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INFORMATION NOTE

From:	General Secretariat of the Council
To:	Permanent Representatives Committee/Council
Subject:	Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Regulation (EU) 2019/1242 as regards strengthening the CO_2 emission performance standards for new heavy-duty vehicles and integrating reporting obligations, and repealing Regulation (EU) 2018/956 - Outcome of the European Parliament's first reading (Brussels, 10-11 April 2024)

I. INTRODUCTION

In accordance with the provisions of Article 294 of the TFEU and the Joint declaration on practical arrangements for the codecision procedure[1], a number of informal contacts have taken place between the Council, the European Parliament and the Commission with a view to reaching an agreement on this file at first reading.

[1] OJ C 145, 30.6.2007, p. 5.

In this context, the chair of the Committee on the Environment, Public Health and Food Safety (ENVI) Pascal CANFIN (RE, FR) presented on behalf of ENVI a compromise amendment (amendment number 147) to the abovementioned proposal for a Regulation for which Bas EICKHOUT (Greens/EFA, NL) had prepared a draft report. This amendment had been agreed during the informal contacts referred to above. In addition, the ECR group tabled six amendments (amendments number 141, 142, 143, 144, 145 and 146), the EPP group tabled two amendments (amendments number 148 and 149) and a number of ECR, EPP and RE members tabled six amendments (amendments number 150, 151, 152, 153, 154 and 155).

II. VOTE

When it voted on 10 April 2024, the plenary adopted the compromise amendment (amendment number 147) to the abovementioned proposal for a Regulation. No other amendments were adopted. The Commission's proposal as thus amended constitutes the Parliament's first-reading position which is contained in its legislative resolution as set out in the Annex hereto[2].

The Parliament's position reflects what had been previously agreed between the institutions. The Council should therefore be in a position to approve the Parliament's position.

The act would then be adopted in the wording which corresponds to the Parliament's position.

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[2] The version of the Parliament's position in the legislative resolution has been marked up to indicate the changes made by the amendments to the Commission's proposal. Additions to the Commission's text are highlighted in ***bold and italics.*** The symbol "▌" indicates deleted text.

P9_TA(2024)0192

Strengthening the CO_2 emission performance targets for new heavy-duty vehicles

European Parliament legislative resolution of 10 April 2024 on the proposal for a regulation of the European Parliament and of the Council amending Regulation (EU) 2019/1242 as regards strengthening the CO_2 emission performance standards for new heavy-duty vehicles and integrating reporting obligations, and repealing Regulation (EU) 2018/956 (COM(2023)0088) – C9-0025/2023 – 2023/0042(COD))

(Ordinary legislative procedure: first reading)

The European Parliament,

– having regard to the Commission proposal to Parliament and the Council (COM(2023)0088),

– having regard to Article 294(2) and Article 192(1) of the Treaty on the Functioning of the European Union, pursuant to which the Commission submitted the proposal to Parliament (C9-0025/2023),

– having regard to the reasoned opinion submitted, within the framework of Protocol No 2 on the application of the principles of subsidiarity and proportionality, by the Italian Chamber of Deputies and the Italian Senate, asserting that the draft legislative act does not comply with the principle of subsidiarity,

– having regard to the opinion of the European Economic and Social Committee of 12 July 2023[1],

– after consulting the Committee of the Regions,

[1] OJ C 349, 29.9.2023, p. 134.

– having regard to the provisional agreement approved by the committee responsible under Rule 74(4) of its Rules of Procedure and the undertaking given by the Council representative by letter of 9 February 2024 to approve Parliament's position, in accordance with Article 294(4) of the Treaty on the Functioning of the European Union,

– having regard to Rule 59 of its Rules of Procedure,

– having regard to the opinions of the Committee on Transport and Tourism and the Committee on Industry, Research and Energy,

– having regard to the report of the Committee on the Environment, Public Health and Food Safety (A9-0313/2023),

1. Adopts its position at first reading hereinafter set out[2];

2. Calls on the Commission to refer the matter to Parliament again if it replaces, substantially amends or intends to substantially amend its proposal;

3. Instructs its President to forward its position to the Council, the Commission and the national parliaments.

[2] This position replaces the amendments adopted on 21 November 2023 (Texts adopted, P9_TA(2023)0403).

P9_TC1-COD(2023)0042

Position of the European Parliament adopted at first reading on 10 April 2024 with a view to the adoption of Regulation (EU) 2024/… of the European Parliament and of the Council amending Regulation (EU) 2019/1242 as regards strengthening the CO_2 emission performance standards for new heavy-duty vehicles and integrating reporting obligations, amending Regulation (EU) 2018/858 and repealing Regulation (EU) 2018/956

(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[5],

After consulting the Committee of the Regions,

Acting in accordance with the ordinary legislative procedure[6],

[5] OJ C 349, 29.9.2023, p. 134.
[6] Position of the European Parliament of 10 April 2024.

Whereas:

(1) Tackling climate and environment-related challenges and reaching the objectives of the Paris Agreement[7], adopted on 12 December 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), are at the core of the ***Commission's*** communication of 11 December 2019 on the 'European Green Deal' ▌. 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 ***and of Russia's war of aggression against Ukraine***.

(2) The European Green Deal combines a comprehensive set of mutually reinforcing measures and initiatives which aim to achieve 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, ***that*** transition affects women and men differently and has a particular impact on some disadvantaged ***and vulnerable*** groups, such as ***low-income households and persons,*** older people, persons with disabilities and persons with a minority racial or ethnic background. It must therefore be ensured that the transition is just and inclusive, leaving no one behind.

[7] OJ L 282, 19.10.2016, p. 4.

(3) ***Following the adoption by the European Parliament and the Council of essential elements of the 'Fit for 55' legislative package, as proposed by the Commission in July 2021, the Union submitted in October 2023 an*** updated nationally determined contribution ***(NDC) of the Union and its Member States*** to the UNFCCC***, confirming that the Union will cut its net greenhouse gas emissions by at least 55 % by 2030 compared to 1990 levels***.

(4) Through the adoption of Regulation (EU) 2021/1119 of the European Parliament and of the Council[8], the Union has enshrined ***in a Union legislative act*** the objective of economy-wide climate neutrality ***within the Union at the latest*** by 2050 ***and the aim of achieving negative emissions thereafter. Moreover,*** that Regulation ▌establishes a binding Union ***domestic reduction target*** for net greenhouse gas emissions (emissions after deduction of removals) of at least 55 % compared to 1990 levels by 2030. ***It also sets the framework for the establishment of intermediate Union climate targets and for the publication of the projected indicative Union greenhouse gas budget for the 2030-2050 period.***

(5) All sectors of the economy are expected to contribute to achieving those emission reductions, including the road transport sector. ***In its communication of 9 December 2020 on 'Sustainable and Smart Mobility Strategy – putting European transport on track for the future', the Commission sets out a roadmap for a sustainable and smart future for European transport, with an action plan towards the objective of delivering a 90 % reduction in emissions from the transport sector by 2050. Heavy-duty vehicles are currently responsible for more than a quarter of greenhouse gas emissions from road transport in the Union and for over 6 % of the Union's total greenhouse gas emissions.***

(6) The 'Fit for 55' legislative package 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[9] is an integral part of that ***legislative*** package.

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8 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).

9 Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO_2 emission performance standards for new heavy-duty vehicles and amending

(7) ***In its*** communication ***of 18 May 2022 on the 'REPowerEU Plan', the Commission*** outlined a plan to make the Union independent from Russian fossil fuels well before the end of this decade. That communication highlights the importance, inter alia, of further increasing the efficiency ***of,*** and reducing, fossil ***fuel*** 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 % compared to ***1990 levels by 2030*** and in conformity with the energy efficiency first principle, it is necessary to strengthen the ***CO_2 emissions*** reduction requirements ***for heavy-duty vehicles*** set out in Regulation (EU) 2019/1242 ▌. A clear pathway also needs to be set for further ***emission*** reductions beyond 2030 ***for the heavy-duty vehicles sector*** to contribute to achieving the climate-neutrality objective by 2050.

(9) The strengthened CO_2 ***emissions*** reduction requirements should incentivise an increasing share of zero-emission ***heavy-duty*** 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 ***and the associated high-quality jobs*** can be maintained. Zero-emission ***heavy-duty*** vehicles currently include battery electric vehicles, fuel-cell and other hydrogen-powered vehicles, and technological ***innovation continues***.

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).

(10) ▌New strengthened CO_2 ***emissions*** reduction targets should be set for new heavy-duty vehicles from 2030 onwards. Those targets should be set at a level that will deliver a strong signal to accelerate the uptake of zero-emission ***heavy-duty*** vehicles on the Union market***,*** stimulate innovation in zero-emission technologies in a cost-efficient way***, give the necessary signal to accelerate the deployment of charging and refuelling infrastructure across the Union, ensure the long-term competitiveness of the Union industry on a global market, and contribute to reducing the running costs for transport companies, while ensuring that the Union meets its climate objectives and its objective to alleviate air pollution***.

(11) Air pollution is a particularly acute problem in cities, affecting the health of millions of European citizens. Transport is one of the main sources of urban air pollution. The accelerated roll-out of zero-emission heavy-duty vehicles, through strengthened CO_2 emissions reduction requirements, will contribute to alleviating the urban air pollution problem.

(12) The ***Commission's communication of 5 May 2021 on 'Updating the 2020*** New Industrial Strategy***: Building a stronger Single Market for Europe's recovery' aims to achieve*** the co-creation of green and digital transition pathways in partnership with industry, public authorities, social partners and other stakeholders. In that context, a transition pathway is being developed for the mobility ecosystem to accompany the transition of the automotive value chain. The ***transition*** pathway ***pays*** particular ***attention to*** small and medium-sized ***enterprises*** in the automotive supply chain, ***and to*** the consultation, including by Member States, of social partners***. It also builds*** on the European Skills Agenda with initiatives ***such as*** 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 builds*** on the Talent Booster Mechanism in the framework of the Harnessing Talents in EU regions initiative. The appropriate actions and incentives at ▌European and national level to boost the affordability of zero-emission vehicles are also being addressed in the ***transition*** pathway. That could, for example, include the possibility for Member States to use the ***Social Climate Fund established by Regulation (EU) 2023/955 of the European Parliament and of the Council***[10] ***(the '***Social Climate Fund***')*** to assist micro-enterprises in ▌purchasing ▌zero-emission heavy-duty vehicles. ***Particular attention should be given to the impact that that transition will have on micro, small and medium-sized enterprises (SMEs) along the supply chain.*** The ***Commission's communication of 1 February 2023 on 'A*** Green Deal Industrial Plan ***for the Net-Zero Age' aims to*** enhance the competitiveness of Europe's net-zero industry and ***to*** support the fast transition to climate neutrality. ***That*** plan aims to provide a more supportive environment for the scaling up of the ***Union'***s manufacturing capacity for the net-zero technologies and products required to meet ***the Union'***s ambitious climate targets.

