by a zero-emission vehicle and it is thus in the public interest to register a non-zero emission vehicle to fulfil that purpose, due to socio-economic cost-benefit in view of specific territorial morphology or meteorological circumstances.

The Commission is empowered to adopt delegated acts in accordance with Article 17 to define the maximum share of vehicles that a Member State can exclude, and the socio-economic cost-benefit in view of territorial morphology and meteorological circumstance justifying the exclusion referred to in the previous paragraph.

3. Regarding the use of vehicles referred to in this Article, the Commission shall be empowered to adopt delegated acts in accordance with Article 17 to provide with common technical specifications, including standards, regarding:
  - (a) the technical and open interoperability between the recharging and refuelling infrastructure and the vehicles, in terms of physical connections and communication exchange.
  - (b) the safe and secure sharing and use of the data generated.

### Article 3c

#### **Public procurement procedures**

1. Contracting authorities or contracting entities shall base the award of public contracts for the purchase or the use of vehicles referred to in Article 3b on the most economically advantageous tender which shall include the best price-quality ratio



and the security of supply contribution of the tender, in compliance with relevant international law.

2. The tender's contribution to the security of supply shall be assessed, inter alia, based on :

(a) the proportion of the products or tenders originating in third countries, as determined in accordance with Regulation (EU) No 952/2013 of the European Parliament and of the Council;

(b) the introduction by third countries of a restrictive or distortive measure on such vehicles or on the technical and open interoperability between the recharging and refuelling infrastructure and the vehicles;

(c) the availability of essential spare parts for the functioning of the equipment subject to the tender;

(d) a commitment by the tenderer that possible changes in its supply chain during the execution of the contract will not affect adversely the execution of the contract;

(e) a certification or documentation demonstrating that the organisation of the tenderer's supply chain will allow it to comply with the security of supply requirement.

3. In accordance with Article 3b, the tender's contribution to security of supply shall be given a weighting of between 15 to 40% of the award criteria. ';

(5) in Article 4, first paragraph, point (a) is replaced by the following:

'(a) the data reported for the manufacturer's new heavy-duty vehicles registered in the preceding reporting period; and';

(6) Article 5 is amended as follows:

(a) paragraph 1 is replaced by the following:

'1. Starting from 1 July 2020 and for each subsequent reporting period until the reporting period of the year 2029, the Commission shall determine for each manufacturer the zero- and low-emission factor for the preceding reporting period.

The zero-emission and low-emission factor shall take into account the number and the CO<sub>2</sub> emissions of all zero- and low-emission heavy-duty vehicles in the manufacturer's fleet.';

(b) paragraph 3 is replaced by the following:

'3. For the reporting periods from 2025 to 2029 the zero- and low-emission factor shall be determined on the basis of a 2 % benchmark in accordance with point 2.3.2 of Annex I.';

(c) paragraph 4 is replaced by the following:

'4. The zero-emission and low-emission factor shall reduce the average specific CO<sub>2</sub> emissions of a manufacturer by a maximum of 3 %. The contribution to that factor of the zero-emission vehicles of category N, other than those in vehicles sub-groups 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH, shall reduce the average specific CO<sub>2</sub> emissions of a manufacturer by a maximum of 1,5 %.';

- (7) Article 6 is replaced by the following:

‘Article 6

### **Specific CO<sub>2</sub> emissions targets of a manufacturer**

For the reporting period of the year 2025 and for each subsequent reporting period, the Commission shall determine for each manufacturer a specific CO<sub>2</sub> emissions target for the preceding reporting period. That target shall be determined in accordance with point 4.1 of Annex I.’;

- (8) the following Articles 6a and 6b are inserted:

‘Article 6a

### **Transfer of vehicles between manufacturers**

1. For the purpose of calculating the average specific CO<sub>2</sub> emissions of manufacturers in accordance with Article 4 and point 2.2 of Annex I, individual vehicles may be transferred between manufacturers, subject to the following conditions:

(a) for all transfers: the request must be jointly submitted by the transferring and the receiving manufacturer;

(b) for the transfer of vehicles other than zero-emission vehicles, the transferring and the receiving manufacturer must belong to a group of connected manufacturers;

(c) for transfers of zero-emission vehicles between manufacturers not belonging to a group of connected manufacturers: the number of zero-emissions vehicles transferred to a manufacturer must not exceed 5 % of all its new heavy-duty vehicles registered in a given reporting period.

The manufacturers shall communicate the transfer requests to the Commission using the electronic tools provided by the Commission.

2. Where the Commission considers that the conditions of a transfer are fulfilled, it shall not take the transferred vehicle into account for the calculation of relevant values for the transferring manufacturer, but will take them into account for the calculation of relevant values for the receiving manufacturer.

Article 6b

### **Exemption for manufacturers producing few vehicles**

1. If less than 100 new heavy-duty vehicles of a manufacturer were registered in a given reporting period, the average specific CO<sub>2</sub> emissions as provided for in Article 4 and point 2.7 of Annex I and the specific CO<sub>2</sub> emissions targets as provided for in Article 6 and point 4.1 of Annex I shall be set to “0” in the respective reporting period.

2. The values of the average specific CO<sub>2</sub> emissions and specific CO<sub>2</sub> emissions shall not be included in the publication under Article 11 for the manufacturers and reporting periods concerned.

3. The exemption laid down in paragraph 1 shall not be applied in a given reporting period in any of the following cases:

(a) upon request of the manufacturer;

- (b) if the manufacturer requests a transfer of vehicles in accordance with Article 6a;
  - (c) if the manufacturer is part of a group of connected manufacturers that collectively registered more than 100 vehicles in that reporting period or with another manufacturer to which the exemption of paragraph 1 does not apply.
4. Manufacturers, who are part of a group in the meaning of paragraph 3, point (c), shall inform the Commission if they registered less than 100 vehicles in a given reporting period.
  5. Manufacturers, to which the exemption laid down in paragraph 1 does not apply, shall inform the Commission in each reporting period about all their connected undertakings that fulfil the conditions of the exemption laid down in paragraph 1.
  6. The manufacturers shall communicate the necessary information to the Commission using the electronic tools provided by the Commission.’;
- (9) Article 7 is amended as follows:
- (a) in paragraph 1, first subparagraph, the introductory wording is replaced by the following:
 

‘For the purpose of determining a manufacturer’s compliance with its specific CO<sub>2</sub> emissions targets in the reporting periods of the years 2025 to 2039, account shall be taken of its emission credits or emission debts determined in accordance with point 5 of Annex I, which correspond to the number of new heavy-duty vehicles of the manufacturer in a reporting period, multiplied by:’;
  - (b) in paragraph 1, second subparagraph, ‘2029’ is replaced by ‘2039’;
  - (c) in paragraph 1, the third subparagraph is replaced by the following:
 

‘Emission debts shall be acquired in the reporting periods of the years 2025 to 2039. However, the total emission debt of a manufacturer shall not exceed 5 % of the manufacturer’s specific CO<sub>2</sub> emissions target multiplied by the number of heavy-duty vehicles of the manufacturer in that period (‘emission debt limit’).’;
  - (d) in paragraph 1, the fourth subparagraph is replaced by the following:
 

‘Emission credits and emission debts acquired in the reporting periods of the years 2025 to 2039 shall, where applicable, be carried over from one reporting period to the next reporting period. However, any remaining emission debts shall be cleared in the reporting periods of the year 2029, 2034 and 2039.’;
  - (e) paragraph 2 is replaced by the following:
 

‘2. The CO<sub>2</sub> emissions reduction trajectories shall be set for each manufacturer in accordance with point 5.1. of Annex I, based on the following linear trajectories:

    - (a) between the reference CO<sub>2</sub> emissions and the CO<sub>2</sub> emissions target for the reporting period of the years 2025 or 2030 as specified in Article 3a(1), points (a) and (b),
    - (b) between the CO<sub>2</sub> emissions target for the reporting period of the year 2025 and the CO<sub>2</sub> emissions target for the reporting period of the year 2030 as specified in Article 3a(1), point (b),

(c) between the CO<sub>2</sub> emissions target for the reporting period of the year 2030 and the CO<sub>2</sub> emissions target for the reporting period of the year 2035 as specified in Article 3a(1), point (c), and

(d) between the CO<sub>2</sub> emissions target for the reporting period of the year 2035 and the CO<sub>2</sub> emissions target for the reporting period of the year 2040 as specified in Article 3a(1), point (d).’;

(10) the following Articles 7a and 7b are inserted:

‘Article 7a

**Attribution of vehicles to a manufacturer**

When calculating the average specific CO<sub>2</sub> emissions in Article 4 and the specific CO<sub>2</sub> emissions targets in Article 6, the vehicles registered in a given reporting period shall be attributed to the following manufacturers:

- (a) for vehicles of category N, to the vehicle manufacturer as defined in Article 3, point (4a), of Regulation (EU) 2017/2400;
- (b) for vehicles of category M, to the primary vehicle manufacturer as defined in Article 3, point (29), of Regulation (EU) 2017/2400;
- (c) for vehicles of category O, to the vehicle manufacturer as defined in Article 2, point (5), of Implementing Regulation (EU) 2022/1362.

Article 7b

**Calculation of average specific CO<sub>2</sub> emissions of vehicles of category M**

For vehicles of category M, the following shall apply:

(a) for the calculation of the average specific CO<sub>2</sub> emissions in a sub-group of a manufacturer, a new heavy-duty vehicle of category M shall be considered with its specific CO<sub>2</sub> emissions as complete or completed vehicle in point 2.2.2 of Annex I and shall not be taken into account in point 2.2.3 of Annex I.

(b) however, upon request of the manufacturer as referred to in Article 7a, point (b), and subject to the condition set out in paragraph 3, a new heavy-duty vehicle of category M shall be considered with the specific CO<sub>2</sub> emissions of its primary vehicle in point 2.2.3 of Annex I and shall not be considered in point 2.2.2 of Annex I.

(c) a request referred to in point (b) for a new heavy-duty vehicle of category M shall not be admissible if its manufacturer as defined in Article 7a, point (b), and the manufacturer of its complete or completed vehicle as defined in Article 3(4a) of Regulation (EU) 2017/2400 are connected undertakings or the same legal entity. By making such a request, a manufacturer declares that this condition holds and shall provide supporting information to the Commission upon demand.

(d) the Commission, with support of the Agency, shall make available in due time in electronic format the tools and procedural guidance necessary for manufacturers to communicate the requests referred to in point (b).’;

(11) Article 8 is amended as follows:

- (a) in point (a) of paragraph 1, “to 2029” is replaced by “onwards”;
- (b) point (b) of paragraph 1 is deleted;
- (c) paragraph 2 is replaced by the following:

‘2. A manufacturer shall be deemed to have excess CO<sub>2</sub> emissions in any of the following cases:

(a) where, in any of the reporting periods of the years 2025 to 2028, 2030 to 2033, 2035 to 2038 the sum of the emission debts reduced by the sum of the emission credits exceeds the emission debt limit referred to in Article 7(1), third subparagraph;

(b) where, in the reporting period of the years 2029, 2034, 2039 and 2040 the sum of the emission debts reduced by the sum of the emission credits is positive;

(c) where, from the reporting period of the year 2041 onwards, the manufacturer’s average specific CO<sub>2</sub> emissions exceed its specific CO<sub>2</sub> emissions target.’;

(12) Article 9 is amended as follows:

(a) paragraph 1 is replaced by the following:

‘1. Type-approval authorities and manufacturers shall, without delay, report to the Commission any of the following deviations from the data reported:

(a) where the CO<sub>2</sub> emission values of heavy-duty vehicles in service as a result of verifications performed in accordance with the procedure referred to in Article 13 of this Regulation deviate from the values that are indicated in certificates of conformity or in the customer information file referred to in Article 9(4) of Regulation (EU) 2017/2400;

(b) where errors due to wrong input data or other causes in the execution of the CO<sub>2</sub> determination were identified;

(c) where errors in the execution of the CO<sub>2</sub> monitoring and reporting were identified;

(d) any other deviations than those mentioned in points (a), (b) and (c).’;

(b) paragraph 2 is replaced by the following:

‘2. The Commission shall take the deviations referred to in paragraph 1 into account for the purpose of calculating the average specific CO<sub>2</sub> emissions of a manufacturer and the reference CO<sub>2</sub> emissions and consider modifying the decisions taken in accordance with Article 11 accordingly. The Commission is not obliged to take deviations into account if the recalculation of the average specific CO<sub>2</sub> emissions of a manufacturer or the reference CO<sub>2</sub> emissions results in a deviation of less than 0,1 %.’;

(13) Article 10 is replaced by the following:

#### ‘Article 10

#### **Assessment of reference CO<sub>2</sub> emissions**

1. In order to ensure the robustness and representativeness of the reference CO<sub>2</sub> emissions of vehicle sub-groups, to which a reporting period of the year 2024 or later applies as reference period according to point 3.2 of Annex I, the Commission shall assess the application of the conditions under which the reference CO<sub>2</sub> emissions have been determined and determine whether those emissions have been unduly increased and, if so, how they are to be corrected.

2. If the Commission concludes that all or some of the reference emissions shall be corrected, it shall adopt an implementing act in accordance with the

examination procedure referred to in Article 16(2) performing these corrections.’;

(14) Article 11 is amended as follows:

(a) in paragraph 1, the second subparagraph is replaced by the following:

‘The list to be published by 30 April of the year following a year in which a reference period has ended, shall include the reference CO<sub>2</sub> emissions determined in that reference period.’

(b) paragraph 2 is replaced by the following:

‘2. The Commission shall amend implementing acts adopted under paragraph 1:

(a) where the type-approval procedures referred to in Regulation (EC) No 595/2009 are amended, other than the amendments related to the payload and passenger number values used for the determination of CO<sub>2</sub> emissions, in such a way that the level of the CO<sub>2</sub> emissions of the representative vehicles specified pursuant to this paragraph increase or decrease by more than 5 g CO<sub>2</sub>/km:

(i) adjusted reference emissions shall be calculated in accordance with point 1 of Annex II;

(ii) the new values shall be published as a complement to previous values, indicating the reporting period when they apply the first time;

(b) where the Annexes have been amended in accordance with Article 14 (1), points (a) to (f):

(i) previously published reference CO<sub>2</sub> emissions shall be recalculated in accordance with Annex I, taking into account the parameters amended according to one of the points of Article 14 (1), point (a) to (f);

(ii) the recalculated set of reference CO<sub>2</sub> emissions shall be published and shall replace the previous set of reference emissions as from the reporting period in which the amended parameters according to one of the points of Article 14 (1), point (a) to (f), apply for the first time.’;

(c) the following paragraph is added:

‘3. In case of amendments of the type-approval procedures referred to in paragraph 2(a), the amending implementing act shall either specify or establish a methodology for defining one or more representative vehicles of a vehicle sub-group, including their statistical weightings and the payload and passenger number values to be used for the determination of CO<sub>2</sub> emissions, on the basis of which the adjustment referred to in paragraph 2(a) shall be determined, taking into account the monitoring data reported pursuant to this Regulation and the technical characteristics of the vehicles listed in Article 12(1) of Regulation (EU) 2017/2400. Those implementing acts shall be adopted in accordance with the examination procedure set out in Article 16(2) of this Regulation.’;

(15) in Article 13, paragraph 3, the following sentence is added:

‘Where the data in the customer information files, the certificates of conformity and the individual approval certificates may not be corrected under Regulation (EU) 2018/858, the responsible type-approval authority shall issue a statement of correction with the corrected data and transmit that statement to the Commission and the parties concerned.’;

(16) the following Articles 13a to 13f are inserted:

‘Article 13a

### **Monitoring and reporting by Member States**

1. Starting from the reporting period of the year [*PO: please insert year: if entry into force is before 1<sup>st</sup> July, insert the year of entry into force of the Regulation minus 1; if entry into force is after 30<sup>th</sup> of June, insert the following year*], Member States shall monitor the data specified in Annex IV, Part A relating to new heavy-duty vehicles registered for the first time in the Union.