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[10] ***Regulation (EU) 2023/955 of the European Parliament and of the Council of 10 May 2023 establishing a Social Climate Fund and amending Regulation (EU) 2021/1060 (OJ L 130, 16.5.2023, p. 1).***

Access to training and reskilling in numerous sectors that need to undergo fundamental changes, including the heavy-duty vehicles and the refuelling and recharging sectors, is crucial for a socially just and effective transition. Investments in the skills needed for an effective transition are a collective responsibility. Employees and jobseekers should have access to reskilling and upskilling opportunities, and their participation in those learning activities should be supported. Member States are encouraged to ramp up investments in reskilling and upskilling and to map out and analyse the predicted changes in the job market.

(13) ***Together with initiatives to accelerate a modal shift towards more sustainable transport modes, the strengthening of the CO_2 emissions reduction requirements for heavy-duty vehicles and rolling-out the necessary recharging and refuelling infrastructure will play a key role in reducing the CO_2 emissions of the heavy-duty vehicles sector.*** The Union fleet-wide ***CO_2 emissions reduction*** targets ***laid down in this Regulation are complemented by the*** recharging and refuelling infrastructure ***requirements*** set out in ***Regulation (EU) 2023/1804 of the European Parliament and of the Council*** ▌[11]***. Union funding plays an important role in the*** infrastructure ***rollout at national level. The deployment of recharging infrastructure for heavy-duty electric vehicles is equally important in private locations that are not accessible to the public, such as in private depots and at logistics centres which provide overnight and destination charging. Member States should consider taking measures in the context of setting up their revised national policy frameworks to ensure that appropriate infrastructure is provided for overnight and destination charging for heavy-duty electric vehicles.***

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[11] ***Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU (OJ L 234, 22.9.2023, p. 1).***

It is also appropriate to consider, in view of possible infrastructural constraints in third countries, the impact of this Regulation on the possibility for new heavy-duty vehicles registered in a Member State to operate outside the Union.

(14) In 2015, following the adoption of Directive 2014/94/EU of the European Parliament and of the Council[12], the Sustainable Transport Forum (the 'Forum') was set up by the Commission. The Forum assists the Commission in implementing the Union's activities and programmes aimed at fostering the deployment of sustainable alternative fuels infrastructure. Following the adoption of this Regulation, the Commission will ensure that the Forum supports the effective and cost-efficient roll-out of the recharging and refuelling infrastructure needed to meet the strengthened CO_2 emissions reduction requirements for heavy-duty vehicles, and that it informs the review referred to in Article 24(2) of Regulation (EU) 2023/1804, so that the targets set out in that Regulation are aligned with the ambition of this Regulation.

(15) The transition to climate neutrality requires significant ***investment*** in the electricity ***grid,*** including enhanced capacity, resilience and storage, as well as additional connections. ***In view of the CO_2 emissions reduction targets for heavy-duty vehicles*** for the year 2030 ***established under this Regulation,*** the share of ***zero-emission heavy-duty*** vehicles in the total fleet of ***heavy-duty*** vehicles on the roads ***and*** electricity consumption in the sector will remain limited. Therefore, the related impact on the electricity grid will remain limited as well.

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[12] ***Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure (OJ L 307, 28.10.2014, p. 1).***

(16) While the strengthened CO_2 emissions reduction targets will accelerate the uptake of zero-emission heavy-duty vehicles, a significant part of the total fleet of heavy-duty vehicles on the roads will remain internal combustion engine vehicles. For that part of the fleet to contribute to the achievement of the Union's climate targets, further innovation and an accelerated uptake of sustainable renewable fuels is essential. Existing Union policies and legal instruments, in particular Directive (EU) 2018/2001 of the European Parliament and of the Council[13] and the EU emissions trading system established by Directive 2003/87/EC of the European Parliament and of the Council[14], will promote the decarbonisation of transport fuels, with the aim of phasing out fossil fuels. The Commission should further develop a coherent framework of incentives for advanced biofuels and biogas and renewable fuels of non-biological origin. That framework should address barriers to the uptake and supply in a comprehensive way, taking into account demand across economic sectors, in the context of the overall efforts to reach the Union's climate targets. Building on the objectives for biomethane in the RePowerEU plan, the Commission should also address how the scale-up of the production of biomethane in the Union can contribute to the decarbonisation of the economy, including the transport sector.

(17) Following consultation with stakeholders, the Commission will, within one year of the date of entry into force of this Regulation, assess the role of a methodology for registering heavy-duty vehicles running exclusively on CO_2 neutral fuels, in conformity with Union law and with the Union's climate-neutrality objective.

(18) Manufacturers should continue to be provided with sufficient flexibility when adapting their ***heavy-duty vehicle*** fleets over time in order to manage the transition towards zero-emission ***heavy-duty*** vehicles in a cost-efficient manner. It is therefore appropriate to maintain the approach of ***strengthening*** target levels in five-year steps.

(19) Due to the heterogeneous structure of the ***total*** fleet of heavy-duty vehicles, it is not possible to fully predict whether ▌technological developments will be quick enough to

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13 Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources (OJ L 328, 21.12.2018, p. 82).

14 Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32).

ensure that zero-emission tailpipe technology is a viable choice ***for all niche uses. This could include*** heavy-duty vehicles ▌for critical security and safety applications that cannot be fulfilled by zero-emission tailpipe technologies. ***Such*** vehicles should constitute a limited share of the total fleet of heavy-duty vehicles. ***In its review of Regulation (EU) 2019/1242, the Commission should assess the possibility of applying measures to reduce CO_2 emissions from such vehicles***.

I

(20) ***For their public procurement procedures covered by this Regulation, contracting authorities and contracting entities are strongly encouraged to use an award criterion or a technical specification that relates to the proportion of the products of tenders originating from countries that are not parties to the World Trade Organization Agreement on Government Procurement (the 'GPA') and that have not concluded a free trade agreement containing rules on public procurement with the Union. Such criteria will play an important role in fostering the supply of zero-emission urban buses by the European industry, ensure sustainable and resilient supply chains for urban buses and reinforce security of supply within the Union.***

(21) ***Contracting authorities and contracting entities are encouraged to use an environmental sustainability criterion as an award criterion or as a technical specification for their public procurement procedures covered by this Regulation. Without prejudice to Union legislative acts applicable to a specific technology, including Regulation (EU) 2023/1542 of the European Parliament and of the Council[15] and Regulation (EU) 2024/… of the European Parliament and of the Council[16+], when evaluating the environmental sustainability of urban buses procured on the basis of this Regulation, it should be possible for contracting authorities and contracting entities to take into account various elements with an impact on the climate and the environment. Those elements can include, for instance: the durability and reliability of the solution, the ease of repair and maintenance, the ease and quality of recycling, the use of substances, the consumption of energy, water and other resources in one or more life cycle stages of the product, the incorporation of used components, the environmental footprint of the product and its life cycle environmental impact, and the amount of waste generated.***

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[15] ***Regulation (EU) 2023/1542 of the European Parliament and of the Council of 12 July 2023 concerning batteries and waste batteries, amending Directive 2008/98/EC and Regulation (EU) 2019/1020 and repealing Directive 2006/66/EC (OJ L 191, 28.7.2023, p. 1).***

[16] OJ L..., …, ELI: … .

[+] OJ: Please insert number and date.

(22) With the stricter Union fleet-wide ***CO_2 emissions reduction*** targets from 2030 onwards, manufacturers ***are*** to deploy significantly more zero-emission ***heavy-duty*** vehicles on the Union market. In that context, the incentive mechanism for zero- and low-emission ***heavy-duty*** vehicles would no longer serve its original purpose and would risk undermining the effectiveness of Regulation (EU) 2019/1242. That incentive mechanism should therefore be removed ***from*** 2030.

(23) The possibility ***to assign the revenues*** from the excess ***CO_2 emissions*** premiums to a specific fund or ***a*** relevant programme has been evaluated as required pursuant to Article 15(4) of Regulation (EU) 2019/1242, with the conclusion that doing so would significantly increase the administrative burden, ***without*** resulting in any direct ***benefit to*** the automotive sector in its transition. ***Revenues*** from the excess ***CO_2 emissions*** premiums should therefore continue to be considered as revenue for the general budget of the ***European*** Union in accordance with Article 8(4) of Regulation (EU) 2019/1242.

(24) The subject matter ***of Regulation (EU) 2019/1242*** should be enlarged to also cover the monitoring and reporting obligations which are integrated into Regulation (EU) 2019/1242 by means of this Regulation.

(25) 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[17].

(26) The CO_2 emissions for vehicles ***that*** are not within the scope of the vehicle type-approval legislation ***of the Union***, such as agricultural and forestry tractors, vehicles designed and constructed for use by ***national defence, including*** armed services***,*** and track-laying vehicles, are not determined. Therefore, ***those*** vehicles ***are not required*** to meet the CO_2 ***emissions reduction*** targets set in this Regulation.

(27) ***In order not to discourage the voluntary type-approval of*** ▌ ***heavy-duty*** vehicles ***that are*** designed and constructed or adapted for use by civil protection ***services***, fire services and forces responsible for maintaining public order ▌ or urgent medical care ***services, which would have negative safety and environmental implications, such vehicles*** that are voluntarily type-approved should also be exempted from ***the obligation*** to meet the CO_2

[17] Regulation (EU) 2018/956 of the European Parliament and of the Council of 28 June 2018 on the monitoring and reporting of CO_2 emissions from and fuel consumption of new heavy-duty vehicles (OJ L 173, 9.7.2018, p. 1).

emissions reduction targets ***set in*** this Regulation, unless the manufacturer requests otherwise. Member States should also be entitled to ***exempt heavy-duty vehicles from the obligation*** to meet the ***CO_2 emissions reduction*** targets ***set in this Regulation where those heavy-duty*** vehicles are not specifically designed, but are registered, for use by civil protection ***services***, fire services, forces responsible for maintaining the public order ▌ or urgent medical care ***services***, such as normal coaches used for the transport of police or armed services, by confirming that such exemption ***would be in the public interest. Member States should also be entitled to exempt vehicles registered for the armed services from this Regulation in its entirety***.

(28) As for certain ***heavy-duty*** vehicle sub-groups ▌ which are type-approved, ***but for which*** CO_2 ***emissions reductions*** are not determined yet for technical reasons, ***those heavy-duty*** vehicles ***are not required*** to meet the CO_2 ***emissions reduction*** targets set ***in*** this Regulation. ***Examples of such vehicles are*** special purpose vehicles, such as mobile cranes, carriers of hydraulic multi-equipment or exceptional load transport vehicles, off-road vehicles, such as certain ***heavy-duty*** vehicles used for mining, forestry and agricultural purposes, as well as other ***heavy-duty*** vehicles with non-standard axle configurations such as ***heavy-duty*** vehicles with more than four axles or more than two driven axles, small buses with a ***technically permissible*** maximum ***laden*** mass ***(TPMLM)*** of less than or equal to7,5 ***tonnes***, and small lorries with a ***TPMLM*** of less than or equal to ***5 tonnes***. ***The Commission should investigate the appropriateness of the determination of CO_2 emissions of small lorries with a TPMLM of less than or equal to 5 tonnes in accordance with Commission Regulation (EU) 2017/2400***[18] ***(vehicle energy consumption calculation tool simulations or VECTO simulations), taking into account Commission Regulation (EU) 2017/1151***[19]***.***

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[18] 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_2 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).