By 30 September each year, starting in 2020, the competent authorities of the Member States shall report those data of the previous reporting period of 1 July to 30 June to the Commission in accordance with the reporting procedure set out in Annex V.

2. The competent authorities responsible for the monitoring and reporting of data in accordance with this Regulation shall be those designated by the Member States in accordance with Article 7(6) of Regulation (EU) 2019/631.

3. Vehicles designed and constructed or adapted for the use by civil protection, fire services and forces responsible for maintaining public order shall be subject to the obligation under this Article, unless they are exempted on the basis of other provisions.

4. Vehicles registered for the use by civil protection, fire services, medical urgency care and forces responsible for maintaining public order and vehicles registered for the use by the armed services shall be subject to the obligation under this Article, regardless of being exempted from Article 3a, unless they are exempted on the basis of other provisions.

Article 13b

### **Reporting by manufacturers or other entities responsible for the determination of a heavy-duty vehicle CO<sub>2</sub> emissions**

1. Manufacturers or other entities responsible for the determination of a heavy-duty vehicle to which the obligations of Article 9 of Regulation (EU) 2017/2400 or Article 8 of Implementing Regulation (EU) 2022/1362 are addressed shall report the data of the new heavy-duty vehicle according to the provisions set out in part B of Annex IV.

By 30 September of each year, they shall report those data for each new heavy-duty vehicle with a date of determination or assessment falling within the reporting period ending on 30 June to the Commission in accordance with the reporting procedure set out in Annex V.

This paragraph shall not apply to manufacturers or other entities exempted in accordance with Article 6b.

2. Each manufacturer or other entity in the meaning of paragraph 1 shall appoint a contact point for the purpose of reporting data in accordance with this Regulation.
3. The reporting obligation under Article 13a, paragraphs 3 and 4 shall apply to manufacturers and other entities in the meaning of paragraph 1.

#### Article 13c

##### **Central register for data on heavy-duty vehicles**

1. The Commission shall keep a central register for the data on heavy-duty vehicles ('the register') reported in accordance with Articles 13a and 13b.

The register shall be publicly available with the exception of data entries listed in point 3.2.2 of Annex V.

With regard to data entry 23 specified in Part B, point 2 of Annex IV, the value shall be made publicly available in a range format as set out in Part C of Annex IV.

2. The register shall be managed by the Agency on behalf of the Commission.

#### Article 13d

##### **Monitoring of the results of on-road verification tests**

1. The Commission shall monitor, where available, the results of on-road tests performed within the framework of Regulation (EC) No 595/2009 to verify the CO<sub>2</sub> emissions and fuel consumption of new heavy-duty vehicles.
2. The Commission is empowered to adopt delegated acts in accordance with Article 17 in order to supplement this Regulation by specifying the data to be reported by the competent authorities of the Member States for the purposes of paragraph 1 of this Article.

#### Article 13e

##### **Data quality**

1. The competent authorities and manufacturers shall be responsible for the correctness and quality of the data they report pursuant to Articles 13a and 13b. They shall inform the Commission without delay of any errors detected in the data reported.
2. The Commission shall carry out its own verification of the quality of the data reported pursuant to Articles 13a and 13b.
3. Where the Commission is informed of errors in the data or finds, pursuant to its own verification, discrepancies in the dataset, it shall, where appropriate, take the necessary measures to correct the data published in the register referred to in Article 13c.
4. The Commission may, by means of implementing acts, determine the verification and correction measures referred to in paragraphs 2 and 3 of this Article. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 16.

#### Article 13f

##### **Administrative fines**

1. The Commission may impose an administrative fine in each of the following cases:



(a) where it finds that the data reported by the manufacturer pursuant to Article 5 of this Regulation deviate from the data resulting from the manufacturer's records file or the engine type-approval certificate issued within the framework of Regulation (EC) No 595/2009, and the deviation is intentional or due to serious negligence;

(b) where the data are not submitted within the deadline applicable pursuant to Article 5(1) and the delay cannot be duly justified.

The Commission shall, for the purposes of verifying the data referred to in point (a), consult with the relevant approval authorities.

The administrative fines shall be effective, proportional and dissuasive and shall not exceed EUR 30 000 per heavy-duty vehicle concerned by deviating or delayed data as referred to in points (a) and (b).

2. The Commission shall on the basis of the principles set out in paragraph 3 of this Article, adopt delegated acts in accordance with Article 17 to supplement this Regulation by laying down the procedure, methods for the calculation and collection of the administrative fines referred to in paragraph 1 of this Article.

3. The delegated acts referred to in paragraph 2 shall respect the following principles:

(a) the procedure established by the Commission shall respect the right to good administration, and in particular the right to be heard and the right to have access to the file, while respecting the legitimate interests of confidentiality and of commercial secrets;

(b) in calculating the appropriate administrative fine, the Commission shall be guided by the principles of effectiveness, proportionality and dissuasiveness, taking into consideration, where relevant, the seriousness and effects of the deviation or delay, the number of heavy-duty vehicles concerned by the deviating or delayed data, the good faith of the manufacturer, the degree of diligence and cooperation of the manufacturer, the repetition, frequency or duration of the deviation or the delay as well as prior sanctions imposed on the same manufacturer;

(c) administrative fines shall be collected without undue delay by fixing deadlines for the payment and, as appropriate, including the possibility of splitting payments into several instalments and phases.

4. The amounts of the administrative fines shall be considered as revenue for the general budget of the Union.'

(17) Article 14 is replaced by the following:

'Article 14

**Amendments to the Annexes**

1. The Commission is empowered to adopt delegated acts in accordance with Article 17 with a view to amending the following elements in Annex I to take into account technical progress, the evolution of freight transport logistics, necessary adjustments based on the application of this Regulation and amendments of the underlying type-approval legislation, in particular Regulations (EU) 2018/858 and (EU) 595/2009:

(a) the criteria defining vehicle sub-groups set out in point 1.1;

(b) the criteria defining vocational vehicles set out in point 1.2;

- (c) the criteria for the operational ranges of different powertrain technologies set out in point 1.3;
  - (d) the list of mission profiles set out in point 1.4;
  - (e) the weight of mission profiles set out in point 2.1;
  - (f) the payloads, passenger numbers, passenger masses, technically permissible maximum payloads, technically permissible maximum passenger number and cargo volumes of vehicle sub-groups *sg* set out in point 2.5;
  - (g) the annual mileage values set out in point 2.6.
2. The Commission is empowered to adopt delegated acts in accordance with Article 17 with a view to amending the following element in Annex IV:
- (a) the data requirements specified in Part A and Part B to take into account technical progress, necessary adjustments based on the application of this Regulation and amendments of the underlying type-approval legislation, in particular Regulations (EU) 2018/858 and (EU) 595/2009;
  - (b) updating or adjusting the ranges set out in Part C to take into account changes in heavy-duty vehicle design and ensure that the ranges remain relevant for information and comparability purposes;
3. The Commission is empowered to adopt delegated acts in accordance with Article 17 with a view to amending the following elements in Annex V:
- (a) adjusting the monitoring and reporting procedure set out in Annex V in order to take into account the experience gained from the application of this Regulation and in order to adapt it to technical progress;
  - (b) amending point 3.2 by adding data entries which have been newly added to the register.'

(18) Article 15 is replaced by the following:

‘Article 15  
Review

The Commission shall, in 2028, review the effectiveness and impact of this Regulation and submit a report to the European Parliament and to the Council with the result of the review.

The report shall, where appropriate, be accompanied by a proposal for amending this Regulation.’

- (19) Article 17 is amended as follows:

- (a) in paragraph 2, the first sentence is replaced by the following:

‘The power to adopt delegated acts referred to in Article 3b, Article 11(2), Article 13(4) second subparagraph, Article 13c(3), Article 13d(2), Article 13e(4), Article 13f(2) and Article 14(1) shall be conferred on the Commission for a period of five years from [*OP, please insert the date of entry into force of this Regulation*].’;

- (b) in paragraph 3, the first sentence is replaced by the following:

‘The delegation of power referred to in Article 11(2), Article 13(4) second subparagraph, Article 13c(3), Article 13d(2), Article 13e(4), Article 13f(2) and Article 14(1) may be revoked at any time by the European Parliament or by the Council.’;

- (c) in paragraph (6), “Article 11(2), the second subparagraph of Article 13(4) and Article 14(1)” is replaced by the following: “Article 11(2), Article 13(4) second subparagraph, Article 13c(3), Article 13d(2), Article 13f(2) and Article 14(1)”;
- (20) Annexes I, II and III to Regulation (EU) 2019/1242 are replaced by the text in Annex I to this Regulation;
- (21) the text in Annex II to this Regulation is added as Annexes IV, V and VI to Regulation (EU) 2019/1242;

#### *Article 2*

#### **Repeal of Regulation (EU) 2018/956**

Regulation (EU) 2018/956 is repealed with effect from [*OP, please insert date of application*].

References to Regulation (EU) 2018/956 shall be construed as references to this Regulation and be read in accordance with the correlation table set out in Annex VI to this Regulation.

#### *Article 3*

#### *Entry into force*

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Union*.

It shall apply from 1 July [*OP please insert the calendar year = year of the 1<sup>st</sup> of July following the entry into force of this Act*].

However, in respect of reporting periods prior to [*OP please insert the date = date of application*], Regulation (EU) 2019/1242 as applicable on 30 June [*OP please insert the calendar year = year of the 1<sup>st</sup> of July following the entry into force of this Act*] and Regulation (EU) 2018/956 as applicable on 30 June [*OP please insert the calendar year = year of the 1<sup>st</sup> of July following the entry into force of this Act*] shall continue to apply.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Strasbourg,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*

## LEGISLATIVE FINANCIAL STATEMENT

### 1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

#### 1.1. Title of the proposal/initiative

Proposal for a Regulation amending Regulation (EU) 2019/1242 as regards strengthening the CO<sub>2</sub> emission performance standards for new heavy-duty vehicles in line with the Union's increased climate ambition and as regards integrating reporting obligations, and repealing Regulation (EU) 2018/956.

#### 1.2. Policy area(s) concerned

Heading 3 – Natural resources and Environment

Title 9 – Environment and Climate Action

#### 1.3. The proposal/initiative relates to:

- a new action
- a new action following a pilot project/preparatory action<sup>25</sup>
- the extension of an existing action
- a merger or redirection of one or more actions towards another/a new action

#### 1.4. Objective(s)

##### 1.4.1. General objective(s)

The general objective of this proposal is to provide new emission standards to reduce CO<sub>2</sub> emissions from new heavy-duty vehicles (HDV) and contribute to the shift to zero-emission mobility in the broader context of increased EU climate ambition by 2030 and EU climate neutrality by 2050.

##### 1.4.2. Specific objective(s)

Specific objectives of this proposal are to:

Reduce CO<sub>2</sub> emissions from HDV, cost-effectively, in line with the EU climate goals, while contributing to improve EU energy security.

Provide benefits for European transport operators and users, most of which are SMEs, resulting from wider deployment of more energy-efficient vehicles.

Strengthen the technological and innovation leadership industry in the EU by channelling investments into zero-emission technologies.

##### 1.4.3. Expected result(s) and impact

*Specify the effects which the proposal/initiative should have on the beneficiaries/groups targeted.*

The proposal will ensure that CO<sub>2</sub> emissions from heavy-duty vehicles are reduced, will provide benefits for transport operators and users in terms of air quality and reduction of energy consumption, and will strengthen the technological and innovation leadership of the automotive value chain. Additional co-benefits are expected to be increased energy efficiency and improved energy security.

<sup>25</sup> As referred to in Article 58(2)(a) or (b) of the Financial Regulation.

#### 1.4.4. Indicators of performance

*Specify the indicators for monitoring progress and achievements.*

The following indicators have been identified:

1. The EU wide-fleet average CO<sub>2</sub> emissions of new HDV measured at type approval will be monitored annually;
2. The total GHG emissions of HDV will be monitored through Member States' annual GHG emissions inventories;
3. The number and share of newly registered zero- and low-emission vehicles will be monitored through the annual monitoring data submitted by Member States;
4. The level of innovation will be measured in terms of new patents by European automotive manufacturers related to zero-emission technologies through publicly available patents databases;
5. The level of employment will be monitored on the basis of publicly available Eurostat statistics on sectoral employment data for the EU.

### 1.5. Grounds for the proposal/initiative

#### 1.5.1. Requirement(s) to be met in the short or long term including a detailed timeline for roll-out of the implementation of the initiative

Manufacturers of HDV newly registered in the Union will have to monitor and report emissions and comply with the revised specific CO<sub>2</sub> emission targets

Member States will have to report annually to the Commission and the European Environment Agency (EEA) technical data on newly registered HDV.

#### 1.5.2. Added value of Union involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this point 'added value of Union involvement' is the value resulting from Union intervention which is additional to the value that would have been otherwise created by Member States alone.

Climate change is a transboundary problem which cannot be solved by national or local action alone. Coordination of climate action must be taken at the European level, and EU action is justified on the grounds of subsidiarity.

Initiatives at the national and local levels will not be sufficient. A lack of coordinated EU action would translate into a risk of market fragmentation. On their own, individual Member States would also represent too small a market to drive industry-level changes and create economies of scale.

#### 1.5.3. Lessons learned from similar experiences in the past

The proposal builds on existing legislation for both monitoring and reporting obligations and CO<sub>2</sub> emissions standards.

*1.5.4. Compatibility with the Multiannual Financial Framework and possible synergies with other appropriate instruments*

This proposal is compatible with the objectives of the Next Generation EU and the Multiannual Financial Framework for 2021-2027<sup>26</sup>, which will help achieve the twin green and digital transitions that Europe is aiming for.

This legislative proposal is complementary and maintains consistency with the relevant proposals in the 'fit for 55' package, as well as with the Euro 7 proposal

*1.5.5. Assessment of the different available financing options, including scope for redeployment*

N/A

<sup>26</sup>

[https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2021-2027/documents\\_en](https://ec.europa.eu/info/strategy/eu-budget/long-term-eu-budget/2021-2027/documents_en)

## 1.6. Duration and financial impact of the proposal/initiative

### limited duration

- in effect from [DD/MM]YYYY to [DD/MM]YYYY
- Financial impact from YYYY to YYYY for commitment appropriations and from YYYY to YYYY for payment appropriations.

### unlimited duration

- Implementation with a start-up period from 2024 to 2025.
- followed by full-scale operation.

## 1.7. Management mode(s) planned<sup>27</sup>

### Direct management by the Commission

- by its departments, including by its staff in the Union delegations;
- by the executive agencies

### Shared management with the Member States

### Indirect management by entrusting budget implementation tasks to:

- third countries or the bodies they have designated;
- international organisations and their agencies (to be specified);
- the EIB and the European Investment Fund;
- bodies referred to in Articles 70 and 71 of the Financial Regulation;
- public law bodies;
- bodies governed by private law with a public service mission to the extent that they provide adequate financial guarantees;
- bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that provide adequate financial guarantees;
- persons entrusted with the implementation of specific actions in the CFSP pursuant to Title V of the TEU, and identified in the relevant basic act.

If more than one management mode is indicated, please provide details in the 'Comments' section.

Comments:

N/A

---

<sup>27</sup> Details of management modes and references to the Financial Regulation may be found on the BudgWeb site: <https://myintracomm.ec.europa.eu/budgweb/EN/man/budgmanag/Pages/budgmanag.aspx>

## **2. MANAGEMENT MEASURES**

### **2.1. Monitoring and reporting rules**

*Specify frequency and conditions.*

The initiative involves an appropriation of existing DG CLIMA administrative arrangements with the JRC and an increase in the contribution to the EEA.

Data collection is required from different sources, including from Member States, automotive manufacturers and national type approval authorities. The coordination of the data collection activities is performed by the EEA and DG CLIMA, also assisted by the JRC.

Member States and manufacturers annually report data on new vehicle registrations. These datasets form the basis for determining manufacturers' compliance with the standards and the imposition of any potential fines. The data is then confirmed by a Commission decision.

The proposal requires additional data assessment by the Commission and EEA due to the newly covered vehicle groups, the provisions on small volume manufacturers exemptions and the transfer of vehicles.

Data on real-world fuel and/or electric energy consumption as recorded on-board vehicles and data on in-Service performance will be reported annually, including for the vehicles added to the scope. The existing real-world and in-service legal provisions were strengthened by the co-legislator, as compared to the Commission proposal.

### **2.2. Management and control system(s)**

#### *2.2.1. Justification of the management mode(s), the funding implementation mechanism(s), the payment modalities and the control strategy proposed*

The proposal is not implementing a financial programme but designing a long-term policy. Management mode, funding implementation mechanisms, payment modalities and control strategy in relation to error rates are not applicable

#### *2.2.2. Information concerning the risks identified and the internal control system(s) set up to mitigate them*

The control methods envisaged are laid down in the Financial Regulation and Rules of Application. This proposal does not concern a spending programme.

Efficient and correct monitoring of vehicle registration data is essential for ensuring legal certainty in enforcing the legislation and for ensuring a level playing field between different manufacturers within the EU single market.

The real-world data collection and the in-service verification procedure will ensure that irregularities in the vehicle registration data can be detected and effective remedial measures are taken in a timely manner and will also serve to ensure that the long-term effectiveness of the EU CO<sub>2</sub> emission targets is not undermined.

The main internal control systems include the verification of the reported registration and technical data.



- 2.2.3. *Estimation and justification of the cost-effectiveness of the controls (ratio of "control costs ÷ value of the related funds managed"), and assessment of the expected levels of risk of error (at payment & at closure)*

This initiative does not bring about new significant controls/risks that would not be covered by an existing internal control framework. No specific measures beyond the application of the Financial Regulation have been envisaged.

### **2.3. Measures to prevent fraud and irregularities**

*Specify existing or envisaged prevention and protection measures, e.g. from the Anti-Fraud Strategy.*

In addition to the application of the Financial Regulation to prevent fraud and irregularities, the strengthened CO<sub>2</sub> reduction requirements and scope extension provided for in this proposal will be accompanied by enhanced monitoring and reporting of in-service verification and real-world emission datasets.

### 3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

#### 3.1. Heading(s) of the multiannual financial framework and expenditure budget line(s) affected

- Existing budget lines

*In order of multiannual financial framework headings and budget lines.*

Heading of multiannual financial framework	Budget line	Type of expenditure	Contribution			
	Number	Diff./Non-diff. <sup>28</sup>	from EFTA countries <sup>29</sup>	from candidate countries <sup>30</sup>	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
3	09 02 03 Climate change mitigation and adaptation	Diff.	YES	NO	NO	NO
3	09 10 02 European Environment Agency	Diff	YES	YES	NO	NO
7	20 02 01 01 Contract Staff	Non-diff.	NO	NO	NO	NO

New budget lines requested: N/A

<sup>28</sup> Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

<sup>29</sup> EFTA: European Free Trade Association.

<sup>30</sup> Candidate countries and, where applicable, potential candidates from the Western Balkans.

### 3.2. Estimated financial impact of the proposal on appropriations

#### 3.2.1. Summary of estimated impact on operational appropriations

- The proposal/initiative does not require the use of operational appropriations
- The proposal/initiative requires the use of operational appropriations, as explained below:

EUR million (to three decimal places)

Heading of multiannual financial framework			3	'Natural resources and environment'				
DG: CLIMA			2023	2024	2025	2026	2027	TOTAL
Operational appropriations								
09 02 03 Climate change mitigation and adaptation	Commitments	(1)		0,100	0,100	0,100	0,100	<b>0,400</b>
	Payments	(2)		0,100	0,100	0,100	0,100	<b>0,400</b>
Appropriations of an administrative nature financed from the envelope of specific programmes								
		(3)						
<b>TOTAL appropriations for DG CLIMA</b>	Commitments	= 1 + 3		0,100	0,100	0,100	0,100	<b>0,400</b>
	Payments	= 2 + 3		0,100	0,100	0,100	0,100	<b>0,400</b>

- JRC will play a key role in supporting the Commission with some of the technical work required. There is an Administrative Arrangement in place between DG CLIMA and JRC.

Agency: EEA – European Environment Agency			2023	2024	2025	2026	2027	TOTAL
Operational appropriations								
Title 1: Staff expenditure	Commitments	(1a)		0,299	0,735	0,750	0,765	2,549
	Payments	(2a)		0,299	0,735	0,750	0,765	2,549

Title 2: Infrastructure	Commitments	(1b)		0,080	0,080			<b>0,160</b>
	Payments	(2b)		0,080	0,080			<b>0,160</b>
Title 3: Operational expenditure	Commitments	(1c)			0,020	0,040	0,040	<b>0,100</b>
	Payments	(2c)			0,020	0,040	0,040	<b>0,100</b>
Appropriations of an administrative nature financed from the envelope of specific programmes								
		(3)						
<b>TOTAL appropriations for agency EEA *</b>	Commitments	=1a+1b +1c		0,379	0,835	0,790	0,805	<b>2,809</b>
	Payments	=2a+2b +2c		0,379	0,835	0,790	0,805	<b>2.809</b>

\*The budgetary impact of the additional financial resources for the European Environment Agency will be offset through a compensatory reduction from the LIFE budget, more specifically from DG CLIMA Climate change mitigation and adaptation budget line 09 02 03.

- Staff expenditure: A additional Temporary Agent (AD) and one additional Contract Agent (CA) will be required to support: (i) ensure the coordination, preparation and follow-up of the additional data collection, analysis and processing necessary to manage the increase in absolute number of vehicles' emissions to be monitored and reported, (ii) the implementation and use of the reporting system, quality assurance and data quality control systems for such newly added vehicles under extended scope, as well as data management and technical helpdesk for the additional manufacturers.

Three additional contract agents (start with two in 2024) are required for the following tasks:

Support to prepare and develop a number of detailed certification methodologies (for example: for demonstrating compliance with EU quality criteria for carbon removals, as set out in article 8 of the proposed appropriate Regulation);

Data gathering on monitoring, reporting and verification for example for a number of carbon farming activities, related to wetland rewetting, crop management and afforestation/reforestation initiatives;

Support to ensure the linkages between registries (for example: of the certification schemes and the national GHG inventories).

- Infrastructure and operational expenditure costs: EEA will need initial IT investments during the first two years (totalling € 160 000) for data processing, to check the compliance with the standards also for an increased number of vehicles and manufacturers. Recurrent annual IT

expenditure will be needed as well for maintaining and regular updates to the reporting workflows, MSSQL databases and other IT process tools.

○ TOTAL operational appropriations			2023	2024	2025	2026	2027	TOTAL
	Commitments	(4)		0,479	0,935	0,890	0,905	3,209
	Payments	(5)		0,479	0,935	0,890	0,905	3,209
<b>TOTAL appropriations under HEADING 3</b> of the multiannual financial framework	Commitments	=4		0,479	0,935	0,890	0,905	3,209
	Payments	=5		0,479	0,935	0,890	0,905	3,209

EUR million (to three decimal places)

<b>Heading of multiannual financial framework</b>	7	'Administrative expenditure'
---	---	------------------------------

		2023	2024	2025	2026	2027	TOTAL
DG: CLIMA							
○ Human resources			0,091	0,091	0,091	0,091	0,364
○ Other administrative expenditure							
<b>TOTAL DG CLIMA</b>	Appropriations		0,091	0,091	0,091	0,091	0,364

A FTE CA is needed to deal with the additional data management.

<b>TOTAL appropriations under HEADING 7</b> of the multiannual financial framework	(Total commitments = Total payments)		0,091	0,091	0,091	0,091	<b>0,364</b>

EUR million (to three decimal places)

		2023	2024	2025	2026	2027	TOTAL
<b>TOTAL appropriations under HEADINGS 1 to 7</b> of the multiannual financial framework	Commitments		0,570	1,026	0,981	0,996	<b>3,573</b>
	Payments		0,570	1,026	0,981	0,996	<b>3,573</b>

### 3.2.2. Estimated output funded with operational appropriations

Commitment appropriations in EUR million (to three decimal places)

Indicate objectives and outputs ↓			2023		2024		2025		2026		2027		TOTAL	
	OUTPUTS													
	Type <sup>31</sup>	Average cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	Total No	Total cost
SPECIFIC OBJECTIVE No 1 <sup>32</sup> ...														
- Output														
- Output														
- Output														

<sup>31</sup> Outputs are products and services to be supplied (e.g.: number of student exchanges financed, number of km of roads built, etc.).

<sup>32</sup> As described in point 1.4.2. 'Specific objective(s)...

Subtotal for specific objective No 1													
SPECIFIC OBJECTIVE No 2													
- Output													
Subtotal for specific objective No 2													
<b>TOTALS</b>													

3.2.3. *Summary of estimated impact on administrative appropriations*

3.2.3.1. Estimated impact on EEA's human resources

- The proposal/initiative does not require the use of appropriations of an administrative nature
- The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

EUR million (to three decimal places)

	2024	2025	2026	2027	TOTAL
--	------	------	------	------	-------

Temporary agents (AD Grades)	0,115	0,235	0,240	0,244	0,834
Temporary agents (AST grades)					
Contract staff	0.184	0.500	0.510	0.520	1.714
Seconded National Experts					

<b>TOTAL</b>	<b>0.299</b>	<b>0.735</b>	<b>0.750</b>	<b>0.765</b>	<b>2.549</b>
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Staff requirements (FTE):

	2024	2025	2026	2027	TOTAL
--	------	------	------	------	-------

Temporary agents (AD Grades)	1	1	1	1	1
Temporary agents (AST grades)					
Contract staff	3	4	4	4	4
Seconded National Experts					

<b>TOTAL</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>5</b>
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3.2.3.2. Estimated requirements on administrative appropriations in the Commission

3.2.3.3. Summary of estimated impact on administrative appropriations

- The proposal/initiative does not require the use of appropriations of an administrative nature
- The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

EUR million (to three decimal places)

		Year 2024	Year 2025	Year 2026	Year 2027	TOTAL
--	--	--------------	--------------	--------------	--------------	-------

<b>HEADING 7 of the multiannual financial framework</b>						
Human resources		0,091	0,091	0,091	0,091	<b>0,364</b>
Other administrative expenditure						
<b>Subtotal HEADING 7 of the multiannual financial framework</b>		0,091	0,091	0,091	0,091	<b>0,364</b>

<b>Outside HEADING 7<sup>33</sup> of the multiannual financial framework</b>						
Human resources		N/A	N/A	N/A	N/A	N/A

<sup>33</sup> Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

Other expenditure of an administrative nature						
<b>Subtotal outside HEADING 7 of the multiannual financial framework</b>		N/A	N/A	N/A	N/A	N/A

<b>TOTAL</b>		0,091	0,091	0,091	0,091	<b>0,364</b>
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The appropriations required for human resources and other expenditure of an administrative nature will be met by appropriations from the DG that are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

### 3.2.3.4. Estimated requirements of human resources

- The proposal/initiative does not require the use of human resources.
- The proposal/initiative requires the use of human resources, as explained below:

*Estimate to be expressed in full time equivalent units*

	Year 2023	Year 2024	Year 2025	Year 2026	Year 2027
<b>○ Establishment plan posts (officials and temporary staff)</b>					
20 01 02 01 (Headquarters and Commission's Representation Offices)					
20 01 02 03 (Delegations)					
01 01 01 01 (Indirect research)					
01 01 01 11 (Direct research)					
<b>○ External staff (in Full Time Equivalent unit: FTE)<sup>34</sup></b>					
20 02 01 (AC, END, INT from the 'global envelope')		1	1	1	1
20 02 03 (AC, AL, END, INT and JPD in the delegations)					
<b>XX</b> 01 xx yy zz <sup>35</sup>	- at Headquarters				
	- in Delegations				
01 01 01 02 (AC, END, INT - Indirect research)					
01 01 01 12 (AC, END, INT - Direct research)					
<b>TOTAL</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>

**XX** is the policy area or budget title concerned.

The human resources required will be met by staff from the DG who are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

Description of tasks to be carried out:

Officials and temporary staff	
External staff	1 CA for the Commission would be needed to deal with the higher complexity and extended scope of the legislation and associated additional surveillance and management.

### 3.2.4 Compatibility with the current multiannual financial framework

- The proposal/initiative:
  - can be fully financed through redeployment within the relevant heading of the Multiannual Financial Framework (MFF).

No additional operational expenditure foreseen. In any case, eventual expenditure will be incurred within the LIFE envelope.

<sup>34</sup> AC= Contract Staff; AL = Local Staff; END= Seconded National Expert; INT = agency staff; JPD= Junior Professionals in Delegations.

<sup>35</sup> Sub-ceiling for external staff covered by operational appropriations (former 'BA' lines).

- requires use of the unallocated margin under the relevant heading of the MFF and/or use of the special instruments as defined in the MFF Regulation.
- requires a revision of the MFF.

### 3.2.5. Third-party contributions

The proposal/initiative:

- does not provide for co-financing by third parties
- provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

	2023	2024	2025	2026	2027	Total
Specify the co-financing body						
TOTAL appropriations co-financed						

### 3.3. Estimated impact on revenue

- The proposal/initiative has no financial impact on revenue.
- The proposal/initiative has the following financial impact:
  - on own resources
  - on other revenue

please indicate, if the revenue is assigned to expenditure lines

EUR million (to three decimal places)

Budget revenue line:	Appropriations available for the current financial year	Impact of the proposal/initiative <sup>36</sup>				
		2023	2024	2025	2026	2027
Article 4 2 9						

For assigned revenue, specify the budget expenditure line(s) affected.

n/a

Other remarks (e.g. method/formula used for calculating the impact on revenue or any other information).

Revenues might be generated through the Excess CO<sub>2</sub> Emission Premiums. Revenues payable by manufacturers will continue to be considered as revenue for the EU general budget.

<sup>36</sup> As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 20 % for collection costs.



Strasbourg, 14.2.2023  
COM(2023) 88 final

ANNEXES 1 to 2

## ANNEXES

*to the*

**proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE  
COUNCIL**

**amending Regulation (EU) 2019/1242 as regards strengthening the CO<sub>2</sub> emission  
performance standards for new heavy-duty vehicles and integrating reporting  
obligations, and repealing Regulation (EU) 2018/956**

{SEC(2023) 100 final} - {SWD(2023) 88 final} - {SWD(2023) 89 final}

## ANNEX I

### Average specific emissions, average specific emission targets and excess emissions

#### 1. VEHICLE SUB-GROUPS

1.1. For the purposes of this Regulation a sub-group *sg* is defined for each new heavy-duty vehicle.

1.1.1. For vehicles of category N the sub-group *sg* is defined as follows:

Vehicle group according to Annex I to Regulation (EU) 2017/2400	Vocational vehicle according to Article 3(9) of this Regulation	Cab type	Engine power	Operational range (OR)	Vehicle sub-group (sg) attributed for the purposes of this Regulation
53	No	All			53
54	No	All			54
1s	No	All			1s
1	No	All			1
2	No	All			2
3	No	All			3
4	No	All	<170 kW	All	4-UD
	No	Day cab	≥170 kW	All	4-RD
	No	Sleeper cab	≥170 kW and <265 kW		
	No	Sleeper cab	≥265 kW	< 350 km	
	No	Sleeper cab	≥265 kW	≥ 350 km	4-LH
9	No	Day cab	All	All	9-RD

	<b>No</b>	<b>Sleeper cab</b>	<b>All</b>	<b>&lt; 350 km</b>	
	<b>No</b>	<b>Sleeper cab</b>	<b>All</b>	<b>≥ 350 km</b>	<b>9-LH</b>
<b>5</b>	<b>No</b>	<b>Day cab</b>	<b>All</b>	<b>All</b>	<b>5-RD</b>
	<b>No</b>	<b>Sleeper cab</b>	<b>&lt; 265 kW</b>		
	<b>No</b>	<b>Sleeper cab</b>	<b>≥ 265 kW</b>	<b>&lt; 350 km</b>	
	<b>No</b>	<b>Sleeper cab</b>	<b>≥ 265 kW</b>	<b>≥ 350 km</b>	<b>5-LH</b>
<b>10</b>	<b>No</b>	<b>Day cab</b>	<b>All</b>	<b>All</b>	<b>10-RD</b>
	<b>No</b>	<b>Sleeper cab</b>	<b>All</b>	<b>&lt; 350 km</b>	
	<b>No</b>	<b>Sleeper cab</b>	<b>All</b>	<b>≥ 350 km</b>	<b>10-LH</b>
<b>11</b>	<b>No</b>	<b>All</b>			<b>11</b>
<b>12</b>	<b>No</b>	<b>All</b>			<b>12</b>
<b>16</b>	<b>No</b>	<b>All</b>			<b>16</b>

‘Sleeper cab’ means a type of cab that has a compartment behind the driver's seat intended to be used for sleeping as reported in accordance with Articles 13a and 13b.