[19] ***Commission Regulation (EU) 2017/1151 of 1 June 2017 supplementing Regulation (EC) No 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information, amending Directive 2007/46/EC of the European Parliament and of the Council, Commission Regulation (EC) No 692/2008 and Commission Regulation (EU) No 1230/2012 and repealing Commission Regulation (EC) No 692/2008 (OJ L 175, 7.7.2017, p. 1).***

(29) Certain definitions should be introduced in order to ***harmonise*** the terminology ***of Regulation (EU) 2019/1242*** 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[20] and Regulation (EU) 2017/2400.

(30) For the purposes of the transfer of ***heavy-duty*** vehicles between manufacturers, introduced by this Regulation, and of establishing an exemption for manufacturers producing few ***heavy-duty*** vehicles, a definition of the term 'group of connected manufacturers' should be added to Regulation (EU) 2019/1242. That definition should, in substance, follow the terminology used in Regulation (EU) 2019/631 of the European Parliament and of the Council[21] for light-duty vehicles.

(31) As regards laying down the obligations of individual manufacturers, Union fleet-wide CO_2 ***emissions*** reduction targets for new heavy-duty vehicle fleets should be translated into specific CO_2 ***emissions*** targets for ***vehicle*** sub-groups determined on the basis of the technical characteristics of the ***heavy-duty*** vehicles they comprise.

(32) Since the CO_2 emissions related to trailers have a strong impact on the overall ***CO_2*** emissions and energy consumption of ***heavy-duty*** motor vehicles, ***CO_2 emissions reduction targets*** should also be ***set for trailers***.

(33) ***CO_2 emissions from vocational vehicles, such as refuse collection vehicles, tippers or concrete mixers, are already certified under VECTO and are monitored and reported by vehicle manufacturers and Member States. CO_2 emissions from vocational vehicles represent approximately 2 % of heavy-duty vehicles CO_2 emissions and approximately 4 % of sales. As they operate mostly in cities, vocational vehicles also have an impact on urban air quality. Vocational vehicles should therefore be exempted until 2029 from the calculation of average specific CO_2 emissions of manufacturers. For the period 2030 to***

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20 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 (OJ L 151, 14.6.2018, p. 1).

21 Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO_2 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).

2034, only zero-emission vocational vehicles should be accounted for that calculation.From 2035, all vocational vehicles should be accounted for that calculation.

(34) ***In order to facilitate the development, and enable the widespread use, of trailers equipped with CO_2 emissions reduction technology, it is imperative to promptly update and expand the approval framework for such technology, in particular for electrified trailers, by amending Regulation (EU) 2018/858.***

(35) ***In 2022, zero-emission urban buses already represented around a quarter of all urban buses sold in the Union, with some Member States reaching much higher shares.*** Due to the technical readiness of urban buses and the need to improve urban air quality, a mandatory minimum share of new zero-emission urban buses should be set.

(36) 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 purchase 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 ***the*** operation ***of such urban buses***. Joint procurement of urban buses, building on the Clean Bus Europe Platform, can bring ***down*** the purchase cost of such buses further ▌, and the ▌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 ***CO_2 emissions reduction*** targets for ***heavy-duty*** vehicles. Support from the Social Climate Fund could address ***the*** specific needs of rural areas and prevent transport poverty***, as defined in Article 2, point (2), of Regulation (EU) 2023/955,*** by securing access to affordable public transport. ***The Commission should also consider further appropriate measures to increase the demand for zero-emission heavy-duty vehicles by public authorities, to support the achievement of the Union's climate-neutrality objective.***

▌

(37) As commercial, rather than legal entities, should be considered for compliance, economically connected manufacturers should, within certain limits, be allowed to transfer ***heavy-duty*** vehicles between them for the purposes of accounting ***those heavy-duty*** vehicles under Regulation (EU) 2019/1242.

(38) Furthermore, in order to strengthen the development of new zero-emission technologies in ***specialised*** small and medium-sized companies, it should also be possible to transfer zero-emission ***heavy-duty*** vehicles between non-connected entities.

(39) Retrofitting zero-emission vehicles consists in converting an internal combustion engine or vehicle into a zero-emission one. It has environmental benefits, which result from avoiding the production of new parts and associated material use. It also has economic benefits, associated with enhanced vehicle affordability and job-creation potential. The market uptake of heavy-duty vehicles which are retrofitted to become zero-emission heavy-duty vehicles is however hampered by the lack of harmonised technical and

administrative rules for their approval. The Commission should therefore consider the need for possible initiatives to promote the development of such harmonised rules.

(40) Measures to increase the share of zero-emission heavy-duty vehicles owned or leased by large fleet operators would help increase the sales of zero-emission heavy-duty vehicles and accelerate the transition towards zero-emission road transport. The Commission should therefore analyse the potential need and impact of initiatives to increase the share of zero-emission heavy-duty vehicles owned or leased by large fleet operators.

(41) In order to avoid disproportionally high ▌compliance ***costs*** and in order to reduce the administrative burden, manufacturers ***that produce few heavy-duty*** vehicles should, subject to fulfilling certain legal requirements, be ***exempt from the obligation to comply*** with CO_2 ***emissions reduction*** targets. As they are still required to comply with the reporting obligations of Regulation (EU) 2019/1242, there is an appropriate control mechanism for those manufacturers.

(42) The existing system of multi-annual emission credits and emission debts should be extended to 2039, as ***CO_2 emissions*** reduction targets ***continue to be strengthened*** beyond 2030 until 2040 and require forward-looking technical developments by manufacturers during that period. ***Nevertheless, manufacturers should clear all remaining emission debts in the years 2029, 2034 and 2039. Emission credits should automatically expire where they have not been used within 7 years of their acquisition.***

(43) Regulation (EU) 2019/1242 should ***clearly stipulate,*** for each vehicle category, the identity of the manufacturer to which a ***heavy-duty*** vehicle should be attributed, thereby specifically taking account of the different constellations for ***heavy-duty*** vehicles of category M.

(44) The rules on the verification of reported monitoring data should also cover ***the potential*** ex post ***correction*** of errors in such data and how the Commission should handle such corrections for implementing the ***Union fleet-wide*** CO_2 ***emissions reduction*** targets.

(45) The assessment of the reference CO_2 emissions should be amended to also cover the vehicle sub-groups newly included in the scope of Regulation (EU) 2019/1242.

(46) Monitoring and reporting by manufacturers and Member States is an essential precondition for the implementation of Regulation (EU) 2019/1242. ***Incorporating*** Regulation (EU) 2018/956 into Regulation (EU) 2019/1242 should produce synergies and allow for interpretation of the provisions that takes into account the objectives of both Regulations.

(47) ***When incorporating*** monitoring and reporting provisions ***of Regulation (EU) 2018/956*** into Regulation (EU) 2019/1242, the opportunity should be seized to slightly ***amend*** those provisions in light of the ***experience*** gained from the first two reporting cycles under Regulation (EU) 2018/956.

(48) Taking account of the fact that the determination ***of CO_2 emissions*** will no longer be carried out by manufacturers alone, ***the obligation to report CO_2*** emissions and other technical data of the ***heavy-duty*** vehicles should be extended beyond manufacturers to those entities which carry out that determination under Regulation (EU) 2017/2400 and Commission Implementing Regulation (EU) 2022/1362[22]. The data to be reported should comprise the manufacturer's records file.

(49) The Commission should be ***allowed*** to take into account technical progress, the evolution of freight transport logistics, ***such as especially heavy vehicle combinations used in some Member States,*** necessary adjustments based on the application of this Regulation and

[22] 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_2 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).

amendments of the underlying type-approval legal acts**,** 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_2 emissions ***reduction targets***, to ensure the availability of data on new and advanced CO_2 emissions reducing technologies and on the results of on-road verification ***tests,*** to ensure that the air drag value ranges remain relevant for information and comparability purposes, ***and*** to supplement the provisions on administrative fines.

(50) For ***those*** 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 which define vehicle sub-groups, ***including by adding sub-groups for extra heavy combination (EHC) lorries***, and which define vocational vehicles, and the criteria 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 ***the*** Annexes, ***in respect*** 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 ▌ of 13 April 2016 ***on Better Law-Making***. 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.

(51) In order to ensure uniform conditions for the implementation of Regulation (EU) 2019/1242, implementing powers should be conferred on the Commission in relation to the type-approval procedures and in relation to the common technical specifications, regarding the technical and open interoperability between the recharging and refuelling infrastructure and urban buses, in terms of physical connections and communication exchange. Those

powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council[23].

[23] Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by the Member States of the Commission's exercise of implementing powers (OJ L 55, 28.2.2011, p. 13).

(52) Regulation (EU) 2018/956 should be repealed with ***transitional provisions*** allowing the reporting period ***that is*** ongoing at the moment of entry into force of this Regulation to be concluded under the rules applicable at the beginning of that reporting period, including all processing of the data collected. Accordingly, this Regulation should apply from the beginning of the following reporting period.

(53) Since the objectives of this Regulation, namely to promote CO_2 emissions reductions in a cost-effective and economically efficient way in a manner commensurate with the economy-wide net greenhouse gas emissions reduction target for 2030 through amended Union fleet-wide CO_2 emissions reduction targets for heavy-duty vehicles, cannot be sufficiently achieved by the Member States but can rather, by reason of its scale and effects, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives.

(54) Regulations (EU) 2018/858 and (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 objectives

1. This Regulation ***sets*** CO_2 emissions performance ***standards*** for new heavy-duty vehicles***. Those standards*** contribute to achieving the Union’s ***climate-neutrality objective and the intermediate Union climate targets, as laid down in Regulation (EU) 2021/1119 of the European Parliament and of the Council*, Member States’ targets*** of reducing ***their*** greenhouse gas emissions, as laid down in Regulation (EU) ***2023/857 of the European Parliament and of the Council**,*** and the objectives of the Paris Agreement, as well as to ***ensuring*** the proper functioning of the internal market.

2. This Regulation also lays down ▌requirements for the reporting of CO_2 emissions from, and fuel consumption of, new heavy-duty vehicles registered in the Union.

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* ***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).***

** ***Regulation (EU) 2023/857 of the European Parliament and of the Council of 19 April 2023 amending Regulation (EU) 2018/842 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 Regulation (EU) 2018/1999 (OJ L 111, 26.4.2023, p. 1).’;***

(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 ***which are referred to in*** Article 2(3) of ***that*** Regulation, ***and which belong to any of*** the following ***vehicle*** categories:

(a) M_2 and M_3;

(b) N_1, ***N_2 and N_3, provided that the vehicles*** do not fall under Regulation (EU) 2019/631 ▌;

(c) O_3 and O_4.

For the purposes of this Regulation, ***the vehicles referred to in points (a), (b) and (c) of the first subparagraph*** shall be referred to as heavy-duty vehicles. Vehicles falling under ***point (a) or (b) of the first subparagraph*** 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 ***in*** Annex I thereto.’;

(b) paragraph 2 is replaced by the following:

‘2. ***For the purposes of this Regulation, heavy-duty*** vehicles shall ▌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 ***reporting*** period and have not been previously registered outside the Union.