‘Day cab’ means a type of cab that is not a sleeper cab.

Where a new heavy-duty vehicle is attributed to sub-group 4-UD, but data on the CO<sub>2</sub> emissions in g/km are not available for the UDL or UDR mission profiles as defined in point 2.1, Table 2 the new heavy-duty vehicle shall be attributed to the sub-group 4-RD

‘Operational range’ means the distance a vehicle can travel under long haul transport conditions without being re-charged or re-filled, as provided for in point 1.3.

1.1.2. For vehicles of category M the sub-group *sg* is defined as follows:

<b>Vehicle group pursuant to Annex I to Regulation (EU) 2017/2400</b>	<b>Vehicle sub-group (sg) attributed for the purposes of this Regulation</b>
31a, 31d	31-LF
31b1	31-L1
31b2	31-L2
31c, 31e	31-DD
32a, 32b	32-C2
32c, 32d	32-C3
32e, 32f	32-DD
33a, 33d, 37a, 37d	33-LF
33b1, 37b1	33-L1
33b2, 37b2	33-L2
33c, 33e, 37c, 37e	33-DD
34a, 34b, 36a, 36b, 38a, 38b, 40a, 40b	34-C2
34c, 34d, 36c, 36d, 38c, 38d, 40c, 40d	34-C3
34e, 34f, 36e, 36f, 38e, 38f, 40e, 40f	34-DD
35a, 35b1, 35b2, 35c	35-FE
39a, 39b1, 39b2, 35c	39-FE

1.1.3. For vehicles of category O the sub-group *sg* is defined as follows:

<b>Vehicle groups defined in Annex I of Regulation (EU) 2022/1362</b>	<b>Vehicle sub-group (sg) attributed for the purposes of this Regulation</b>
All groups provided in	Same as provided in



Table 1 with 1, 2, 3 axles	column “vehicle group” of the tables in Annex I to Regulation (EU) 2022/1362.
All groups provided in Table 4 with 1, 2, 3 axles	
All groups provided in Table 6	

1.2. Vocational vehicles are defined by the following criteria:

Vehicle category	Chassis configuration	Criteria for vocational vehicles
N	Rigid	One of the following digits, as listed in Appendix 2 of Annex I to Regulation (EU) 2018/858, is used to supplement the code for bodywork indicated in entry 38 of the certificate of conformity:  09, 10, 15, 16, 18, 19, 20, 23, 24, 25, 26, 27, 28, 31;
	Tractor	Maximum speed not exceeding 79 km/h

1.3. Operational ranges for the purposes of this Regulation are set as follows:

Powertrain technology	Operational range (OR)
Vehicles drawing energy for the purpose of mechanical propulsion only from an electrical energy or power storage device	OR = actual charge depleting range as provided for by point 2.4.1 of part I of Annex IV to Regulation (EU) 2017/2400 for the LHR mission profile
Other technologies	OR > 350 km

1.4. Definitions of mission profiles

RDL	Regional delivery payload low
RDR	Regional delivery payload representative
LHL	Long haul payload low
LHR	Long haul payload representative
UDL	Urban delivery payload low

<b>UDR</b>	<b>Urban delivery payload representative</b>
<b>REL</b>	<b>Regional delivery (EMS) payload low</b>
<b>RER</b>	<b>Regional delivery (EMS) payload representative</b>
<b>LEL</b>	<b>Long haul (EMS) payload low</b>
<b>LER</b>	<b>Long haul (EMS) payload representative</b>
<b>MUL</b>	<b>Municipal utility payload low</b>
<b>MUR</b>	<b>Municipal utility payload representative</b>
<b>COL</b>	<b>Construction payload low</b>
<b>COR</b>	<b>Construction payload representative</b>
<b>HPL</b>	<b>Heavy urban, person transport, low load</b>
<b>HPR</b>	<b>Heavy urban, person transport, representative load</b>
<b>UPL</b>	<b>Urban, person transport, low load</b>
<b>UPR</b>	<b>Urban, person transport, representative load</b>
<b>SPL</b>	<b>Sub-urban, person transport, low load</b>
<b>SPR</b>	<b>Sub-urban, person transport, representative load</b>
<b>IPL</b>	<b>Inter-urban, person transport, low load</b>
<b>IPR</b>	<b>Inter-urban, person transport, representative load</b>
<b>CPL</b>	<b>Coach, person transport, low load</b>
<b>CPR</b>	<b>Coach, person transport, representative load</b>

## **2. CALCULATION OF THE AVERAGE SPECIFIC EMISSIONS OF A MANUFACTURER**

### **2.1. Calculation of the specific CO<sub>2</sub> emissions of a new heavy-duty vehicle**

The specific emissions in g/km of a new heavy-duty vehicle  $v$  attributed to a sub-group  $sg$  or of its primary vehicle shall be calculated in accordance with the following formula:

$$CO2_v = \sum_{mp} W_{sg,mp} \times CO2_{v,mp}$$

$$CO2p_v = \sum_{mp} W_{sg,mp} \times CO2p_{v,mp}$$

Where,

$\sum_{mp}$  is the sum over all mission profiles  $mp$  listed in Table 2;

$sg$  is the sub-group to which the new heavy-duty vehicle  $v$  has been attributed according to Section 1 of this Annex;

$W_{sg,mp}$ , is the mission profile weight specified in points 2.1.1 to 2.1.3;

$CO2_{v,mp}$  is the CO<sub>2</sub> emissions in g/km of the new heavy-duty vehicle  $v$  determined for a mission profile  $mp$ , reported in accordance with Articles 13a and 13b and normalised pursuant to Annex III;

$CO2p_{v,mp}$  is the CO<sub>2</sub> emissions in g/km of the primary vehicle of the new heavy-duty vehicle  $v$ , determined for a mission profile  $mp$ , reported in accordance with Articles 13a and 13b;

For zero-emissions motor vehicles the values of  $CO2_{v,mp}$  and  $CO2p_{v,mp}$  shall be set to 0.

### 2.1.1. Mission profile weights ( $W_{sg,mp}$ ) for vehicles of category N

Vehicle sub-group (sg)*	Mission profile (mp)**										
	RDL	RDR	LHL	LHR	UDL	UDR	REL, RER, LEL, LER	MUL	MUR	COL	COR
53	0,25	0,25	0	0	0,25	0,25	0	0	0	0	0
54	0,25	0,25	0	0	0,25	0,25	0	0	0	0	0
1s	0,1	0,3	0	0	0,18	0,42	0	0	0	0	0
1	0,1	0,3	0	0	0,18	0,42	0	0	0	0	0
2	0,125	0,375	0	0	0,15	0,35	0	0	0	0	0
3	0,125	0,375	0	0	0,15	0,35	0	0	0	0	0
4-UD	0	0	0	0	0,5	0,5	0	0	0	0	0
4-RD	0,45	0,45	0,05	0,05	0	0	0	0	0	0	0
4-LH	0,05	0,05	0,45	0,45	0	0	0	0	0	0	0
4v	0	0	0	0	0	0	0	0,25	0,25	0,25	0,25

<b>5-RD</b>	<b>0,27</b>	<b>0,63</b>	<b>0,03</b>	<b>0,07</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>5-LH</b>	<b>0,03</b>	<b>0,07</b>	<b>0,27</b>	<b>0,63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>5v</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,5</b>	<b>0,5</b>
<b>9-RD</b>	<b>0,27</b>	<b>0,63</b>	<b>0,03</b>	<b>0,07</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>9-LH</b>	<b>0,03</b>	<b>0,07</b>	<b>0,27</b>	<b>0,63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>9v</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,25</b>	<b>0,25</b>	<b>0,25</b>	<b>0,25</b>
<b>10-RD</b>	<b>0,27</b>	<b>0,63</b>	<b>0,03</b>	<b>0,07</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>10-LH</b>	<b>0,03</b>	<b>0,07</b>	<b>0,27</b>	<b>0,63</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>10v</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,5</b>	<b>0,5</b>
<b>11</b>	<b>0,15</b>	<b>0,35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,15</b>	<b>0,35</b>
<b>12</b>	<b>0,21</b>	<b>0,49</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,09</b>	<b>0,21</b>
<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,3</b>	<b>0,7</b>

\* See definitions in point 1.1

\*\* See definitions in point 1.4

### 2.1.2. Mission profile weights (Wsg,mp) for vehicles of category M

<b>Vehicle sub-group (sg)*</b>	<b>Mission profile (mp)**</b>									
	<b>HPL</b>	<b>HPR</b>	<b>UPL</b>	<b>UPR</b>	<b>SPL</b>	<b>SPR</b>	<b>IPL</b>	<b>IPR</b>	<b>CPL</b>	<b>CPR</b>
<b>31-LF</b>	<b>0,27</b>	<b>0,23</b>	<b>0,15</b>	<b>0,13</b>	<b>0,11</b>	<b>0,11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>31-L1</b>	<b>0,05</b>	<b>0,05</b>	<b>0,16</b>	<b>0,14</b>	<b>0,32</b>	<b>0,28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>31-L2</b>	<b>0,05</b>	<b>0,05</b>	<b>0,09</b>	<b>0,08</b>	<b>0,15</b>	<b>0,13</b>	<b>0,24</b>	<b>0,21</b>	<b>0</b>	<b>0</b>
<b>31-DD</b>	<b>0,20</b>	<b>0,31</b>	<b>0,12</b>	<b>0,18</b>	<b>0,07</b>	<b>0,12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>32-C2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,47</b>	<b>0,43</b>	<b>0,04</b>	<b>0,06</b>
<b>32-C3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,05</b>	<b>0,05</b>	<b>0,30</b>	<b>0,60</b>
<b>32-DD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,05</b>	<b>0,05</b>	<b>0,35</b>	<b>0,55</b>
<b>33-LF</b>	<b>0,27</b>	<b>0,23</b>	<b>0,15</b>	<b>0,13</b>	<b>0,11</b>	<b>0,11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>33-L1</b>	<b>0,05</b>	<b>0,05</b>	<b>0,16</b>	<b>0,14</b>	<b>0,32</b>	<b>0,28</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

<b>33-L2</b>	<b>0,05</b>	<b>0,05</b>	<b>0,09</b>	<b>0,08</b>	<b>0,15</b>	<b>0,13</b>	<b>0,24</b>	<b>0,21</b>	<b>0</b>	<b>0</b>
<b>33-DD</b>	<b>0,20</b>	<b>0,31</b>	<b>0,12</b>	<b>0,18</b>	<b>0,07</b>	<b>0,12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>34-C2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,47</b>	<b>0,43</b>	<b>0,04</b>	<b>0,06</b>
<b>34-C3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,05</b>	<b>0,05</b>	<b>0,30</b>	<b>0,60</b>
<b>34-DD</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0,05</b>	<b>0,05</b>	<b>0,35</b>	<b>0,55</b>
<b>35-FE</b>	<b>0,27</b>	<b>0,23</b>	<b>0,15</b>	<b>0,13</b>	<b>0,11</b>	<b>0,11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>39-FE</b>	<b>0,27</b>	<b>0,23</b>	<b>0,15</b>	<b>0,13</b>	<b>0,11</b>	<b>0,11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* See definitions in point 1.1

\*\* See definitions in point 1.4

### 2.1.3. Mission profile weights ( $W_{sg,mp}$ ) for vehicles of category O

Vehicle sub-group ( $sg$ )*	Mission profile ( $mp$ )**						
	RDL	RDR	LHL	LHR	UDL	UDR	REL, RER, LEL, LER
111, 111V,112, 112V, 113	0,27	0,63	0,03	0,07	0	0	0
121, 121V, 122, 122V, 123, 123V, 124, 124V, 125, 126	0,03	0,07	0,27	0,63	0	0	0
131, 131v, 132, 132v, 133	0,03	0,07	0,27	0,63	0	0	0
421, 421v, 422, 422v, 423	0,03	0,07	0,27	0,63	0	0	0
431, 431v, 432, 432v, 433	0,03	0,07	0,27	0,63	0	0	0
611, 612	0,27	0,63	0,03	0,07	0	0	0
611v, 612v	0,03	0,07	0,27	0,63	0	0	0

<b>621, 623</b>	<b>0,27</b>	<b>0,63</b>	<b>0,03</b>	<b>0,07</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>621V, 622, 622V, 623V, 624, 624V, 625</b>	<b>0,03</b>	<b>0,07</b>	<b>0,27</b>	<b>0,63</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>631, 631v, 632, 632v, 633</b>	<b>0,03</b>	<b>0,07</b>	<b>0,27</b>	<b>0,63</b>	<b>0</b>	<b>0</b>	<b>0</b>

\* See definitions in point 1.1

\*\* See definitions in point 1.4

## 2.2. Average specific CO<sub>2</sub> emissions of all new heavy-duty vehicles in a sub-group for a manufacturer

For each manufacturer and each *reporting period*, the average specific CO<sub>2</sub> emissions  $avgCO2_{sg}$  of all new heavy-duty vehicles in a sub-group  $sg$  or their primary vehicles, if applicable, shall be calculated as follows:

2.2.1. For category N and O vehicles:

$$avgCO2_{sg} = \frac{\sum_v CO2_v}{V_{sg} \times PL_{sg}} \quad (\text{in g/tkm})$$

2.2.2. For category M complete or completed vehicles:

$$avgCO2_{sg} = \frac{\sum_v CO2_v}{(V_{sg} - V_{pv_{sg}}) \times PN_{sg}} \quad \text{n g/pkm}$$

2.2.3. For category M primary vehicles of heavy-duty vehicles:

$$avgCO2p_{sg} = \frac{\sum_v CO2p_v}{V_{pv_{sg}} \times PN_{sg}} \quad (\text{in g/pkm})$$

Where,

$\sum_v$  is the sum over all new heavy-duty vehicles of the manufacturer in the sub-group  $sg$ , subject to the provisions of Article 7b;

$CO2_v$  is the specific CO<sub>2</sub> emissions of the new heavy-duty vehicle  $v$  determined in accordance with point 2.1;

$CO2p_v$  is the specific CO<sub>2</sub> emissions of the primary vehicle of the new heavy-duty vehicle  $v$  determined in accordance with point 2.1;

$V_{sg}$  is the number of new heavy-duty vehicles of the manufacturer in subgroup  $sg$ ;

$V_{pv_{sg}}$  the number of new heavy-duty vehicles within the sub-group  $sg$ , which pursuant to Article 7b shall be accounted for with the CO<sub>2</sub> emissions of their primary vehicles in the calculation of the average specific CO<sub>2</sub> emissions of point 2.2.3.;

$PL_{sg}$	is the average payload of vehicles in the sub-group $sg$ as determined in point 2.5.
$PN_{sg}$	is the average passenger number of vehicles in the sub-group $sg$ as determined in point 2.5.