A previous registration outside the Union that was made less than three months before registration in the Union shall not be taken into account.

This Regulation shall not apply to ***heavy-duty*** vehicles that are registered for the first time for a period not exceeding one month and that are registered for the sole purpose of transfer to a country outside the Union.';

▌

(3) Article 3 is amended as follows:

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

'(1) 'reference CO_2 emissions' means the average of the specific CO_2 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 ▌ are inserted:

'(3a) ▌ 'reporting period' means the period ***from 1 July*** of a given year ▌ to 30 June of the following year;

(3b) 'reference period' means the reporting period of a given year with respect to which the regulatory ***CO_2 emissions*** reduction obligations for a certain vehicle sub-group are specified under this Regulation;';

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

'(5) 'specific CO_2 emissions target' means the CO_2 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, fulfils the criteria laid down in point 1.2 of Annex I;';

(e) point (10) is ***replaced by the following:***

'(10) 'manufacturer' means the person or body to which the vehicles registered in a given period have been attributed in accordance with Article 7a;';

(f) the following ***point is*** inserted:

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

▌

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

'(11) 'zero-emission ***heavy-duty*** vehicle' means any of the following vehicles:

(a) a heavy-duty motor vehicle ***without an internal combustion engine, or with an internal combustion engine that emits*** not more than ***3 g CO_2/(tkm) or 1 g CO_2/(pkm)*** as determined in accordance with Article 9 of Regulation (EU) 2017/2400;

(b) a heavy-duty motor vehicle ***without an internal combustion engine, or with an internal combustion engine that emits not more than 1 g/kWh of CO_2 as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures or not more than 1 g/km of CO_2 as determined in accordance with*** Regulation ***(EC) No 715/2007 of the European Parliament and of the Council* and its implementing measures, provided that*** no CO_2 emissions have been determined ***pursuant*** to Regulation (EU) 2017/2400;

(c) a trailer equipped with a device that actively supports its propulsion, and that has no internal combustion engine or has an internal combustion engine that emits less than ***1 g CO_2/kWh*** as determined in accordance with Regulation (EC) No 595/2009 ▌ and its implementing measures or ***in accordance with*** UNECE Regulation (EC) No 49.

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* ***Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6)***

and on access to vehicle repair and maintenance information (OJ L 171, 29.6.2007, p. 1).';

(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_2 emissions of less than half of the reference CO_2 emissions of all vehicles in the vehicle sub-group to which the heavy-duty vehicle belongs, as determined in accordance with point 2.3.4 of Annex I;';

(i) the following points ▌ are added:

'***(16) 'primary vehicle' means a primary vehicle as defined in Article 3, point (22), of Regulation (EU) 2017/2400;***

(17) 'primary vehicle of a heavy-duty vehicle' means a primary vehicle ▌, 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;

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

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

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

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

(22) 'off-road special purpose vehicle' means an off road special purpose vehicle as defined in Part A, point 2.3.1, of Annex I to Regulation (EU) 2018/858;

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

(24) ‘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 of the European Parliament and of the Council*, ‘supply, works and service contracts’ as defined in Article 2, point (1), of Directive 2014/25/EU of the European Parliament and of the Council**, ***and*** ‘concessions’ as defined in Article 5, point (1), of Directive 2014/23/EU of the European Parliament and of the Council***’;

(25) ‘extra heavy combination lorry’ or ‘EHC lorry’ means a heavy-duty vehicle of category N_3 suitable for use in a vehicle combination and meeting all the following design and construction criteria:

(a) having three axles or more;

(b) with an engine rated power of at least 400 kW;

(c) designed with a technically permissible maximum laden mass (TPMLM) of the combination of more than 60 tonnes;

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* Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65).

** Directive 2014/25/EU of the European Parliament and of the Council of 26 February 2014 on procurement by entities operating in the water, energy, transport and postal services sectors and repealing Directive 2004/17/EC (OJ L 94, 28.3.2014, p. 243).

*** Directive 2014/23/EU of the European Parliament and of the Council of 26 February 2014 on the award of concession contracts (OJ L 94, 28.3.2014, p. 1).’;

(j) the following paragraphs are added:

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

In relation to a manufacturer, 'connected undertakings' means:

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

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

(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 ***right*** or powers referred to in point (a);

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

(e) undertakings in which the ***right*** 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 ▌ are inserted:

'Article 3a

CO_2 ***emissions reduction*** targets

1. The average CO_2 emissions of the Union fleet of new heavy-duty motor vehicles, other than special purpose ***vehicles***, off-road ***vehicles and*** off-road special purpose ▌ vehicles shall be reduced by the following percentages compared to the average CO_2 emissions of the reporting period of the year 2019:

(a) 15 % for vehicle sub-groups 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD and 10-LH for the reporting periods of the years 2025 to 2029;

(b) 45 % for all vehicle sub-groups ***other than vocational vehicles*** for the reporting periods of the years 2030 to 2034;

(c) 65 % for all vehicle sub-groups for the reporting periods of the years 2035 to 2039;

(d) 90 % for all vehicle sub-groups for the reporting periods of the year 2040 onwards.

2. ***The vehicle sub-groups shall contribute*** to the CO_2 ***emissions reduction*** targets ***referred to in paragraph 1, in accordance with*** point 4.3 of Annex I.

3. The CO_2 emissions related to the Union fleet of new trailers shall be ***reduced*** in accordance with point 4.3 of Annex I.

4. Notwithstanding Article 2(3) of Regulation (EU) 2017/2400, approved heavy-duty vehicles falling under Article 2(3), first subparagraph, point (b), of Regulation (EU) 2018/858 shall not be subject to the CO_2 emissions reduction targets set out in paragraphs 1 to 3 of this Article, unless the manufacturer chooses to include those heavy-duty vehicles in the calculation of its specific CO_2 emissions and targets when reporting those heavy-duty vehicles in accordance with Part B of Annex IV to this Regulation.

5. Heavy-duty vehicles other than those referred to in paragraph 4 that are registered for use by civil protection services, fire services, forces responsible for maintaining the public order or urgent medical care services shall not be subject to the CO_2 emissions reduction targets set out in paragraphs 1 to 3, provided that 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 heavy-duty vehicle cannot be equally served by a zero-emission heavy-duty vehicle and it is therefore in the public interest to register a heavy-duty vehicle with a combustion engine to fulfil that purpose.

Heavy-duty vehicles registered for use by armed services shall not be subject to the requirements of this Regulation if a Member State decides not to report them in accordance with Part A of Annex IV.

Article 3b

Additional measures to support the transition to zero-emission heavy-duty vehicles on the Union market

By 30 June 2025, the Commission shall submit to the European Parliament and to the Council a report which considers the need to facilitate the uptake on the Union market of heavy-duty vehicles which are retrofitted to become zero-emission heavy-duty vehicles, including by way of harmonised rules. That report shall contain an analysis of the options and the impact of those options. Where appropriate, the analysis shall be accompanied by a legislative initiative or other action.

Article 3c

Additional measures to support the demand for zero-emission heavy-duty vehicles on the Union market

By 30 June 2027, the Commission shall submit to the European Parliament and to the Council a report which contains an analysis of the potential need for and impact of initiatives to increase the share of zero-emission heavy-duty motor vehicles owned or leased by large fleet operators. In that report, the Commission shall consider possible options to increase the deployment of zero-emission heavy-duty vehicles owned or leased by large fleet operators.

Article 3d

Zero-emission ***heavy-duty*** vehicle target for urban buses

1. For ***heavy-duty*** vehicles referred to in ***the fourth column of the table in*** point 4.2 of Annex I ***('urban buses')***, manufacturers shall comply with the ***90 % and 100 %*** minimum shares of zero-emission ***heavy-duty*** vehicles in their fleet of new heavy-duty vehicles in ***accordance with*** point ***4.3.2*** of Annex I ▌.

▌

2. ***The Commission shall specify, by means of implementing acts, the common technical specifications, including standards**, **regarding the technical and open interoperability between the recharging and refuelling infrastructure and urban buses, in terms of physical connections and communication exchange.***

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 16(2).

3. ***The Commission is empowered to adopt delegated acts in accordance with Article 17 to supplement this Regulation by laying down common technical specifications, including standards, regarding*** the safe and secure sharing and use of the data generated ***in relation to the use of urban buses***.

Article 3e

Ensuring sustainable and resilient supply chains for urban buses through public procurement procedures

1. Contracting authorities and contracting entities shall base the award of public ***supply*** contracts for the purchase***, lease, rent or hire-purchase of new zero-emission urban buses, as well as of public service contracts having as their main subject matter the use of such urban buses, on the most economically advantageous*** tender ***which shall include the best price-quality ratio***.

2. ***Contracting authorities and contracting entities shall use at least two of the following criteria as technical specifications or as award criteria, at least one of which shall relate to*** the tender's contribution to the security of supply ***as set out in points (a) to (d), depending on the market situation and in compliance with Directive 2014/23/EU, 2014/24/EU or 2014/25/EU, and applicable sectoral legislation, as well as with the Union's international commitments, including the World Trade Organization Agreement on Government Procurement (the 'GPA') and other international agreements by which the Union is bound***:

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

the Council*; ***that criterion shall only apply to products of tenders originating in countries that are not parties to the GPA and that have not concluded a free trade agreement, including rules on public procurement, with the Union***;

▌

(***b***) the ***current and estimated*** availability of essential spare parts for the functioning of the equipment that is the subject of the tender;

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

(***d***) ▌ certification or documentation demonstrating that the organisation of the tenderer's supply chain ***allows*** it to comply with the security of supply requirement;

(e) environmental sustainability going beyond the minimum requirements provided for in applicable Union legal acts.

The first subparagraph shall not preclude contracting authorities and contracting entities from using additional criteria.

3. ***If*** the tender's contribution to security of supply ***is used as an award criterion, it*** shall be given a weighting of between 15 to 40 % of the award criteria.

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* Regulation (EU) No 952/2013 of the European Parliament and of the Council of 9 October 2013 laying down the Union Customs Code (OJ L 269, 10.10.2013, p. 1).';

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

'Starting from 1 July 2020, and in each subsequent reporting period, the Commission shall determine for each manufacturer the average specific CO_2 emissions in g/tkm for the preceding reporting period, by taking the following into account:

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

(b) the zero- and low-emission factor determined in accordance with Article 5; and

(c) in the reporting periods of the years 2030 to 2034, new zero-emission vocational vehicles falling within the scope of point 1.1.1 of Annex I.';

(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-*** and low-emission factor shall take into account the number and the CO_2 emissions of all zero- and low-emission heavy-duty vehicles ***of category N*** 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-*** and low-emission factor shall reduce the average specific CO_2 emissions of a manufacturer by a maximum of 3 %. The contribution to that factor of the zero-emission ***heavy-duty*** vehicles of category N, other than those in ***vehicle*** sub-groups 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD or 10-LH, shall reduce the average specific CO_2 emissions of a manufacturer by a maximum of 1,5 %.';

(7) Article 6 is replaced by the following:

‘Article 6

Specific CO_2 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_2 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 ▌ are inserted:

‘Article 6a

Transfer of ***heavy-duty*** vehicles between manufacturers

1. For the purpose of calculating the average specific CO_2 emissions of manufacturers in accordance with Article 4 and point 2.2 of Annex I, individual ***heavy-duty*** vehicles may be transferred between manufacturers, provided the following conditions are fulfilled:

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

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

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

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

2. Where the Commission considers that the conditions ***for*** a transfer are fulfilled, it shall not take the transferred ***heavy-duty*** vehicle into account for the calculation of

relevant values for the transferring manufacturer, but shall take ***it*** into account for the calculation of relevant values for the receiving manufacturer.