## 2.3. Calculation of the zero- and low-emission factor as referred to in Article 5

### 2.3.1 Reporting periods 2019 to 2024

For each manufacturer and reporting period from 2019 to 2024, the zero- and low-emission factor (ZLEV) referred to in Article 5 shall be calculated as follows:

$$\text{ZLEV} = V_{all} / (V_{conv} + V_{zlev}) \quad \text{with a minimum of 0,97}$$

where:

$V_{all}$  is the number of new heavy-duty vehicles of the manufacturer in the sub-groups  $sg = 4\text{-UD}, 4\text{-RD}, 4\text{-LH}, 5\text{-RD}, 5\text{-LH}, 9\text{-RD}, 9\text{-LH}, 10\text{-RD}, 10\text{-LH}$ ;

$V_{conv}$  is the number of new heavy-duty vehicles of the manufacturer in the sub-groups  $sg = 4\text{-UD}, 4\text{-RD}, 4\text{-LH}, 5\text{-RD}, 5\text{-LH}, 9\text{-RD}, 9\text{-LH}, 10\text{-RD}, 10\text{-LH}$  excluding zero- and low-emission heavy-duty vehicles;

$V_{zlev}$  is the sum of  $V_{in}$  and  $V_{out}$ ,

where,

$V_{in}$  is  $\sum_v (1 + (1 - CO2_v / LET_{sg}))$   
with  $\sum_v$  being the sum over all new zero- and low-emission heavy-duty vehicles in the sub-groups  $sg = 4\text{-UD}, 4\text{-RD}, 4\text{-LH}, 5\text{-RD}, 5\text{-LH}, 9\text{-RD}, 9\text{-LH}, 10\text{-RD}, 10\text{-LH}$ ;

$CO2_v$  is the specific  $CO_2$  emissions in g/km of a zero- and low-emission heavy-duty vehicle  $v$  determined in accordance with point 2.1.;

$LET_{sg}$  is the low-emission threshold of the sub-group  $sg$  to which the vehicle  $v$  belongs as defined in point 2.3.4;

$V_{out}$  is the total number of zero-emission heavy-duty vehicles, which are not in the sub-groups referred to by the definition of  $V_{in}$ , and with a maximum of 1,5% of  $V_{conv}$ .

### 2.3.2 Reporting periods from 2025 to 2029

For each manufacturer and **reporting period**, the zero- and low-emission factor (ZLEV) referred to in Article 5 shall be calculated as follows:

$ZLEV = 1 - (y - x)$  unless this sum is larger than 1 or lower than 0.97 in which case the ZLEV factor shall be set to 1 or 0.97 respectively

Where:

x is 0,02

y is the sum of  $V_{in}$  and  $V_{out}$ , divided by  $V_{total}$ , where:

$V_{in}$  is the total number of newly registered low- and zero-emission heavy-duty vehicles in the sub-groups  $sg = 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH$ , where each of them is counted as  $ZLEV_{specific}$  in accordance with the formula below:

$$ZLEV_{specific} = 1 - (CO2_v / LET_{sg})$$

Where:

$CO2_v$  is the specific  $CO_2$  emissions in g/km of a zero- and low-emission heavy-duty vehicle  $v$  determined in accordance with point 2.1,

$LET_{sg}$  is the low-emission threshold of the sub-group  $sg$  to which the vehicle  $v$  belongs as defined in point 2.3.4;

$V_{out}$  is the total number of newly registered zero-emission heavy-duty vehicles, which are not in the sub-groups referred to by the definition of  $V_{in}$ , and with a maximum of 0,035 of  $V_{total}$ ;

$V_{total}$  is the total number of newly registered heavy-duty vehicles of the manufacturer in that reporting period.

Where  $V_{in}/V_{total}$  is lower than 0,0075, the ZLEV factor shall be set to 1.

### 2.3.3 Reporting periods as from 2030

$$ZLEV = 1$$

### 2.3.4 Calculation of the low-emission threshold

The low-emission threshold  $LET_{sg}$  of the sub-group  $sg$  is defined as follows:

$$LET_{sg} = (rCO2_{sg} \times PL_{sg}) / 2$$

Where:

$rCO2_{sg}$  is the reference  $CO_2$  emissions of the sub-group  $sg$ , as determined in point 3;

$PL_{sg}$  is the average payload of vehicles in the sub-group  $sg$  as determined in point 2.5.



## 2.4. Calculation of vehicle shares

For each manufacturer and each **reporting period**, the share of new heavy-duty vehicles in a sub-group  $share_{sg}$  shall be calculated as follows:

$$share_{sg} = \frac{V_{sg}}{V}$$

For each manufacturer and each **reporting period**, the share of new zero-emissions heavy-duty vehicles in a sub-group  $zev_{sg}$  shall be calculated as follows:

$$zev_{sg} = \frac{Vzev_{sg}}{V_{sg}}$$

For each manufacturer and each **reporting period**, the share of new heavy-duty vehicles within the sub-group  $sg$ , which pursuant to Article 7b shall be accounted for with the CO<sub>2</sub> emissions of their primary vehicles in the calculation of the average specific CO<sub>2</sub> emissions of point 2.2., shall be calculated as follows:

$$pv_{sg} = \frac{Vpv_{sg}}{V_{sg}}$$

Where,

$Vzev_{sg}$  is the number of new zero-emissions heavy-duty vehicles of the manufacturer in a subgroup  $sg$ ;

$Vpv_{sg}$  the number of new heavy-duty vehicles within the sub-group  $sg$ , which pursuant to Article 7b shall be accounted for with the CO<sub>2</sub> emissions of their primary vehicles in the calculation of the average specific CO<sub>2</sub> emissions of point 2.2.;

$V_{sg}$  is the number of new heavy-duty vehicles of the manufacturer in a subgroup  $sg$ ;

$V$  is the number of new heavy-duty vehicles of the manufacturer.

## 2.5. Payload values, passenger numbers and cargo volumes

The average payload value  $PL_{sg}$  of a vehicle of category N or O in a sub-group  $sg$  shall be calculated as follows:

$$PL_{sg} = \sum_{mp} W_{sg,mp} \times PL_{sg,mp}$$

The average passenger number  $PN_{sg}$  of a vehicle of category M in a sub-group  $sg$  shall be calculated as follows:

$$PN_{sg} = \sum_{mp} W_{sg,mp} \times PN_{sg,mp}$$

Where,

$\sum_{mp}$  is the sum over all mission profiles  $mp$

$W_{sg,mp}$ , is the mission profile weight specified in points 2.1.1 to 2.1.3

$PL_{sg,mp}$  is the payload value attributed to the vehicles of category N and O in the sub-group  $sg$  for the mission profile  $mp$ , as defined in points 2.5.1 and 2.5.3.

$PN_{sg,mp}$  is the passenger number attributed to the vehicles of category M in the sub-group  $sg$  for the mission profile  $mp$ , as defined in point 2.5.2.

### 2.5.1. Vehicles of category N.

Payload values  $PL_{sg, mp}$  (in tons) are determined as follows:

Vehicle sub-group $sg^*$	Mission profile $mp^{**}$													
	RDL	RDR	LHL	LHR	UDL	UDR	REL	RER	LEL	LER	MUL	MUR	COL	COR
<b>53</b>	As determined in point 3.1.1		Not applicable		As determined in point 3.1.1		Not applicable							
<b>54</b>														
<b>1s</b>														
<b>1</b>														
<b>2</b>			As determined in point 3.1.1											
<b>3</b>	Not applicable													
<b>4-UD</b>	0,9	4,4	1,9	14	0,9	4,4	3,5	17,5	3,5	26,5	0,6	3,0	0,9	4,4
<b>4-RD</b>														
<b>4-LH</b>														
<b>4v</b>														
<b>5-RD</b>	2,6	12,9	2,6	19,3	2,6	12,9	3,5	17,5	3,5	26,5	n.a.	n.a.	2,6	12,9
<b>5-LH</b>														
<b>5v</b>														
<b>9-RD</b>	1,4	7,1	2,6	19,3	1,4	7,1	3,5	17,5	3,5	26,5	1,2	6,0	1,4	7,1
<b>9-LH</b>														
<b>9v</b>														
<b>10-RD</b>	2,6	12,9	2,6	19,3	2,6	12,9	3,5	17,5	3,5	26,5	n.a.	n.a.	2,6	12,9
<b>10-LH</b>														
<b>10v</b>														
<b>11</b>	1,4	7,1	2,6	19,3	1,4	7,1	3,5	17,5	3,5	26,5	1,2	6,0	1,4	7,1
<b>12</b>	2,6	12,9	2,6	19,3	2,6	12,9	3,5	17,5	3,5	26,5	n.a.	n.a.	2,6	12,9
<b>16</b>	Not applicable												2,6	12,9

\* See definitions in point 1.1

\*\* See definitions in point 1.4

Technically permissible maximum payload values  $maxPL_{sg}$  and cargo volumes  $CV_{sg}$  are determined according to point 3.1.1.

2.5.2. Vehicles of category M.

Passenger numbers  $PN_{sg,mp}$ , passenger masses  $PM_{sg,mp}$  and technically permissible maximum passenger numbers  $maxPN_{sg}$  for sub-group  $sg$  and mission profile  $mp$  are determined according to point 3.1.1.

2.5.3. Vehicles of category O.

Payload values  $PL_{sg, mp}$  (in tons) are determined as follows:

Vehicle sub-group ( $sg$ )*	Mission profile ( $mp$ )**						
	RDL	RDR	LHL	LHR	UDL	UDR	REL, RER, LEL, LER
111, 111V, 112, 112V, 113	1,5	7,5	1,5	11,2	n.a.	n.a.	n.a.
121, 121V, 123, 123V, , 125	2,2	11,2	2,2	16,8	n.a.	n.a.	n.a.
122, 122V, 124, 124V, 126	2,4	12,2	2,4	18,3	n.a.	n.a.	n.a.
131, 131v, 132, 132v, 133	2,6	12,9	2,6	19,3	n.a.	n.a.	n.a.
421, 421v, 422, 422v, 423	2,6	12,9	2,6	19,3	n.a.	n.a.	n.a.
431, 431v, 432, 432v, 433	2,6	12,9	2,6	19,3	n.a.	n.a.	n.a.
611, 612	1,2	6,1	1,2	9,2	n.a.	n.a.	n.a.
611v, 612v	1,2	6,1	1,2	9,2	n.a.	n.a.	n.a.
621, 621v, 623, 623v	1,3	6,3	1,3	9,5	n.a.	n.a.	n.a.
622, 622V, 624, 624V,	2,6	12,9	2,6	19,3	n.a.	n.a.	n.a.

625							
631, 631v, 632, 632v, 633	2,6	12,9	2,6	19,3	n.a.	n.a.	n.a.

\* See definitions in point 1.1

\*\* See definitions in point 1.4

Technically permissible maximum payload values  $maxPL_{sg}$  and cargo volumes  $CV_{sg}$  are determined according to point 3.1.1.

## 2.6. Calculation of the mileage and payload or passenger-number weighting factor

The mileage and payload (passenger) weighting factor ( $MPW_{sg}$ ) of a sub-group  $sg$  is defined as the product of the annual mileage specified in point 2.6.1 and the payload and passenger-number values for the sub-group specified in points 2.5.1, 2.5.2 and 2.5.3 for vehicle categories N, M and O, respectively, normalised to the respective value for sub-group 5-LH, and shall be calculated as follows:

$$MPW_{sg} = \frac{(AM_{sg} \times PL_{sg})}{(AM_{5-LH} \times PL_{5-LH})} \quad (\text{for category N and O vehicles})$$

$$MPW_{sg} = \frac{(AM_{sg} \times PN_{sg})}{(AM_{5-LH} \times PL_{5-LH})} \quad (\text{for category M vehicles})$$

Where,

$AM_{sg}$  is the annual mileage specified in point 2.6.1, 2.6.2 and 2.6.3 for the vehicles in the respective sub-group;

$AM_{5-LH}$  is the annual mileage specified for the sub-group 5-LH in 2.6.1;

$PL_{sg}$  is as determined in points 2.5.1 and 2.5.3;

$PN_{sg}$  is as determined in point 2.5.2;

$PL_{5-LH}$  is the average payload value for the sub-group 5-LH as determined in point 2.5.1.

### 2.6.1. Annual mileages for vehicles of category N

Vehicle sub-group (sg)*	Annual mileage $AM_{sg}$ (in km)
53	58 000
54	58 000
1s	58 000
1	58 000
2	60 000
3	60 000
4-UD	60 000
4-RD	78 000
4-LH	98 000
4v	60 000

5-RD	78 000
5-LH	116 000
5v	60 000
9-RD	73 000
9-LH	108 000
9v	60 000
10-RD	68 000
10-LH	107 000
10v	60 000
11	65 000
12	67 000
16	60 000

\* See definitions in point 1.1

### 2.6.2. Annual mileages for vehicles of category M

Vehicle sub-group ( <i>sg</i> )*	Annual mileage AM <sub>sg</sub> (in km)
31-LF	60 000
31-L1	60 000
31-L2	60 000
31-DD	60 000
32-C2	96 000
32-C3	96 000
32-DD	96 000
33-LF	60 000
33-L1	60 000
33-L2	60 000
33-DD	60 000
34-C2	96 000
34-C3	96 000
34-DD	96 000

35-FE	60 000
39-FE	60 000

\* See definitions in point 1.1

### 2.6.3. Annual mileages for vehicles of category O

Vehicle sub-group (sg)*	Annual mileage AM <sub>sg</sub> (in km)
111, 111V,112, 112V, 113	52 000
121, 121V, 122, 122V, 123, 123V, 124, 124V, 125, 126, 131, 131v, 132, 132v, 133	77 000
421, 421v, 422, 422v, 423, 431, 431v, 432, 432v, 433	68 000
611, 612, 611v, 612v, 621, 623, 621v, 623v	40 000
622, 622V, 624, 624V, 625, 631, 631v, 632, 632v, 633	68 000

\* See definitions in point 1.1

### 2.7. Average specific CO<sub>2</sub> emissions of manufacturers, as referred to in Article 4

For each manufacturer the following average specific CO<sub>2</sub> emissions shall be calculated:

2.7.1. For the reporting periods 2019 to 2029:

$$CO2(2025) = ZLEV \times \sum_{sg} share_{sg} \times MPW_{sg} \times avgCO2_{sg}$$

2.7.2. For the reporting periods as from 2025:

$$CO2(NO) = \sum_{sg} share_{sg} \times MPW_{sg} \times avgCO2_{sg}$$

$$CO2(MCO2) = \sum_{sg} share_{sg} \times MPW_{sg} \times [avgCO2_{sg} \times (1 - pv_{sg}) + avgCO2p_{sg} \times pv_{sg}]$$

$$CO2(MZE) = \sum_{sg} share_{sg} \times MPW_{sg} \times (1 - zev_{sg}) \times rCO2_{sg}$$

$$CO2(M) = CO2(MCO2) + CO2(MZE)$$

Where,

$\sum_{sg}$  is the sum is over those sub-groups that are included in the calculation of the particular average specific CO<sub>2</sub> emissions according to point 4.2;

$ZLEV$  is as determined in point 2.3;

$share_{sg}$  is as determined in point 2.4;

$zev_{sg}$  is as determined in point 2.4;

$pv_{sg}$  is as determined in point 2.4;

$MPW_{sg}$  is as determined in point 2.6;

$avgCO2_{sg}$  is as determined in point 2.2;

$avgCO2p_{sg}$  is as determined in point 2.2;

$rCO2_{sg}$  is as determined in point 3.1.2.

### 3. CALCULATION OF THE REFERENCE VALUES

#### 3.1. Reference values

The following reference values shall be calculated on the basis of all new heavy-duty vehicles of all manufacturers for the reference period applicable to the sub-group  $sg$  according to point 3.2.

3.1.1. For each vehicle sub-group  $sg$ , payload  $PL_{sg,mp}$ , passenger number  $PN_{sg,mp}$ , passenger mass  $PM_{sg,mp}$ , technically permissible maximum payload  $maxPL_{sg}$ , technically permissible maximum passenger number  $maxPN_{sg}$  and cargo volume  $CV_{sg}$  values shall be calculated as follows:

$$PL_{sg,mp} = \frac{\sum_v PL_{v,mp}}{rV_{sg}} \quad (\text{for vehicles of category N})^*$$

$$PN_{sg,mp} = \frac{\sum_v PN_{v,mp}}{rV_{sg}} \quad (\text{for vehicles of category M})^*$$

$$PM_{sg,mp} = \frac{\sum_v PM_{v,mp}}{rV_{sg}} \quad (\text{for vehicles of category M})^*$$

$$maxPL_{sg} = \frac{\sum_v maxPL_v}{rV_{sg}} \quad (\text{for vehicles of category N})$$

$$maxPN_{sg} = \frac{\sum_v maxPN_v}{rV_{sg}} \quad (\text{for vehicles of category M})$$

$$CV_{sg} = \frac{\sum_v CV_v}{rV_{sg}} \quad (\text{for vehicles of category O})$$

(\*only for vehicle sub-groups, for which no explicit values for  $PL_{sg,mp}$  or  $PN_{sg,mp}$  are provided in point 2.5)

3.1.2. Reference CO<sub>2</sub> emissions  $rCO2_{sg}$  referred to in Article 3 shall be calculated as follows:

$$rCO2_{sg} = \frac{\sum_v(CO2_v/PL_{sg})}{rV_{sg}} \text{ (for vehicles of category N and O)}$$

$$rCO2_{sg} = \frac{\sum_v(CO2_v/PN_{sg})}{rV_{sg}} \text{ (for vehicles of category M)}$$

$$rCO2p_{sg} = \frac{\sum_v(CO2p_v/PN_{sg})}{rV_{sg}} \text{ (for vehicles of category M)}$$

Where,

$\Sigma_v$  is the sum over all new heavy-duty vehicles in the sub-group  $sg$  registered in the reference period applicable to  $sg$  according to point 3.2;

$CO2_v$  are the specific CO<sub>2</sub> emissions of the new heavy-duty vehicle  $v$  as determined in accordance with point 2.1, if applicable adjusted pursuant to Annex II;

$CO2p_v$  are the specific CO<sub>2</sub> emissions of the primary vehicle of the new-heavy duty vehicle  $v$  as determined in accordance with point 2.1, if applicable adjusted pursuant to Annex II;;

$rV_{sg}$  is the number of all new heavy-duty vehicles in the sub-group  $sg$  registered in the reference period applicable to  $sg$  according to point 3.2;

$PL_{sg}$  is the average payload of vehicles in the sub-group  $sg$  as determined in point 2.5;

$PN_{sg}$  is the average passenger number of vehicles in the sub-group  $sg$  as determined in point 2.5;

$PL_{v,mp}$  is the payload of vehicle  $v$  in the mission profile  $mp$ , as determined from the data reported according to Articles 13a and 13b ;

$PN_{v,mp}$  is the passenger number of vehicle  $v$  in the mission profile  $mp$  as determined from the data reported according to Articles 13a and 13b;

$PM_{v,mp}$  is the passenger mass of vehicle  $v$  in the mission profile  $mp$  as determined from the data reported according to Articles 13a and 13b;

$maxPL_v$  is the technically permissible maximum payload of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;

$maxPN_v$  is the technically permissible maximum passenger number of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;



$CV_v$  is the cargo volume of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b.

### 3.2. Reference periods applicable to sub-groups

The following reporting periods shall be applied as reference periods to vehicle sub-groups:

Vehicle sub-group $sg$	Reporting period of the year applicable as reference period
4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH	2019
All others	2025

#### 3.2.1. If in the reference period as specified in point 3.2 in a sub-group $sg$ the number of new heavy-duty vehicles of all manufacturers is less than 50 the following rules shall apply:

The average specific CO<sub>2</sub> emissions  $avgCO2_{sg}$  and  $avgCO2p_{sg}$  as provided for in point 2.2 and the reference CO<sub>2</sub> emissions  $rCO2_{sg}$  and  $rCO2p_{sg}$  as provided for in point 3.1.2 shall be set to “0” for all manufacturers in the sub-group  $sg$  for the purpose of calculating the average specific CO<sub>2</sub> emissions according to point 2.7 and the specific CO<sub>2</sub> emissions targets according to point 4.1 for the reporting periods of the years  $< Y + 5$ . Here  $Y$  is the year of the first reporting period in which the number of new heavy-duty vehicles of all manufacturers in the sub-group  $sg$  is at least 50.

To obtain the reference CO<sub>2</sub> emissions  $rCO2_{sg}$  and  $rCO2p_{sg}$  for the purpose of calculating the specific emissions target according to point 4, first the corresponding entities provided for in point 3.1.2 shall be calculated for the reporting period of the year  $Y$  instead of for the reference period applicable to the sub-group  $sg$  according to point 3.2.

The resulting values shall then be divided by

- the target factor  $RET_{sg,Y}$ , as defined in point 5.1.1, for obtaining reference CO<sub>2</sub> emissions  $rCO2_{sg}$ ,
- the target factor  $RETp_{sg,Y}$ , as defined in point 5.1.1, for obtaining reference CO<sub>2</sub> emissions  $rCO2p_{sg}$ .

## 4. CALCULATION OF THE SPECIFIC EMISSION TARGET OF A MANUFACTURER REFERRED TO IN ARTICLE 6

### 4.1. Specific emission targets

For each manufacturer the following specific emission targets  $T$  shall be calculated as follows:

#### 4.1.1. For the reporting periods of the years from 2025 to 2029:

$$T(2025) = \sum_{sg} share_{sg} \times MPW_{sg} \times (1 - rf_{sg}) \times rCO2_{sg}$$

4.1.2. For the reporting periods of the years as from 2030:

$$T(NO) = \sum_{sg} share_{sg} \times MPW_{sg} \times (1 - rf_{sg}) \times rCO2_{sg}$$

$$T(MCO2) = \sum_{sg} share_{sg} \times MPW_{sg} \times [(1 - pv_{sg}) \times (1 - rf_{sg}) \times rCO2_{sg} + pv_{sg} \times (1 - rfp_{sg}) \times rCO2p_{sg}]$$

$$T(MZE) = \sum_{sg} share_{sg} \times MPW_{sg} \times (1 - zevM_{sg}) \times rCO2_{sg}$$

$$T(M) = T(MCO2) + T(MZE)$$

Where,

$\sum_{sg}$	is the sum over those sub-groups that are included in the calculation of the particular specific emissions target according to point 4.2;
$share_{sg}$	is as determined in point 2.4;
$MPW_{sg}$	is as determined point 2.6;
$rf_{sg}$	is the CO <sub>2</sub> reduction target <b>applicable in</b> the specific <b>reporting period</b> to new heavy duty vehicles in sub-group <i>sg</i> as provided for in point 4.3;
$rfp_{sg}$	is the CO <sub>2</sub> reduction target <b>applicable in</b> the specific <b>reporting period</b> to primary vehicles of new heavy-duty vehicles in sub-group <i>sg</i> as provided for in point 4.3;
$zevM_{sg}$	is the zero-emission vehicles mandate <b>applicable in</b> the specific <b>reporting period</b> to vehicles in sub-group <i>sg</i> as provided for in point 4.3;
$rCO2_{sg}$	is as determined in point 3.1.2;
$rCO2p_{sg}$	is as determined in point 3.1.2;
$pv_{sg}$	is as determined in point 2.4.

4.2. Vehicle sub-groups included in the calculation of average specific CO<sub>2</sub> emissions and specific emissions targets of manufacturers

The following sub-groups *sg* shall be included in the calculation of the specific CO<sub>2</sub> emissions  $CO2(X)$ , specific emissions targets  $T(X)$  and CO<sub>2</sub> emissions trajectory  $ET(X)_Y$ :

X = 2025	X= NO	X = MCO2	X= MZE
vehicle sub-groups, subject to CO <sub>2</sub> emissions targets according to Article 3a paragraph 1 (a)	sub-groups of transport of goods vehicles, subject to CO <sub>2</sub> emissions targets according to Article 3a paragraphs 1(b), 1(c) and 1(d) and	sub-groups of transport of persons vehicles, subject to CO <sub>2</sub> emissions targets according to Article 3a paragraphs 1(b), 1(c) and	sub-groups of transport of persons vehicles, subject to zero-emissions vehicle targets according to Article 3b

	<b>paragraph 3</b>	<b>1(d)</b>	
4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH	All vehicle sub-groups referred to in points 1.1.1 and 1.1.3.	32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD,	31-LF, 31-L1, 31-L2, 31-DD, 33-LF, 33-L1, 33-L2, 33-DD, 35-FE, 39-FE

#### 4.3. CO<sub>2</sub> reduction targets and zero-emissions vehicle mandates

4.3.1. The following CO<sub>2</sub> emissions reduction targets  $rf_{sg}$  and  $rfp_{sg}$  pursuant to Article 3a shall apply to vehicles in the sub-group  $sg$  for different reporting periods:

CO <sub>2</sub> reduction targets $rf_{sg}$ and $rfp_{sg}$					
Sub-groups $sg$		Reporting period of the years			
		2025 – 2029	2030 – 2034	2035 – 2039	As from 2040
<b>Medium lorries</b>	<b>53, 54</b>	<b>0</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Heavy lorries &gt; 7,4t</b>	<b>1s, 1, 2, 3</b>	<b>0</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Heavy lorries &gt; 16 t with 4x2 and 6x4 axle configurations</b>	<b>4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH</b>	<b>15%</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Heavy lorries &gt; 16 t with special axle configurations</b>	<b>11, 12, 16</b>	<b>0</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Coaches (<math>rf_{sg}</math>)</b>	<b>32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD</b>	<b>0</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Primary vehicles of coaches (<math>rfp_{sg}</math>)</b>	<b>32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD</b>	<b>0</b>	<b>43%</b>	<b>64%</b>	<b>90%</b>
<b>Trailers</b>		<b>0</b>	<b>7,5%</b>	<b>7,5%</b>	<b>7,5%</b>
<b>Semi-trailers</b>		<b>0</b>	<b>15%</b>	<b>15%</b>	<b>15%</b>

For reporting periods of the years before 2025, all CO<sub>2</sub> reduction targets  $rf_{sg}$  and  $rfp_{sg}$  shall be 0.

4.3.2. The following zero-emission vehicle targets  $z_{ev}M_{sg}$  pursuant to Article 3b are applicable to vehicles in the sub-group  $sg$  for different reporting periods:

Zero-emission vehicle mandates $zevM_{sg}$							
Sub-groups $sg$		Reporting period of the years					
		before 2030	2030 – 2034	2035 – 2039	As from 2040		
<b>Urban buses</b>	<b>heavy</b>	<b>31-LF, 31-DD, 33-L1, 35-FE, 31-L2, 33-L2</b>	<b>31-L1, 33-LF, 33-DD, 39-FE,</b>	<b>0</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

## 5. EMISSION CREDITS AND DEBTS REFERRED TO IN ARTICLE 7

### 5.1. CO<sub>2</sub> emissions reduction trajectories

#### 5.1.1. Target factors

For each vehicle sub-group  $sg$  and reporting period of a year  $Y$  target factors shall be defined as follows:

$$RET_{sg,Y} = (1 - rf_{sg,uY}) + (rf_{sg,uY} - rf_{sg,lY}) \times (uY - Y) / (uY - lY)$$

$$RETp_{sg,Y} = (1 - rfp_{sg,uY}) + (rfp_{sg,uY} - rfp_{sg,lY}) \times (uY - Y) / (uY - lY)$$

$$ZET_{sg,Y} = (1 - zevM_{sg,uY}) + (zevM_{sg,uY} - zevM_{sg,lY}) \times (uY - Y) / (uY - lY)$$

Where,

$lY, uY$  are the values for the lower year and upper year in the set  $\{rY, 2025, 2030, 2040\}$  defining the smallest interval for which the condition  $lY \leq Y < uY$  holds;

$rY$  is the year of the reference period applicable to the vehicle sub-group  $sg$  according to point 3.2;

$rf_{sg,lY}, rf_{sg,uY}$  are the CO<sub>2</sub> reduction targets of the sub-group  $sg$  for new heavy duty vehicles of the years  $lY$  and  $uY$  according to point 4.3;

$rfp_{sg,lY}, rfp_{sg,uY}$  are the CO<sub>2</sub> reduction targets of the sub-group  $sg$  for primary vehicles of new heavy duty vehicles of the years  $lY$  and  $uY$  according to point 4.3;

$zevM_{sg,lY}, zevM_{sg,uY}$  are the zero emissions vehicle mandates for new heavy duty vehicles of the years  $lY$  and  $uY$  according to point 4.3;

For reporting years  $Y < rY$ , the values of  $RET_{sg,Y}$ ,  $RETp_{sg,Y}$  and  $ZET_{sg,Y}$  shall be set to 1 such that there is no contribution of the vehicle sub-group  $sg$  to the CO<sub>2</sub> emissions trajectory.

#### 5.1.2. CO<sub>2</sub> emissions reduction trajectories

5.1.2.1. Then for each vehicle sub-group  $sg$  and reporting period of a year  $Y$  the following CO<sub>2</sub> emissions reduction trajectories shall be defined:

$$ET_{sg,Y} = RET_{sg,Y} \times rCO2_{sg}$$

$$ETp_{sg,Y} = RETp_{sg,Y} \times rCO2p_{sg}$$

$$ET_{z,sg,Y} = ZET_{sg,Y} \times rCO2_{sg}$$

5.1.2.2. For each manufacturer and reporting periods of a year  $Y$  between 2019 and 2024 the following CO<sub>2</sub> emissions reduction trajectories shall be defined:

$$ET(2025)_Y = \sum_{sg} share_{sg} \times MPW_{sg} \times ET_{sg,Y}$$

5.1.2.3. For each manufacturer and reporting periods of a year  $Y$  between 2025 and 2040 the following CO<sub>2</sub> emissions reduction trajectories shall be defined:

$$ET(NO)_Y = \sum_{sg} share_{sg} \times MPW_{sg} \times ET_{sg,Y}$$

$$ET(MCO2)_Y = \sum_{sg} share_{sg} \times MPW_{sg} \times [(1 - pv_{sg}) \times ET_{sg,Y} + pv_{sg} \times ETp_{sg,Y}]$$

$$ET(MZE)_Y = \sum_{sg} share_{sg} \times MPW_{sg} \times ET_{z,sg,Y}$$

$$ET(M)_Y = ET(MCO2)_Y + ET(MZE)_Y$$

Where,

- $\sum_{sg}$  is the sum over those sub-groups that are included in the calculation of the particular CO<sub>2</sub> emissions trajectory according to point 4.2;
- $share_{sg}$  is the share of new heavy-duty vehicles of the manufacturer in the sub-group  $sg$ , as determined in point 2.4;
- $MPW_{sg}$  is as determined point 2.6;
- $rCO2_{sg}$  is as determined in point 3.1.2;
- $rCO2p_{sg}$  is as determined in point 3.1.2;
- $pv_{sg}$  is the share of new heavy-duty vehicles of the manufacturer within the sub-group  $sg$ , which pursuant to Article 7b shall be accounted for with the CO<sub>2</sub> emissions of their primary vehicles in the calculation of the average specific CO<sub>2</sub> emissions of point 2.2

## 5.2. Calculation of the emission credits and debts in each reporting period

For each manufacturer and each reporting period of the years  $Y$  from 2019 to 2040 the emission credits  $cCO2(X)_Y$  and emission debts  $dCO2(X)_Y$ , ( $X = NO, M$ ), shall be the maximum of the following values and 0 (i.e. emission credits and debts cannot be negative):

	2019 ≤ Y < 2025	2025 ≤ Y < 2030	2030 ≤ Y < 2040
$cCO2(NO)_Y$	$[ET(2025)_Y - CO2(2025)_Y] \times V_y$	$[ET(NO)_Y - CO2(NO)_Y] \times V_y$	$[ET(NO)_Y - CO2(NO)_Y] \times V_y$
$dCO2(NO)_Y$	0	$[CO2(2025)_Y - T(2025)_Y] \times V_y$	$[CO2(NO)_Y - T(NO)_Y] \times V_y$
$cCO2(M)_Y$	0	$[ET(M)_Y - CO2(M)_Y] \times V_y$	$[ET(M)_Y - CO2(M)_Y] \times V_y$
$dCO2(M)_Y$	0	0	$[CO2(M)_Y - T(M)_Y] \times V_y$

Where,

- $ET(X)_Y$  is the manufacturer's emission trajectory in the **reporting period of the** year Y determined in accordance with point 5.1 ( $X = 2025, NO, M$ );
- $CO2(X)_Y$  is the manufacturer's average specific emissions in the **reporting period of the** year Y determined in accordance with point 2.7 ( $X = 2025, NO, M$ );
- $T(X)_Y$  is the manufacturer's specific emission target in the **reporting period of the** year Y determined in accordance with point 4 ( $X = 2025, NO, M$ );
- $V_Y$  is the number of new heavy-duty vehicles of the manufacturer in the **reporting period of the** year Y.