Article 6b

Exemption for manufacturers producing few ***heavy-duty*** vehicles

1. If a manufacturer registers fewer than 100 new heavy-duty vehicles in a given reporting period, the average specific CO_2 emissions as provided for in Article 4 and ***in*** point 2.7 of Annex I and the specific CO_2 emissions targets as provided for in Article 6 and ***in*** point 4.1 of Annex I shall be set ***at*** "0" for ***that*** reporting period.

2. Where paragraph 1 of this Article applies, the values of the average specific CO_2 emissions and ***of the*** specific CO_2 emissions ***targets*** shall not be included in the publication ***of data*** under Article 11 for the manufacturers and reporting periods concerned.

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

   (a) if the manufacturer so requests;

   (b) if the manufacturer requests a transfer of ***heavy-duty*** vehicles in accordance with Article 6a;

   (c) if the manufacturer is part of a group of connected manufacturers that collectively registered more than 100 ***heavy-duty*** vehicles in that reporting period or ***is part of a group of connected manufacturers that includes a manufacturer to which point (a) or (b)*** applies.

4. Manufacturers ***which are not*** part of a group ***within*** the meaning of paragraph 3, point (c), shall inform the Commission if they registered fewer than 100 ***heavy-duty*** 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 to which the exemption applies.

6. ▌Manufacturers shall ***inform the Commission for the purposes of paragraphs 4 and 5*** by 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_2 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_2 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 years 2029, 2034 and 2039. ***Emission credits shall be taken into account for the purpose of determining the manufacturer's compliance with its specific CO_2 emissions target only in any of the reporting periods of the 7 years that follow the reporting period during which they have been acquired.***';

(e) paragraph 2 is replaced by the following:

'2. The CO_2 emissions reduction trajectories shall be set for each manufacturer in accordance with point ***5.1.2*** of Annex I, based on the following linear trajectories:

(a) between the reference CO_2 emissions and the CO_2 emissions target for the reporting period of the ***year*** 2025 or 2030 as specified in Article 3a(1), points (a) and (b);

(b) between the CO_2 emissions target for the reporting period of the year 2025 and the CO_2 emissions target for the reporting period of the year 2030 as specified in Article 3a(1), point (b);

(c) between the CO_2 emissions target for the reporting period of the year 2030 and the CO_2 emissions target for the reporting period of the year 2035 as specified in Article 3a(1), point (c); and

(d) between the CO_2 emissions target for the reporting period of the year 2035 and the CO_2 emissions target for the reporting period of the year 2040 as specified in Article 3a(1), point (d).';

(10) the following Articles ▌ are inserted:

‘Article 7a

Attribution of ***heavy-duty*** vehicles to a manufacturer

When calculating the average specific CO_2 emissions ***referred to*** in Article 4 and the specific CO_2 emissions targets ***referred to*** in Article 6, the ***heavy-duty*** vehicles registered in a given reporting period shall be attributed to the following manufacturers:

(a) for ***heavy-duty*** vehicles of category N, to the vehicle manufacturer as defined in Article 3, point (4a), of Regulation (EU) 2017/2400;

(b) for ***heavy-duty*** vehicles of category M, to the primary vehicle manufacturer as defined in Article 3, point (29), of Regulation (EU) 2017/2400;

(c) for ***heavy-duty*** vehicles of category O, to the vehicle manufacturer as defined in Article 2, point (5), of ***Commission*** Implementing Regulation (EU) 2022/1362*.

Article 7b

Calculation of average specific CO_2 emissions of ***heavy-duty*** vehicles of category M

For heavy-duty vehicles of category M, the following shall apply:

(a) for the calculation of the average specific CO_2 emissions in a ***vehicle*** sub-group of a manufacturer, a new heavy-duty vehicle of category M shall be considered with its specific CO_2 emissions as ***a*** complete or completed vehicle under point 2.2.2 of Annex I and shall not be considered in point 2.2.3 of ***that Annex;***

(b) ***by way of derogation from point (a) of this Article***, upon request ***to the Commission*** by the primary vehicle manufacturer as referred to in Article 7a, point (b), and subject to the condition set out in ***point (c) of this Article***, a new heavy-duty vehicle of category M shall be considered with the specific CO_2 emissions of its primary vehicle in point 2.2.3 of Annex I and shall not be considered in point 2.2.2 of ***that*** Annex ▌ ;

(c) a request under point (b) of this Article for a new heavy-duty vehicle of category M shall not be admissible if ***the*** primary vehicle manufacturer, ▌ and the ▌ vehicle ***manufacturer*** as defined in Article 3, point (4a), of Regulation (EU) 2017/2400***, of the complete or completed vehicle*** are connected undertakings or ***parts of*** the same legal entity; by submitting such a request, the primary vehicle manufacturer declares that they are not connected undertakings or parts of the same legal entity***; it*** shall provide supporting information to the Commission upon request;

(d) the Commission, with support of the ***European Environment*** Agency, shall make available ***without delay*** in electronic format the tools and procedural guidance necessary for manufacturers to ***submit*** requests as referred to in point (b) ***to the Commission***.

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* 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_2 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).

';

(11) Article 8 is amended as follows:

(a) paragraph 1 is replaced by the following:

1. Where a manufacturer is found, pursuant to paragraph 2, to have excess CO_2 emissions in a given reporting period from 2025 onwards, the Commission shall impose an excess CO_2 emissions premium, calculated in accordance with the following formula: (excess CO_2 emissions premium) = (excess CO_2 emissions × 4 250 EUR/gCO2/tkm).';

(b) paragraph 2 is replaced by the following:

‘2. A manufacturer shall be deemed to have excess CO_2 emissions in any of the following cases:

(a) where, in any of the reporting periods of the years 2025 to 2028, 2030 to 2033 ***or*** 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 ***periods*** 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_2 emissions exceed its specific CO_2 emissions target.’;

The excess CO_2 emissions in a given reporting period shall be calculated in accordance with point 6 of Annex I.’;

(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_2 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 ***incorrect*** input data or other causes, in the execution of the CO_2 ***emissions*** determination were identified;

(c) where errors in the execution of the CO_2 ***emissions*** monitoring and reporting were identified;

(d) any deviations other than those referred to in point (a), (b) or (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_2 emissions of a manufacturer and the reference CO_2 emissions***. The Commission shall, where appropriate, amend*** the ***list referred to in*** Article ***11(1)***. The Commission ***shall not be*** obliged to take deviations into account if the recalculation of the average specific CO_2 emissions of a manufacturer or the reference CO_2 emissions results in a deviation of less than 0,1 %.’;

(13) Article 10 is replaced by the following:

‘Article 10

Assessment of reference CO_2 emissions

1. In order to ensure the robustness and representativeness of the reference CO_2 emissions of vehicle sub-groups to which a reporting period of the year 2024 or later year applies as the reference period according to point 3.2 of Annex I, the Commission shall assess the application of the conditions under which the reference CO_2 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 ***CO_2*** emissions ***are to*** be corrected, it shall adopt an implementing act to carry out ***those*** corrections, in accordance with the examination procedure referred to in Article 16(2).’;

(14) Article 11 is amended as follows:

(a) in paragraph 1, first subparagraph, point (d) is replaced by the following:

‘(d) from 1 July 2020 until 30 June 2041, for each manufacturer, its CO_2 emissions reduction trajectory, its emission credits and, from 1 July 2026 until 30 June 2041, its emission debts in the preceding reporting period, as referred to in Article 7;’;

(b) in paragraph 1, first subparagraph, point (e) is replaced by the following:

‘(e) from 1 July 2026, for each manufacturer, its excess CO_2 emissions in the preceding reporting period, as referred to in Article 8(2);’;

(c) 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_2 emissions determined in respect of that reference period.’;

(d) paragraph 2 is replaced by the following:

‘2. The Commission shall ***adopt*** implementing acts ***to amend the list set out in*** paragraph 1 where:

(a) the type-approval procedures referred to in Regulation (EC) No 595/2009 are amended, other than amendments related to the payload and passenger number values used for the determination of CO_2 emissions, in such a way that the level of the CO_2 emissions of the representative ***heavy-duty*** vehicles specified pursuant to ***paragraph 3*** increase or decrease by more than 5 g CO_2 /km; in such cases the adjusted reference emissions shall be calculated in accordance with point 1 of Annex II and ▌new values shall be published as a complement to previous values, indicating the reporting period when they apply the first time;

(b) the Annexes have been amended in accordance with Article 14 (1), points (a) to (f); in such cases previously published reference CO_2 emissions shall be recalculated in accordance with Annex I, taking into account the parameters amended ***in accordance with*** Article 14(1), points (a) to (f), and the recalculated set of reference CO_2 emissions shall be published and shall replace the previous ▌reference emissions as from the reporting period in which the ***parameters*** amended ***in accordance with*** Article 14(1), points (a) to (f), apply for the first time.’;

(e) the following paragraph is added:

‘3. Where the type-approval procedures referred to in Regulation (EC) No 595/2009 are amended as referred to in paragraph ***2, point (a), of this Article, the*** implementing ***acts referred to in paragraph 2 of this Article*** 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_2 emissions. That methodology shall be the basis for the calculation of the adjustment referred to in paragraph ***2, point (a)(i), of this Article***, taking into account the monitoring data reported pursuant to this Regulation and the technical characteristics ***referred to*** 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 is replaced by the following::

‘3. Where a lack of correspondence of CO_2 emission and fuel consumption values which cannot be attributed to a malfunctioning of the simulation tool, or the presence of any strategies artificially improving a vehicle’s performance, is found as a result of the verifications performed pursuant to paragraph 2, the responsible type-approval authority shall, in addition to taking the necessary measures set out in Chapter XI of Regulation (EU) 2018/858, ensure that the customer information files, the certificates of conformity and the individual approval certificates are corrected, as the case may be.Where the data in the customer information files, the certificates of conformity and the individual approval certificates cannot be corrected under Regulation (EU) 2018/858, the responsible type-approval authority shall issue a statement of correction with the corrected data***. It shall*** transmit that statement to the Commission and the parties concerned.’;

(16) the following Articles ▌ are inserted:

‘Article 13a

Monitoring and reporting by Member States

1. Starting from the reporting period of the year ... [***if this amending Regulation enters into force before 1 July, insert the year of its entry into force minus 1 year; if this amending Regulation enters into force after 30 June, insert the year of entry into force***],

Member States shall monitor the data specified in Part A of Annex IV relating to new heavy-duty vehicles registered for the first time in the Union.

By 30 September ***of*** each year, starting in 2020, the competent authorities of the Member States shall report those data ***for*** 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 monitoring and reporting 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. ***Heavy-duty*** vehicles designed and constructed or adapted for use by civil protection ***services***, fire services or forces responsible for maintaining public order shall be subject to ▌this Article▌.

4. ***Heavy-duty*** vehicles registered for ▌use by civil protection ***services***, fire services, forces responsible for maintaining public order or urgent medical care ***services*** ▌shall be subject to ▌this Article, irrespective of ***whether*** they are exempted ***from Article 3a***.

Article 13b

Reporting by manufacturers or other entities responsible for the determination of the ***CO_2 emissions of*** a heavy-duty vehicle▌

1. Manufacturers or other entities that are responsible for the determination of ***the CO_2 emissions of*** a heavy-duty vehicle and▌ ***are subject to*** Article 9 of Regulation (EU) 2017/2400 or Article 8 of Implementing Regulation (EU) 2022/1362▌ shall report the data for new heavy-duty vehicles ***in accordance with*** Part B of Annex IV ***to this Regulation***.

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

This paragraph shall not apply to heavy-duty ***vehicles*** that are exempted pursuant to Article 6b.

2. Each manufacturer or other entity ***within*** the meaning of paragraph 1 shall appoint a contact point for the purpose of reporting data in accordance with this Regulation.

3. The reporting ***obligations*** under Article ***13a(3) and (4)*** shall apply to manufacturers and other entities ***within*** the meaning of paragraph 1 ***of this Article***.

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 ***central*** register') reported pursuant to Articles 13a and 13b.

The ***central*** register shall be publicly available with the exception of data entries listed in point ***3.2*** of Annex V.

The ***air drag*** value shall be made publicly available in a range format as set out in Part C of Annex IV.

2. The ***European Environment*** Agency shall manage the ***central*** register 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_2 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 ***reported pursuant to paragraph 1,*** or finds, ***after*** its own verification ***pursuant to paragraph 2***, discrepancies in the dataset, it shall, where appropriate, take the necessary measures to correct the data published in the ***central register***.

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 ***13b*** 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 referred to in Article ***13b(1), second subparagraph,*** 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 ***type-approval*** authorities.

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

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

Those delegated acts shall respect the following principles:

(a) the procedure 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 ***fines***, 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 ***and*** duration of the deviation or ▌ delay**,** as well as any prior penalties imposed on the same manufacturer;

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

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

(17) Article 14 is replaced by the following:

‘Article 14

Amendments to Annexes I, IV and V

1. The Commission is empowered to adopt delegated acts in accordance with Article 17 ***of this Regulation*** with a view to amending the following elements in Annex I to ***this Regulation 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 legal acts, in particular Regulations (EU) 2018/858 and (***EC***) ***No*** 595/2009:

   (a) the criteria defining vehicle sub-groups set out in point 1.1***, including by adding separate vehicle sub-groups for EHC lorries***;

   (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 ***points 2.1.1, 2.1.2 and 2.1.3***;

   (f) the payloads, passenger numbers, passenger masses, technically permissible maximum payloads, technically permissible maximum passenger number and cargo volumes of vehicle sub-groups ▌ set out in point 2.5;

   (g) the annual mileage values set out in ***points 2.6.1, 2.6.2 and 2.6.3***.

2. The Commission is empowered to adopt delegated acts in accordance with Article 17 with a view to amending the following ***elements*** in Annex IV:

   (a) the data requirements specified in ***Parts*** A and ▌ B, to take into account technical progress, necessary adjustments based on the application of this Regulation and amendments of the underlying type-approval legal acts, in particular Regulations (EU) 2018/858 and (***EC***) ***No*** 595/2009;

(b) updating or adjusting the ***air drag value*** ranges set out in Part C, to take into account changes in ***the*** design ***of heavy-duty vehicles and to*** ensure that ***those*** 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) the ▌reporting procedure set out therein, to take into account experience gained from the application of this Regulation and to adapt the reporting procedure to technical progress;

(b) point 3.2, by adding any data entries that have been added to the ***central*** register.';

(18) Article 15 is replaced by the following:

'Article 15

Review

1. By 31 December 2027, the Commission shall ▌review the effectiveness and impact of this Regulation***, in particular as regards the objective of climate neutrality at the latest by 2050,*** and submit a report to the European Parliament and to the Council with the ***results of that review.***

In that report, the Commission shall particularly assess:

(a) the number of registrations of zero-emission heavy-duty vehicles in Member States;

(b) the progress in the deployment of public and private alternative fuels recharging and refuelling infrastructure for heavy-duty vehicles covered by this Regulation, as well as the existence of infrastructural constraints in third countries on the operation of newly EU-registered heavy-duty vehicles outside the Union;

(c) the impact on employment, especially on micro, small and medium-sized enterprises (SMEs), the effectiveness of measures to support retraining and upskilling of the workforce, and the importance of an economically viable and socially fair transition towards zero-emission road mobility; special emphasis shall be placed on the impact on peripheral Member States and on the impact on the transport of perishable goods;

(d) whether the continuation of the exemption set out in Article 6bfor manufacturers producing few vehicles is still justified;

(e) the impact of establishing minimum energy-efficiency thresholds for new zero-emission heavy-duty vehicles placed on the Union market;

(f) the level of the excess CO_2 emissions premium, to ensure that it exceeds the average marginal costs of the technologies needed to meet the CO_2 emissions reduction targets;

(g) the inclusion of the following heavy-duty vehicles, which do not currently fall within the scope of Regulation (EU) 2017/2400, in the CO_2 emissions reduction targets:

> ***(i) small lorries with a TPMLM less or equal to 5 tonnes, following an investigation of the appropriateness of the determination of CO_2 emissions for such heavy-duty vehicles, in accordance with Regulation (EU) 2017/2400 (VECTO simulations), taking into account Regulation (EU) 2017/1151; and***
>
> ***(ii) special purpose vehicles, off-road vehicles and off-road special purpose vehicles;***

(h) any specific constraints in complying with Article 3d(1) due to socio-economic cost benefits in view of specific territorial morphology or meteorological circumstances, as well as recent investments in biomethane already made by public authorities;

(i) the role of a carbon correction factor in the transition towards zero-emission mobility in the heavy-duty vehicles sector;

(j) the role of a methodology for registering heavy-duty vehicles running exclusively on CO_2 neutral fuels, in conformity with Union law and with the Union climate-neutrality objective;

(k) whether the creation of new vehicle sub-groups for EHC lorries has led to an undue increase in engine rated power;

(l) the possibility of developing a common Union methodology for the assessment, and the consistent data reporting, of the full lifecycle CO_2 emissions of new heavy-duty vehicles that are placed on the Union market;

(m) options to consider zero-emission heavy-duty vehicles which have been retrofitted from conventional heavy-duty vehicles previously registered, for the purposes of compliance assessment under this Regulation.

That report shall, where appropriate, be accompanied by a legislative proposal to amend this Regulation.

2. The Commission shall assess the role of sustainable renewable fuels in the transition towards climate neutrality, including in the heavy-duty vehicles sector. Separately from the review referred to in paragraph 1, and as part of a broader strategy for the deployment of such fuels, the Commission shall by 31 December 2025 present a report to the European Parliament and to the Council with a comprehensive analysis of the need to further incentivise the uptake of advanced biofuels and biogas and renewable fuels of non-biological origin in the heavy-duty vehicles sector and the appropriate framework of measures, including financial incentives, to achieve that deployment. Based on that analysis, the Commission shall, where appropriate, make additional legislative proposals or shall make recommendations to the Member States.

▌’;

(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 3d***(3)***, Article 13(4), second subparagraph, Article 13***d(2)***, Article 13***f(2) and*** Article ***14(1)***, ***(2) and (3)*** shall be conferred on the Commission for a period of five years from ... [*date of entry into force of this amending Regulation*].’;

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

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

(c) in paragraph 6, the first sentence is replaced by the following:

‘A delegated act adopted pursuant to Article ***3d(3)***, Article 13(4), second subparagraph, Article 13***d(2)***, Article 13***f(2) and Article 14(1)***, ***(2)*** and ***(3)*** shall enter into force only if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and to the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object.’;

(20) Annexes I ***and II*** to Regulation (EU) 2019/1242 are replaced by the text set out in Annex I to this Regulation;

(21) the text set out in Annex II to this Regulation is added as Annexes ***III,*** IV, V and VI to Regulation (EU) 2019/1242.

Article 2

Amendments to Regulation (EU) 2018/858

Regulation (EU) 2018/858 is amended as follows:

(1) Article 3 is amended as follows:

(a) point (33) is replaced by the following:

'(33) 'semi-trailer' means a trailer in which the axle, or axles are positioned behind the centre of gravity of the vehicle (when uniformly loaded), and which is equipped with a connecting device permitting horizontal and vertical forces to be transmitted to the towing vehicle;';

(b) the following point is added:

'(59) 'e-trailer' means any kind of trailer that is able to contribute to the propulsion of the vehicle combination by using its own electric powertrain and which is not able to be used on public roads without being actively towed by a motor vehicle.';

(2) in Annex I, Part B, point 6.1.1(d), the following sub-point is added:

'(iii) the design and construction of the essential constituent elements forming the propulsion and energy storage system in the case of e-trailers;'.

Article 3

Repeal of Regulation (EU) 2018/956

Regulation (EU) 2018/956 is repealed with effect from ... [***date of application of this amending Regulation***].

References to Regulation (EU) 2018/956 shall be construed as references to Regulation (EU) 2019/1242 and shall be read in accordance with the correlation table set out in Annex VI to Regulation (EU) 2019/1242, as ***included in Annex II*** to this Regulation.

Article 4

Transitional provisions

Notwithstanding Article 3, in respect of reporting periods prior to ***… [date of application of this amending Regulation],*** Regulation (EU) 2019/1242 as applicable on 30 June ***… [year of the first 1 July following the date of entry into force of this amending Regulation]*** and Regulation (EU) 2018/956 as applicable on 30 June ***… [year of the first 1 July following the date of entry into force of this amending Regulation]*** shall continue to apply.

Article ***5***

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 ***… [year of the first 1 July following the date of entry into force of this amending Regulation***].