### 5.3. Emission debt limit

For each manufacturer the emission debt limits  $limCO2(X)_Y$  in a reporting period of the year Y are defined as follows:

- $limCO2(NO)_Y = T(2025)_Y \times 0,05 \times V(2025)_Y$  for the reporting periods of the year  $Y < 2030$ ;
- $limCO2(NO)_Y = T(NO)_Y \times 0,05 \times V(NO)_Y$  for the reporting periods of the year  $Y \geq 2030$ ;
- $limCO2(M)_Y = T(M)_Y \times 0,05 \times V(M)_Y$  for the reporting periods of the year  $Y \geq 2030$ .

Where

- $T(X)_Y$  is the manufacturer's specific emission target in the **reporting period of the** year Y determined in accordance with point 4 ( $X = 2025, NO, M$ );
- $V(X)_Y$  is the number of new heavy-duty vehicles of the manufacturer in the **reporting period of the** year Y in the vehicle sub-groups, which are included in the calculation of the specific CO<sub>2</sub> emissions  $CO2(X)$  according to point 4.2 ( $X = 2025, NO, M$ ).

### 5.4. Early emission credits

Emission debts acquired **for the reporting periods of the** year 2025 shall be reduced by an amount corresponding to the emission credits acquired prior to **this reporting period**, which is determined for each manufacturer as follows:

$$redCO2 = \min(dCO2(NO)_{2025}; \sum_{Y=2019}^{2024} cCO2(NO)_Y)$$

Where,

- $\min$  is the minimum of the two values mentioned between the brackets;
- $\sum_{Y=2019}^{2024}$  is the sum over the **reporting periods of the years Y from 2019 to 2024**;
- $dCO2(NO)_Y$  is the emission debts for **reporting period of the year Y** as determined in accordance with point 5.2;
- $cCO2(NO)_Y$  is the emission credits for the **reporting period of the year Y** as determined in accordance with point 5.2;.

**6. DETERMINATION OF A MANUFACTURER'S EXCESS CO<sub>2</sub> EMISSIONS REFERRED TO IN ARTICLE 8(2)**

For each manufacturer and each *reporting period* of the year Y from *the year* 2025 onwards the value of the vehicle category specific excess CO<sub>2</sub> emissions  $exeCO_2(X)_Y$  shall be determined as follows. If the value is positive (X = NO, M). If the following calculations result in a negative value for  $exeCO_2(X)_Y$ , the latter shall be set to 0.

For the *reporting period* of the year 2025:

$$exeCO_2(NO)_{2025} = dCO_2(NO)_{2025} - \sum_{Y=2019}^{2024} cCO_2(NO)_Y - limCO_2(NO)_{2025}$$

For the reporting periods of the years Y from 2026 to 2028, from 2030 to 2033 and from 2035 to 2038:

$$exeCO_2(NO)_Y = \sum_{I=2025}^Y (dCO_2(NO)_I - cCO_2(NO)_I) - \sum_{J=2025}^{Y-1} exeCO_2(NO)_J - redCO_2 - limCO_2(NO)_Y$$

For the reporting periods of the years Y from from 2030 to 2033 and from 2035 to 2038:

$$exeCO_2(M)_Y = \sum_{I=2025}^Y (dCO_2(M)_I - cCO_2(M)_I) - \sum_{J=2030}^{Y-1} exeCO_2(M)_J - limCO_2(M)_Y$$

For the reporting period of the years Y = 2029, 2034 and 2039:

$$exeCO_2(NO)_Y = \sum_{I=2025}^Y (dCO_2(NO)_I - cCO_2(NO)_I) - \sum_{J=2025}^{Y-1} exeCO_2(NO)_J - redCO_2$$

For the reporting period of the years Y = 2034 and 2039:

$$exeCO_2(M)_Y = \sum_{I=2025}^Y (dCO_2(M)_I - cCO_2(M)_I) - \sum_{J=2030}^{Y-1} exeCO_2(M)_J$$

For the reporting periods of the year 2040:

$$exeCO_2(NO)_{2040} = (CO_2(NO)_{2040} - T(NO)_{2040}) \times V_{2040} + \sum_{I=2025}^{2039} (dCO_2(NO)_I - cCO_2(NO)_I) - \sum_{J=2025}^{2039} exeCO_2(NO)_J - redCO_2$$

$$exeCO_2(M)_{2040} = (CO_2(M)_{2040} - T(M)_{2040}) \times V_{2040} + \sum_{I=2025}^{2039} (dCO_2(M)_I - cCO_2(M)_I) - \sum_{J=2030}^{2039} exeCO_2(M)_J$$

For the reporting periods of the years Y > 2040:

$$exeCO_2(NO)_Y = (CO_2(NO)_Y - T(NO)_Y) \times V_Y$$

$$exeCO_2(M)_Y = (CO_2(M)_Y - T(M)_Y) \times V_Y$$

Where,

$\sum_{Y=2019}^{2024}$  is the sum over the *reporting periods of the years Y from 2019 to 2024*;

$\sum_{I=2025}^Y$  is the sum over the *reporting periods of the years I from 2025 to the year Y*;

$\sum_{J=2025}^{Y-1}$  is the sum over the *reporting periods of the years J from 2025 to the year (Y-1)*;

$\sum_{I=2025}^{2039}$	is the sum over the <i>reporting periods of the years I</i> from 2025 to 2039;
$\sum_{J=2030}^{Y-1}$	is the sum over the reporting periods of the years J from 2030 to the year (Y-1);
$dCO2(X)_Y$	is the emission debts for the <i>reporting period of the year Y</i> as determined in accordance with point 5.2 (X = NO, M);
$cCO2(X)_Y$	is the emission credits for the <i>reporting period of the year Y</i> as determined in accordance with point 5.2 (X = NO, M);
$limCO2(X)_Y$	is the emission debt limit as determined in accordance with point 5.3 (X = NO, M);
$redCO2(X)$	is the reduction of emission debts of the <i>reporting period of the year 2025</i> as determined in accordance with 5.4 (X = NO, M).

In all other cases the value of the excess emissions  $exeCO2(X)_Y$  shall be set to 0 (X = NO, M).

The excess CO2 emissions of the reporting period of the year Y as referred to in Article 8(2) shall be:

$$exeCO2_Y = exeCO2(NO)_Y + exeCO2(M)_Y$$



## ANNEX II

### Adjustment procedures referred to in Article 11

#### **1. ADJUSTMENT OF REFERENCE CO<sub>2</sub> EMISSIONS FOLLOWING AN AMENDMENT OF THE TYPE APPROVAL PROCEDURES REFERRED TO IN ARTICLE 11(2)**

Following an amendment of the type approval procedures referred to in Article 11(2), the reference CO<sub>2</sub> emissions referred to in Point 3.1.2 of Annex I shall be recalculated.

For this purpose the CO<sub>2</sub> emissions in g/km of new heavy-duty vehicles  $v$  of the reference period and of their primary vehicles determined for a mission profile  $mp$ , as referred to in point 2.1 of Annex I, shall be adjusted as follows:

$$CO2_{v,mp} = CO2(RP)_{v,mp} \cdot (\sum_r s_{r,sg} \cdot CO2_{r,mp}) / (\sum_r s_{r,sg} \cdot CO2(RP)_{r,mp})$$

$$CO2p_{v,mp} = CO2p(RP)_{v,mp} \cdot (\sum_r s_{r,sg} \cdot CO2p_{r,mp}) / (\sum_r s_{r,sg} \cdot CO2p(RP)_{r,mp})$$

Where

$\sum_r$  is the sum over all representative vehicles  $r$  for the sub-group  $sg$ ;

$sg$  is the sub-group to which the vehicle  $v$  belongs;

$s_{r,sg}$  is the statistical weight of the representative vehicle  $r$  in the sub-group  $sg$ ;

$CO2(RP)_{v,mp}$  is the specific CO<sub>2</sub> emissions of vehicle  $v$  in g/km, as determined on mission profile  $mp$  and based on the monitoring data of the reference period;

$CO2(RP)_{r,mp}$  is the specific CO<sub>2</sub> emissions of the representative vehicle  $r$  in g/km, as determined on mission profile  $mp$  in accordance with Regulation (EC) No 595/2009 and its implementing measures as it was applied in the reference period;

$CO2_{r,mp}$  is the specific CO<sub>2</sub> emissions of the representative vehicle  $r$ , as determined on mission profile  $mp$  in accordance with Regulation (EC) No 595/2009 and its implementing measures according to the amendments referred to in Article 11(3)(a);

$CO2p(RP)_{v,mp}$  is the specific CO<sub>2</sub> emissions of the primary vehicle of the heavy-duty vehicle  $v$  in g/km, as determined on mission profile  $mp$  and based on the monitoring data of the reference period;

$CO2p(RP)_{r,mp}$  is the specific CO<sub>2</sub> emissions of the primary vehicle of the representative vehicle  $r$  in g/km, as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures as it was applied in the reference period;

$CO2p_{r,mp}$

is the specific CO<sub>2</sub> emissions of the primary vehicle of the representative vehicle  $r$ , as determined on mission profile  $mp$  in accordance with Regulation (EC) No 595/2009 and its implementing measures according to the amendments referred to in Article 11(3)(a).

The specific CO<sub>2</sub> emissions shall be normalised pursuant to Annex III using those values for the parameters referred to in Article 14(1), point (f), that are applicable in the reporting period referred to in Article 11(2), point (a).

The representative vehicles shall be defined in accordance with the methodology referred to in Article 11(3).

## **2. APPLICATION OF THE ADJUSTED REFERENCE CO<sub>2</sub> EMISSIONS ACCORDING TO ARTICLE 11(2)**

If in the reporting period of the year  $Y$  the specific CO<sub>2</sub> emissions of some new heavy-duty vehicles of a manufacturer have been determined with amendments referred to in Article 11(2), the reference CO<sub>2</sub> emissions  $rCO_{2sg}$  of the vehicle sub-group  $sg$  used in points 4 and 5.1 of Annex I shall be calculated as follows:

$$rCO_{2sg} = \sum_i V_{sg,i} / V_{sg} \times rCO_{2sg,i}$$

where:

$\sum_i$  is the sum over

- for  $i = 1$ : the non-amended procedure for determining the CO<sub>2</sub> emissions, for which the initial reference CO<sub>2</sub> emissions without adjustments are applicable and
- for  $i \geq 1$ : all subsequent amendments referred to in Article 11(2).

$V_{sg}$  is the number of new heavy-duty vehicles of the manufacturer in the reporting period of the year  $Y$  and the vehicle sub-group  $sg$ ;

$V_{sg,i}$  is the number of new heavy-duty vehicles of the manufacturer in the reporting period of the year  $Y$  and in the vehicle sub-group  $sg$ , the specific CO<sub>2</sub> emissions of which have been determined with the amendment  $i$ ;

$rCO_{2sg,i}$  are:

- for  $i = 0$ : the non-adjusted reference CO<sub>2</sub> emissions
- for  $i \geq 1$ : the reference CO<sub>2</sub> emissions that have been determined for the vehicle sub-group  $sg$  with the amendment  $i$ .

## ANNEX III

### Normalisation of specific CO<sub>2</sub> emissions of new heavy-duty vehicles referred to in Article 4

#### 1. NORMALISATION OF SPECIFIC CO<sub>2</sub> EMISSIONS

For the purposes of the calculation in point 2.1 of Annex I, the values of CO<sub>2</sub> emissions  $CO_{2,v,mp}$  of vehicles are normalised as follow:

$$CO_{2,v,mp} = reportCO_{2,v,mp} + \Delta CO_{2,v,mp}(m) + \Delta CO_{2cv,v,mp}$$

$$m = PL_{sg,mp} - PL_{v,mp} + cCW_v \quad (\text{for vehicles of categories N and O})$$

$$m = PM_{sg,mp} - PM_{v,mp} + cCW_v \quad (\text{for vehicles of category M})$$

Where

$CO_{2,v,mp}$  are the normalised CO<sub>2</sub> emissions of the vehicle  $v$  determined for a mission profile  $mp$  that are to be considered in the calculation of Annex I point 2.1;

$reportCO_{2,v,mp}$  are the CO<sub>2</sub> emissions in g/km of the primary vehicle of a new heavy-duty vehicle  $v$  determined for a mission profile  $mp$  and reported in accordance with Articles 13a and 13b;

$\Delta CO_{2,v,mp}(m)$  is to be determined in accordance with point 3;

$\Delta CO_{2cv,v,mp}$  is to be determined in accordance with point 4;

$PL_{v,mp}$  is the payload of vehicle  $v$  in the mission profile  $mp$ , as determined from the data reported according to Articles 13a and 13b ;

$PL_{sg,mp}$  is the payload for sub-group  $sg$  and mission profile  $mp$  as provided for in point 2.5 of Annex I;

$PM_{v,mp}$  is the passenger mass of vehicle  $v$  in the mission profile  $mp$ , as determined from the data reported according to Articles 13a and 13b;

$PM_{sg,mp}$  is the passenger mass for sub-group  $sg$  and mission profile  $mp$  as provided for in point 2.5 of Annex I;

$cCW_v$  is the correction of the curb weight of the vehicle  $v$  according to point 2.

#### 2. CURB WEIGHT NORMALISATION

Since the transport utility of a vehicle increases with its technically permissible maximum payload or passenger number, but for technical reasons higher values for these parameters are correlated with higher curb weights and therefore higher CO<sub>2</sub> emissions, the following correction of the curb weight of a vehicle  $v$  in sub-group  $sg$  for the purpose of the normalisation of its specific CO<sub>2</sub> emissions according to point 1 shall be applied:

$$cCW_v = a_{sg} \cdot (\max PL_{sg} - \max PL_v) \quad \text{for vehicles of category N and O;}$$

$$cCW_v = a_{sg} \cdot (maxPN_{sg} - maxPN_v) \quad \text{for vehicles of category M;}$$

Where

- $a_{sg}$  is a linear coefficient determined according to point 2.1 for the reporting period of the vehicle  $v$ ;
- $maxPL_v$  is the technically permissible maximum payload of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;
- $maxPN_v$  is the technically permissible maximum passenger number of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;
- $maxPL_{sg}$  is the technically permissible maximum payload of vehicle sub-group  $sg$  determined according to point 2.5 of Annex I;
- $maxPN_{sg}$  is the technically permissible maximum passenger number of vehicle sub-group  $sg$  determined according to point 2.5 of Annex I.