▌

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

Done at ...,

For the European Parliament	*For the Council*
The President	*The President*

ANNEX I

Annexes I and II to Regulation (EU) 2019/1242 are amended as follows:

(1) Annex I is replaced by the following:

'ANNEX I

Average specific CO_2 emissions, specific CO_2 emissions targets and excess CO_2 emissions

1. Vehicle sub-groups

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

1.1.1. For heavy-duty vehicles of category N, the vehicle sub-group sg is defined as follows:

Vehicle group pursuant to Annex I to Regulation (EU) 2017/2400	**Cab type**	**Engine power**	**Operational range (OR)**	**Vehicle sub-group (sg) attributed for the purposes of this Regulation***	
				Vehicles other than vocational vehicles	**Vocational vehicles**
53 and zero-emission heavy-duty vehicles in 51	**All**			**53**	**53v**
54 and zero-emission heavy-duty vehicles in 52	**All**			**54**	**-**
1s	**All**			**1s**	**1sv**
1	**All**			**1**	**1v**
2	**All**			**2**	**2v**
3	**All**			**3**	**3v**
4	**All**	**<170 kW**	**All**	**4-UD**	**4v**

	Day cab	**≥170 kW**	**All**	**4-RD**	
	Sleeper cab	**≥170 kW and <265 kW**			
	Sleeper cab	**≥265 kW**	**< 350 km**		
	Sleeper cab	**≥265 kW**	**≥ 350 km**	**4-LH**	
9	**Day cab**	**All**	**All**	**9-RD**	**9v**
	Sleeper cab	**All**	**< 350 km**		
	Sleeper cab	**All**	**≥ 350 km**	**9-LH**	
5	**Day cab**	**All**	**All**	**5-RD**	**5v**
	Sleeper cab	**< 265 kW**			
	Sleeper cab	**≥ 265 kW**	**< 350 km**		
	Sleeper cab	**≥ 265 kW**	**≥ 350 km**	**5-LH**	
10	**Day cab**	**All**	**All**	**10-RD**	**10v**
	Sleeper cab	**All**	**< 350 km**		
	Sleeper cab	**All**	**≥ 350 km**	**10-LH**	
11	**All**			**11**	**11v**
12	**All**			**12**	**12v**
16	**All**			**16**	**16v**

*** For the calculation of vehicle shares and average specific CO_2 emissions of manufacturers of reporting periods of the years 2030 to 2034 ▌ in accordance with points 2.4 and 2.7, respectively, zero-emission vocational vehicles of category N shall be attributed as follows:**

Zero-emission vocational vehicle in vehicle sub-group	**Attributed to vehicle sub-group**
53v	**53**
1sv	**1s**
1v	**1**
2v	**2**
3v	**3**
4v	**4-UD**
5v	**5-RD**
9v	**9-RD**
10v	**10-RD**
11v	**11**
12v	**12**
16v	**16**

‘Sleeper cab’ means a type of cab that has a compartment behind the driver's seat intended to be used for sleeping as reported pursuant to 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 vehicle sub-group 4-UD, but data on the CO_2 emissions in g/km are not available for the UDL or UDR mission profiles as defined in point ***1.4,*** the new heavy-duty vehicle shall be attributed to vehicle sub-group 4-RD.

’Operational range’ means the distance a heavy-duty 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 heavy-duty vehicles of category M, the vehicle sub-group *sg* is defined as follows:

Vehicle group pursuant to Annex I to Regulation (EU) 2017/2400	**Vehicle sub-group (sg) attributed for the purposes of this Regulation**
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, *39c*	**39-FE**

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

Vehicle groups defined in Annex I to Implementing Regulation (EU) 2022/1362	**Vehicle sub-group (sg) attributed for the purposes of this Regulation**
All groups provided for in Table 1 with one, two or three axles	**Same as provided in the column "vehicle group" of the tables in Annex I to Implementing Regulation (EU) 2022/1362.**
All groups provided in Table 4 with ▌ two *or* three axles	
All groups provided for 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 or 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)**
Heavy-duty 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**
UDR	**Urban delivery payload representative**
REL	**Regional delivery (EMS) payload low**
RER	**Regional delivery (EMS) payload representative**
LEL	**Long haul (EMS) payload low**
LER	**Long haul (EMS) payload representative**
MUL	**Municipal utility payload low**
MUR	**Municipal utility payload representative**
COL	**Construction payload low**
COR	**Construction payload representative**
HPL	**Heavy urban, *passenger* transport, low load**

HPR	**Heavy urban, *passenger* transport, representative load**
UPL	**Urban, *passenger* transport, low load**
UPR	**Urban, *passenger* transport, representative load**
SPL	**Sub-urban, *passenger* transport, low load**
SPR	**Sub-urban, *passenger* transport, representative load**
IPL	**Inter-urban, *passenger* transport, low load**
IPR	**Inter-urban, *passenger* transport, representative load**
CPL	**Coach, *passenger* transport, low load**
CPR	**Coach, *passenger* transport, representative load**

2. Calculation of the average specific CO_2 emissions of a manufacturer

2.1. Calculation of the specific CO_2 emissions of a new heavy-duty vehicle

The specific CO_2 emissions in g/km of a new heavy-duty vehicle *v* attributed to a vehicle sub-group *sg* or of its primary vehicle shall be calculated as follows:

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

$$CO2\mathrm{p}_v = \sum_{mp} W_{sg,mp} \times CO2\mathrm{p}_{v,mp}$$

Where,

$\sum_{mp}$ is the sum of all mission profiles *mp* listed in ***point 1.4***;

sg is the vehicle sub-group to which the new heavy-duty vehicle *v* has been attributed according to point 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_2 emissions in g/km of the new heavy-duty vehicle *v* determined for a mission profile *mp*, reported pursuant to Articles 13a and 13b and normalised pursuant to Annex III;

$CO2p_{v,mp}$ is the CO_2 emissions in g/km of the primary vehicle of the new heavy-duty vehicle *v*, determined for a mission profile *mp*, ***and for the chassis configuration (low/high floor, number of decks) applicable to its vehicle sub-group sg,*** reported pursuant to Articles 13a and 13b ***and normalised pursuant to Annex III***;

For zero-emission heavy-duty 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 heavy-duty 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, 53v	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, 1sv	0,1	0,3	0	0	0,18	0,42	0	0	0	0	0
1, 1v	0,1	0,3	0	0	0,18	0,42	0	0	0	0	0
2, 2v	0,125	0,375	0	0	0,15	0,35	0	0	0	0	0
3, 3v	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
5-RD	0,27	0,63	0,03	0,07	0	0	0	0	0	0	0
5-LH	0,03	0,07	0,27	0,63	0	0	0	0	0	0	0
5v	0	0	0	0	0	0	0	0	0	0,5	0,5
9-RD	0,27	0,63	0,03	0,07	0	0	0	0	0	0	0
9-LH	0,03	0,07	0,27	0,63	0	0	0	0	0	0	0
9v	0	0	0	0	0	0	0	0,25	0,25	0,25	0,25
10-RD	0,27	0,63	0,03	0,07	0	0	0	0	0	0	0
10-LH	0,03	0,07	0,27	0,63	0	0	0	0	0	0	0
10v	0	0	0	0	0	0	0	0	0	0,5	0,5
11	0,3	0,7	0	0	0	0	0	0	0	0	0
11v	0	0	0	0	0	0	0	0,1	0,23	0,3	0,37
12	0,3	0,7	0	0	0	0	0	0	0	0	0
12v	0	0	0	0	0	0	0	0	0	0,3	0,7
16, 16v	0	0	0	0	0	0	0	0	0	0,3	0,7

* See definitions in point 1.1

** See definitions in point 1.4

2.1.2. Mission profile weights (Wsg,mp) for heavy-duty vehicles of category M

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

* See definitions in point 1.1

** See definitions in point 1.4

2.1.3. Mission profile weights (Wsg,mp) for heavy-duty 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**
621, 623	**0,27**	**0,63**	**0,03**	**0,07**	**0**	**0**	**0**
621V, 622, 622V, 623V, 624, 624V, 625	**0,03**	**0,07**	**0,27**	**0,63**	**0**	**0**	**0**
631, 631v, 632, 632v, 633	**0,03**	**0,07**	**0,27**	**0,63**	**0**	**0**	**0**

* See definitions in point 1.1

** See definitions in point 1.4

2.2. Average specific CO_2 emissions of all new heavy-duty vehicles in a vehicle sub-group for a manufacturer

For each manufacturer and each ***reporting period***, the average specific CO_2 emissions $avgCO2_{sg}$ of all new heavy-duty vehicles in a vehicle sub-group *sg* or their primary vehicles, if applicable, shall be calculated as follows:

2.2.1. For heavy-duty vehicles of categories N and O:

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

2.2.2. For complete or completed vehicles of category M:

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

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

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

Where,

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

$CO2_v$ is the specific CO_2 emissions of the new heavy-duty vehicle *v* determined in accordance with point 2.1;

$CO2p_v$ is the specific CO_2 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 the vehicle sub-group *sg*;

Vpv_{sg} the number of new heavy-duty vehicles in the vehicle sub-group *sg*, which pursuant to Article 7b shall be accounted for with the CO_2 emissions of their primary vehicles in the calculation of the average specific CO_2 emissions of point 2.2.3;

PL_{sg} is the average payload of heavy-duty vehicles in the vehicle sub-group *sg* as determined in point 2.5;

PN_{sg} is the average passenger number of vehicles in the vehicle 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 vehicles factor (ZLEV) referred to in Article 5 shall be calculated as follows:

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

where:

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

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

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

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

V_{out} *is the total number of zero-emission heavy-duty vehicles* ***of category N****, which are not in the vehicle 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 vehicles 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 vehicle 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- or low-emission heavy-duty vehicle v determined in accordance with point 2.1;

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

V_{out} is the total number of newly registered zero-emission heavy-duty vehicles ***of category N***, which are not in the vehicle 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 category N*** 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 from 2030 onwards

ZLEV = 1

2.3.4 Calculation of the low-emission threshold

The low-emission threshold LET_{sg} of the vehicle 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 vehicle sub-group sg, as determined in point 3;

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

2.4. Calculation of heavy-duty vehicle shares

For each manufacturer and each ***reporting period***, the share of new heavy-duty vehicles in a vehicle 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-emission heavy-duty vehicles in a vehicle 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 vehicle sub-group sg, which pursuant to Article 7b shall be accounted for with the CO_2 emissions of their primary vehicles in the calculation of the average specific CO_2 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-emission heavy-duty vehicles of the manufacturer in a vehicle sub-group *sg*;

Vpv_{sg} the number of new heavy-duty vehicles within the vehicle sub-group *sg*, which pursuant to Article 7b shall be accounted for with the CO_2 emissions of their primary vehicles in the calculation of the average specific CO_2 emissions of point 2.2.;

V_{sg} is the number of new heavy-duty vehicles of the manufacturer in a vehicle sub-group *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 heavy-duty vehicle of category N or O in a vehicle 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 heavy-duty vehicle of category M in a vehicle 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 of 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 heavy-duty vehicles of categories N and O in the vehicle sub-group *sg* for the mission profile *mp*, as specified in points 2.5.1 and 2.5.3;

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

2.5.1. Heavy-duty vehicles of category N

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

<table>
<tr><th rowspan="2">Vehicle sub-group sg*</th><th colspan="14">Mission profile mp**</th></tr>
<tr><th>RDL</th><th>RDR</th><th>LHL</th><th>LHR</th><th>UDL</th><th>UDR</th><th>REL</th><th>RER</th><th>LEL</th><th>LER</th><th>MUL</th><th>MUR</th><th>COL</th><th>COR</th></tr>
<tr><td>53</td><td colspan="2" rowspan="12">As determined in point 3.1.1</td><td colspan="2" rowspan="8">Not applicable</td><td colspan="2" rowspan="12">As determined in point 3.1.1</td><td colspan="8" rowspan="12">Not applicable</td></tr>
<tr><td>53v</td></tr>
<tr><td>54</td></tr>
<tr><td>1s</td></tr>
<tr><td>1sv</td></tr>
<tr><td>1</td></tr>
<tr><td>1v</td></tr>
<tr><td>2</td><td colspan="2" rowspan="2">As determined in point 3.1.1</td></tr>
<tr><td>2v</td></tr>
<tr><td>3</td><td colspan="2" rowspan="2">Not applicable</td></tr>
<tr><td>3v</td></tr>
<tr><td>4-UD</td><td rowspan="3">0,9</td><td rowspan="3">4,4</td><td rowspan="3">1,9</td><td rowspan="3">14</td><td rowspan="3">0,9</td><td rowspan="3">4,4</td><td rowspan="3">3,5</td><td rowspan="3">17,5</td><td rowspan="3">3,5</td><td rowspan="3">26,5</td><td rowspan="3">0,6</td><td rowspan="3">3,0</td><td rowspan="3">0,9</td><td rowspan="3">4,4</td></tr>
<tr><td>4-RD</td></tr>
<tr><td>4-LH</td></tr>
</table>

4v														
5-RD	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
5-LH														
5v														
9-RD	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
9-LH														
9v														
10-RD	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
10-LH														
10v														
11	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
11v														
12	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
12v														
16	Not applicable												2,6	12,9
16v														

* 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 in accordance with point 3.1.1.