## 2.1. Determination of normalisation parameters

For each reporting period the parameters  $a_{sg}$  and  $b_{sg}$  shall be determined with a linear regression analysis of the correlation of the values of  $CW_v$  with the values of  $maxPL_v$  (category N and O vehicles) and  $maxPN_v$  (category M vehicles), considering all newly registered vehicles  $v$  in the sub-group  $sg$ :

$$CW_v \approx a_{sg} \cdot maxPL_v + b_{sg} \quad \text{for vehicles of category N and O;}$$

$$CW_v \approx a_{sg} \cdot maxPN_v + b_{sg} \quad \text{for vehicles of category M.}$$

Where

- $CW_v$  is the curb weight of vehicle  $v$ , as determined from the data reported according to Articles 13a and 13b; if no precise value is available it may be approximated by the corrected actual mass of the vehicle  $v$
- $maxPL_v$  is the technically permissible maximum payload of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;
- $maxPN_v$  is the technically permissible maximum passenger number of vehicle  $v$  as determined from the data reported according to Articles 13a and 13b;

## 3. CHANGE OF CO<sub>2</sub> EMISSIONS FOR CHANGE IN TOTAL VEHICLE MASS

The ex-post change of CO<sub>2</sub> emissions of a vehicle  $v$  to be determined for a mission profile  $mp$  due to an ex-post change in the total mass to be attributed to the vehicle for the determination of CO<sub>2</sub> emissions is defined by the following linear approximation:

$$\Delta CO_{2,v,mp}(m) = m \cdot (CO_{2,v,r} - CO_{2,v,l}) / (Mr - Ml)$$

Where:

$m$	is the change of total mass attributed to the vehicle $v$ for the determination of its CO <sub>2</sub> emissions;
$CO_{2,v,r}$	are the CO <sub>2</sub> emissions of the vehicle $v$ in g/km, without the change of mass, determined for the same mission profile $mp$ , representative loading conditions;
$CO_{2,v,l}$	are the CO <sub>2</sub> emissions of the vehicle $v$ in g/km, without the change of mass, determined for the same mission profile $mp$ , low loading conditions;
$Mr$	is the total vehicle mass in simulation, without the change of mass, for the same mission profile $mp$ , representative loading conditions;
$Ml$	is the total vehicle mass in simulation, without the change of mass, for the same mission profile $mp$ , low loading conditions.

#### 4. NORMALISATION FOR DIFFERENT CARGO VOLUMES

Category O vehicles within the same sub-group have different cargo volumes. Since the transport utility of a vehicle increases with the cargo volume, but for technical reasons such increase is also correlated with higher CO<sub>2</sub> emissions, the following correction of the CO<sub>2</sub> emissions of a vehicle  $v$  in sub-group  $sg$  shall be applied:

$$\Delta CO_{2cv_{v,mp}} = a_{sg,mp} \cdot (CV_{sg} - CV_v)$$

Where

$a_{sg,mp}$	is a linear coefficient determined according to point 4.1 for the reporting period of the vehicle $v$ ;
$CV_v$	is the cargo volume of vehicle $v$ as determined from the data reported according to Articles 13a and 13b;
$CV_{sg}$	is the cargo volume of vehicle sub-group $sg$ determined according to point 2.5 of Annex I.

For vehicle of categories N and M the correction of CO<sub>2</sub> emissions  $\Delta CO_{2cv_{v,mp}}$  shall be 0.

##### 4.1. Determination of normalisation parameters

For each reporting period and mission profile the parameters  $a_{sg,mp}$  and  $b_{sg,mp}$  shall be determined with a linear regression analysis of the correlation of the values of  $[reportCO_{2v,mp} + \Delta CO_{2v,mp}(m)]$  with the values of  $CV_v$ , considering all newly registered vehicles  $v$  in the sub-group  $sg$ :

$$reportCO_{2v,mp} + \Delta CO_{2v,mp}(m) \approx a_{sg,mp} \cdot CV_v + b_{sg,mp}$$

Where

$CV_v$	is the cargo volume of vehicle $v$ as determined from the data reported according to Articles 13a and 13b;
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*reportCO2<sub>v,mp</sub>* ,  $\Delta CO2_{v,mp}(m)$  are as defined in point 1.'

## ANNEX II

### *ANNEX IV*

#### **Rules on data to be monitored and reported as referred to in Articles 13a and 13b**

##### **PART A: DATA TO BE MONITORED AND REPORTED BY MEMBER STATES**

- (a) vehicle identification numbers of all new heavy-duty vehicles as referred to in Article 2 that are registered in the Member State territory;
- (b) manufacturer name;
- (c) make (trade name of manufacturer);
- (d) the code for the bodywork as specified in entry 38 of the certificate of conformity, including, where applicable, the supplementing digits referred to in Annex I Appendix 2 to Regulation (EU) 2018/858;
- (e) in the case of the heavy-duty vehicles referred to in Article 2, first paragraph, point (a) or (b), the information on the powerplant specified in entries 23, 23.1 and 26 of the certificate of conformity;
- (f) the maximum speed of the vehicle as specified in entry 29 of the certificate of conformity;
- (g) the stage of completion, as indicated in the chosen model of the certificate of conformity in accordance with Annex VIII, point 2 to Commission Implementing Regulation (EU) 2020/683;
- (h) the vehicle category as specified in entry 0.4 of the certificate of conformity;
- (i) the number of axles, as specified in entry 1 of the certificate of conformity;
- (j) the technically permissible maximum laden mass, as specified in entry 16.1 of the certificate of conformity;
- (k) the imprint of the cryptographic hash of the manufacturer's records file as specified in entry 49.1 of the certificate of conformity; for vehicles registered until 30 June 2025 Member States may report only the first 8 characters of the cryptographic hash;
- (l) the specific CO<sub>2</sub> emissions as specified in entry 49.5 of the certificate of conformity;
- (m) the average payload value as specified in entry 49.6 of the certificate of conformity;
- (n) the date of registration;
- (o) for special purpose vehicles their designation as specified in entry 51 of the certificate of conformity;
- (p) for vehicles approved under Article 2(3)(b) of Regulation 2018/858, the information that the vehicle was designed and constructed or adapted for use by civil protection fire services and forces responsible for maintaining public order;
- (q) for vehicles registered for use by civil protection, fire services or forces responsible for maintaining public order or for use by the armed services, the confirmation that the vehicle is registered for use by civil protection, fire services or forces responsible for maintaining public order or for use by the armed services and that it fulfils the conditions set out in Article 2 paragraph 5 of this Regulation. For all vehicles including individually approved vehicles, the corresponding information shall be the information as to be provided in the EU certificate of conformity or EU individual vehicle approval certificate or the national individual approval certificate in accordance with the templates laid down in

Commission Implementing Regulation (EU) 2020/683<sup>1</sup> regardless of any national exemptions applicable under Article 45(1) of Regulation (EU) 2018/858.

## PART B: DATA TO BE REPORTED BY MANUFACTURERS AND OTHER ENTITIES

In accordance with Article 13b, each reporter shall report the following data for those vehicles, for which it is obliged to produce a Manufacturer's Records File (MRF) or Vehicle Information File (VIF) according to the provisions of Regulations 2017/2400 (EU) and Commission Implementing Regulation (EU) 2022/1362<sup>2</sup>.

For vehicles referred to in Part A, points (p) and (q) of Annex IV the manufacturer referred to in Article 7a shall also inform the Commission in accordance with Article 2(4) and (5), if the vehicle which would otherwise be exempted from the obligations laid down in Article 3a, shall not be exempted from those obligations.

Vehicle categories / sub-groups <sup>3</sup>	Reporters			
	Primary vehicle manufacturer <sup>(1)</sup>	Interim vehicle manufacturer <sup>(2)</sup>	Vehicle manufacturer	Designated technical service <sup>(8)</sup>
<b>N / all</b>	Not applicable	Not applicable	– MRF <sup>(4)</sup> – Additional information*	Not applicable
<b>M / all</b>	– VIF <sup>(4) (5)</sup> – MRF <sup>(4) (6)</sup> – Additional information* of the primary vehicle.	Not applicable	– VIF <sup>(4) (7)</sup> – MRF <sup>(4) (7)</sup> – Additional information* of the complete or completed vehicle.	Not applicable
<b>O / all</b>	Not applicable	Not applicable	– MRF <sup>(9)</sup> – Additional information*	– MRF <sup>(9)</sup> – Additional information*

<sup>(1)</sup> Article 3(29) of Commission Regulation (EU) 2017/2400.

<sup>(2)</sup> Article 3(31) of Commission Regulation (EU) 2017/2400

<sup>1</sup> Commission Implementing Regulation (EU) 2020/683 of 15 April 2020 implementing Regulation (EU) 2018/858 of the European Parliament and of the Council with regards to the administrative requirements for the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, OJ L 163 of 26.5.2020, p.1.

<sup>2</sup> Commission Implementing Regulation (EU) 2022/1362 of 1 August 2022 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the performance of heavy-duty trailers with regard to their influence on the CO<sub>2</sub> emissions, fuel consumption, energy consumption and zero emission driving range of motor vehicles and amending Implementing Regulation (EU) 2020/683 (OJ L 205, 5.8.2022, p. 145.



- (3) Article 3(4a) of Commission Regulation (EU) 2017/2400  
(4) Article 9(2) of Commission Regulation (EU) 2017/2400  
(5) Point 2.3 of Annex I to Commission Regulation (EU) 2017/2400  
(6) Point 2.4 of Annex I to Commission Regulation (EU) 2017/2400  
(7) Point 2.7.5 of Annex I to Commission Regulation (EU) 2017/2400  
(8) Article 8(6) of Commission Implementing Regulation (EU) 2022/1362  
(9) Article 8(7) of Commission Implementing Regulation (EU) 2022/1362

**\*Additional Information:**

No	Monitoring parameter	Source	Applicable to vehicles
15	Make (trade name of manufacturer)		All
24	Name and address of transmission manufacturer	Point 0.4 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VI to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only;
25	Make (trade name of transmission manufacturer)	Point 0.1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VI to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only;
32	Name and address of axle manufacturer	Point 0.4 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VII to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only; Category O;
33	Make (trade name of axle manufacturer)	Point 0.1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VII to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only; Category O;
39	Name and address of tyre manufacturer	Point 1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex X to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only; Category O;
40	Make (trade name of tyre manufacturer)	Point 3 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex X to Regulation (EU) 2017/2400	Category N; Category M: primary vehicle only; Category O;
72	Number of license to operate the simulation tool		All
75	CO <sub>2</sub> mass emission of the engine over WHTC (8) (g/kWh)	Point 1.4.2 of the addendum to Appendix 5, or point 1.4.2 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	Category N; Category M: primary vehicle only;
76	Fuel consumption of the engine over WHTC (g/kWh)	Point 1.4.2 of the addendum to Appendix 5, or point 1.4.2 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	Category N; Category M: primary vehicle only;

77	CO2 mass emission of the engine over WHSC (9) (g/kWh)	Point 1.4.1 of the addendum to Appendix 5, or point 1.4.1 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	Category N; Category M: primary vehicle only;
78	Fuel consumption of the engine over WHSC (g/kWh)	Point 1.4.1 of the addendum to Appendix 5, or point 1.4.1 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable	Category N; Category M: primary vehicle only;
101	For vehicles with a date of simulation as of 1 July 2020, the type-approval number of the engine	Point 1.2.1. of addendum to Appendix 5, 6 or 7 to Annex I to Regulation (EU) No 582/ 2011, whichever is applicable	Category N; Category M: primary vehicle only;
102	For vehicles with a date of simulation as of 1 July 2021, the comma separated values file of the same name as the job file and with an extension.vsum comprising aggregated results per simulated mission profile and payload condition	File generated by the simulation tool referred to in Article 5(1)(a) of Regulation (EU) 2017/2400 in its graphical user interface (GUI) version	'sum exec data file'

**PART C: AIR DRAG VALUE (CDXA) RANGES FOR THE PURPOSE OF PUBLICATION IN ACCORDANCE WITH ARTICLE 13c**

For the purpose of making publicly available the CdxA value specified in data entry 23 in accordance with Article 13c, the Commission shall use the ranges defined in the following table containing the corresponding range for each CdxA value:

Range	CdxA value [m2]	
	Min CdxA (CdxA ≥ min CdxA)	Max CdxA (CdxA < MaxCdxA)
A1	0,00	3,00
A2	3,00	3,15
A3	3,15	3,31
A4	3,31	3,48
A5	3,48	3,65
A6	3,65	3,83
A7	3,83	4,02
A8	4,02	4,22
A9	4,22	4,43
A10	4,43	4,65
A11	4,65	4,88
A12	4,88	5,12
A13	5,12	5,38
A14	5,38	5,65

A15	5,65	5,93
A16	5,93	6,23
A17	6,23	6,54
A18	6,54	6,87
A19	6,87	7,21
A20	7,21	7,57
A21	7,57	7,95
A22	7,95	8,35
A23	8,35	8,77
A24	8,77	9,21

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## ANNEX V

### Data reporting and management referred to in Articles 13a to 13c

#### 1. REPORTING BY MEMBER STATES

- 1.1. The data specified in Part A of Annex IV shall be transmitted in accordance with Article 13a by the contact point of the competent authority via electronic data transfer to the Agency.

The contact point shall notify the Commission and the Agency when the data are transmitted by email to the following addresses:

EC-CO2-HDV-IMPLEMENTATION@ec.europa.eu

and

HDV-monitoring@eea.europa.eu

#### 2. REPORTING BY MANUFACTURERS

- 2.1. Manufacturers shall notify the Commission without delay the following information:

- (a) the manufacturer name indicated in the certificate of conformity or individual approval certificate;
- (b) the World Manufacturer Identifier code (WMI code) as defined in Commission Regulation (EU) No 19/2011<sup>4</sup> to be used in the vehicle identification numbers of new heavy-duty vehicles to be placed on the market;
- (c) the contact point responsible for uploading the data to the Agency.

They shall notify the Commission without delay of any changes to that information.

The notifications shall be sent to the addresses referred to in point 1.1.

- 2.2. The data specified in Part B, point 2 of Annex I shall be transmitted in accordance with Article 13b by the contact point of the manufacturer via electronic data transfer to the Agency.

The contact point shall notify the Commission and the Agency when the data are transmitted by email to the addresses referred to in point 1.1.

#### 3. DATA PROCESSING

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<sup>4</sup> Commission Regulation (EU) No 19/2011 of 11 January 2011 concerning type-approval requirements for the manufacturer's statutory plate and for the vehicle identification number of motor vehicles and their trailers and implementing Regulation (EC) No 661/2009 of the European Parliament and of the Council concerning type-approval requirements for the general safety of motor vehicles, their trailers and systems, components and separate technical units intended therefor (OJ L 8, 12.1.2011, p. 1).

- 3.1. The Agency shall process the data transmitted in accordance with points 1.1 and 2.2 and shall record the processed data in the register.
- 3.2. The data relating to heavy-duty vehicles registered in the preceding reporting period and recorded in the register shall be made public by 30 April each year, with the exception of the following data entries:
  - 3.2.1. vehicle identification number;
  - 3.2.2. name and address of the transmission manufacturer;
  - 3.2.3. make (trade name of transmission manufacturer);
  - 3.2.4. name and address of axle manufacturer;
  - 3.2.5. make (trade name of axle manufacturer);
  - 3.2.6. name and address of tyre manufacturer;
  - 3.2.7. make (trade name of tyre manufacturer);
  - 3.2.8. engine model;
  - 3.2.9. transmission model;
  - 3.2.10. retarder model;
  - 3.2.11. torque converter model;
  - 3.2.12. angle drive model;
  - 3.2.13. axel model;
  - 3.2.14. air drag model;
  - 3.2.15. comma separated values file of the same name as the job file and with an extension.vsum comprising aggregated results per simulated mission profile and payload condition.
- 3.3. Where a competent authority or manufacturers identify errors in the data submitted, they shall without delay notify those to the Commission and the Agency by submitting an error notification report to the Agency and by email sent to the addresses referred to in point 1.1.
- 3.4. The Commission shall with the support of the Agency verify the notified errors and, where appropriate, correct the data in the register.
- 3.5. The Commission, with the support of the Agency, shall make available electronic formats for the data transmissions referred to in points 1.1 and 2.2 in due time before the transmission deadlines.

## ANNEX VI

### CORRELATION TABLE

Regulation (EU) 2018/956

Regulation (EU) 2018/956	This Regulation
Article 1	Article 1(2)
Article 2	Article 2
Article 3	Article 3
Article 4	Article 13a
Article 5	Article 13b
Article 6	Article 13c
Article 7	Article 13d
Article 8	Article 13e
Article 9	Article 13f
Article 10	-
Article 11	Article 14
Article 12	Article 16
Article 13	Article 17
Article 14	-
Annex I	Annex IV
Annex II	Annex V'