2.5.2. Heavy-duty vehicles of category M

Passenger numbers $PN_{sg,mp}$, passenger masses $PM_{sg,mp}$ and technically permissible maximum passenger numbers $maxPN_{sg}$ for the vehicle sub-group *sg* and mission profile *mp* are determined in accordance with point 3.1.1.

2.5.3. Heavy-duty vehicles of category O

Payload values $PL_{sg,\ mp}$ (in tonnes) 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, 625	**2,6**	**12,9**	**2,6**	**19,3**	**n.a.**	**n.a.**	**n.a.**
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 in accordance with 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 vehicle 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 vehicle 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 vehicle sub-group 5-LH, and shall be calculated as follows:

$$MPW_{sg} = \frac{(AM_{sg} \times PL_{sg})}{(AM_{5-LH} \times PL_{5-LH})}$$ (for heavy-duty vehicles of categories N and O)

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

Where,

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

$AM_{5\text{-}LH}$ is the annual mileage specified for vehicle 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;

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

2.6.1. Annual mileages for heavy-duty vehicles of category N

Vehicle sub-group ***(sg)****	Annual mileage AM_{sg} (in km)
53, 53v	58 000
54	58 000
1s, 1sv	58 000
1, 1v	58 000
2, 2v	60 000
3, 3v	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
11v	60 000
12	67 000
12v	60 000
16, 16v	60 000

* See definitions in point 1.1

2.6.2. Annual mileages for heavy-duty vehicles of category M

Vehicle sub-group *(sg)**	Annual mileage AM_{sg} (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 heavy-duty vehicles of category O

Vehicle sub-group *(sg)**	Annual mileage AM_{sg} (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_2 emissions of manufacturers, as referred to in Article 4

For each manufacturer, the following average specific CO_2 emissions shall be calculated:

2.7.1. For the reporting periods of the years 2019 to 2029:

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

2.7.2. For the reporting periods from 2025 onwards:

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

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

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

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

Where,

$\sum_{sg}$	is the sum of those vehicle sub-groups that are included in the calculation of the particular average specific CO_2 emissions in accordance with 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 vehicle sub-group *sg* according to point 3.2.

3.1.1. For each vehicle, the 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:

$$PL_{sg,mp} = \frac{\sum_v PL_{v,mp}}{rV_{sg}}$$ (for heavy-duty vehicles of category N)*

$$PN_{sg,mp} = \frac{\sum_v PN_{v,mp}}{rV_{sg}}$$ (for heavy-duty vehicles of category M)*

$$PM_{sg,mp} = \frac{\sum_v PM_{v,mp}}{rV_{sg}}$$ (for heavy-duty vehicles of category M)*

$$maxPL_{sg} = \frac{\sum_v maxPL_v}{rV_{sg}}$$ (for heavy-duty vehicles of category N)

$$maxPN_{sg} = \frac{\sum_v maxPN_v}{rV_{sg}}$$ (for heavy-duty vehicles of category M)

$$CV_{sg} = \frac{\sum_v CV_v}{rV_{sg}}$$ (for heavy-duty 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_2 emissions $rCO2_{sg}$ referred to in Article 3 shall be calculated as follows:

$$rCO2_{sg} = \frac{\sum_v (CO2_v / PL_{sg})}{rV_{sg}}$$ (for heavy-duty vehicles of categories N and O)

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

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

Where,

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

$CO2_v$ are the specific CO_2 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_2 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 vehicle sub-group *sg* registered in the reference period applicable to *sg* according to point 3.2;

PL_{sg} is the average payload of heavy-duty vehicles in the vehicle sub-group *sg* as determined in point 2.5;

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

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

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

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

$maxPL_v$ is the technically permissible maximum payload of the heavy-duty vehicle *v* as determined from the data reported pursuant to Articles 13a and 13b;

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

CV_v is the cargo volume of the heavy-duty vehicle *v* as determined from the data reported pursuant to Articles 13a and 13b.

3.2. Reference periods applicable to vehicle 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
1, 2, 3, 11, 12, 16	***2021***
All others	2025

3.2.1. If in the reference period as specified in point 3.2 in a vehicle 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_2 emissions $avgCO2_{sg}$ and $avgCO2p_{sg}$ as provided for in point 2.2 and the reference CO_2 emissions $rCO2_{sg}$ and $rCO2p_{sg}$ as provided for in point 3.1.2 shall be set to "0" for all manufacturers in the vehicle sub-group *sg* for the purpose of calculating the average specific CO_2 emissions in accordance with point 2.7 and the specific CO_2 emissions targets in accordance with 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 vehicle sub-group *sg* is at least 50.

To obtain the reference CO_2 emissions $rCO2_{sg}$ and $rCO2p_{sg}$ for the purpose of calculating the specific CO_2 emissions target in accordance with point 4, first the corresponding ***values*** 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 vehicle 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_2 emissions $rCO2_{sg}$,

- the target factor $RETp_{sg,Y}$, as defined in point 5.1.1, for obtaining reference CO_2 emissions $rCO2p_{sg}$.

4. Calculation of the specific CO_2 emissions target of a manufacturer referred to in Article 6

4.1. Specific CO_2 emissions targets

For each manufacturer, the following specific CO_2 emissions target *T* shall be calculated as follows:

4.1.1. For the reporting periods of the years 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 year 2030 onwards:

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

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

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

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

Where,

$\sum_{sg}$ is the sum of those vehicle sub-groups that are included in the calculation of the particular specific CO_2 emissions target in accordance with point 4.2;

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

MPW_{sg} is as determined in point 2.6;

rf_{sg} is the CO_2 emissions reduction target ***applicable in*** the specific ***reporting period*** to new heavy-duty vehicles in the vehicle sub-group *sg* as provided for in point 4.3;

rfp_{sg} is the CO_2 emissions reduction target ***applicable in*** the specific ***reporting period*** to primary vehicles of new heavy-duty vehicles in the vehicle sub-group *sg* as provided for in point 4.3;

$zevM_{sg}$ is the zero-emission heavy-duty vehicles mandate ***applicable in*** the specific ***reporting period*** to heavy-duty vehicles in the vehicle sub-group *sg* 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_2 emissions and specific CO_2 emissions targets of manufacturers

The following vehicle sub-groups *sg* shall be included in the calculation of the specific CO_2 emissions $CO_2(X)$, specific CO_2 emissions targets $T(X)$ and CO_2 emissions reduction trajectory $ET(X)_Y$:

X = 2025	**X= NO**	**X = MCO2**	**X= MZE**
vehicle sub-groups, subject to CO_2 emissions reduction targets according to Article 3a (1), point (a)	**vehicle sub-groups of carriage of goods vehicles, subject to CO_2 emissions reduction targets according to Article 3a(1), points (b), (c) and (d), and Article 3a (3)**	**vehicle sub-groups of carriage of *passengers* vehicles, subject to CO_2 emissions reduction targets according to Article 3a (1), points (b), (c) and (d) *(Coaches and Class II Low Entry Buses)***	**vehicle sub-groups of carriage of *passengers* vehicles, subject to zero-emission heavy-duty vehicles targets according to Article 3d *(Urban buses)***
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. ***However, in reporting periods of the years before 2035, vocational vehicle sub-groups shall not be included.***	32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD, ***31-L2, 33-L2***	31-LF ▌31-L1, 31-DD, 33-LF, ▌33-L1, 33-DD, 35-FE, 39-FE

4.3. CO_2 emissions reduction targets and zero-emission heavy-duty vehicle mandates

4.3.1. The following CO_2 emissions reduction targets rf_{sg} and rfp_{sg} pursuant to Article 3a shall apply to heavy-duty vehicles in the vehicle sub-group *sg* for different reporting periods:

CO_2 emissions reduction targets rf_{sg} and rfp_{sg}					
Vehicle sub-groups *sg*		Reporting periods of the years			
		2025 – 2029	2030 – 2034	2035 – 2039	As from 2040
Medium lorries	**53, 54**	**0**	**43 %**	**64 %**	**90 %**
Heavy lorries > 7,4t	**1s, 1, 2, 3**	**0**	**43 %**	**64 %**	**90 %**
Heavy lorries > 16 t with 4x2 and 6x4 axle configurations	**4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH**	**15 %**	**43 %**	**64 %**	**90 %**
Heavy lorries > 16 t with special axle configurations	**11, 12, 16**	**0**	**43 %**	**64 %**	**90 %**
Vocational vehicles	**53v, 1sv, 1v, 2v, 3v, 4v, 5v, 9v, 10v, 11v, 12v, 16v**	**0**	**0**	**64 %**	**90 %**
Coaches *and interurban buses* (*rf_{sg}*)	**32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD, *31-L2, 33-L2***	**0**	**43 %**	**64 %**	**90 %**
Primary vehicles of coaches *and interurban buses* (*rfp_{sg}*)	**32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD, *31-L2, 33-L2***	**0**	**43 %**	**64 %**	**90 %**
Trailers	111, 111V,	**0**	**7,5 %**	**7,5 %**	**7,5 %**

	112, 112V, 113, 121, 121V, 122, 122V, 123, 123V, 124, 124V, 125, 126, 131, 131V, 132, 132V, 133				
Semi-trailers	421, 421v, 422, 422v, 423, 431, 431v, 432, 432v, 433, 611, 612, 611V, 612V, 621, 623, 621V, 622, 622V, 623V, 624, 624V, 625, 631, 631v, 632, 632v, 633	**0**	***10 %***	***10 %***	***10 %***

For reporting periods of the years before 2025, all CO_2 emissions reduction targets rf_{sg} and rfp_{sg} shall be 0.

4.3.2. The following zero-emission heavy-duty vehicle targets $zevM_{sg}$ pursuant to Article 3d are applicable to heavy-duty vehicles in the vehicle sub-group *sg* for different reporting periods:

Zero-emission heavy-duty vehicle mandates $zevM_{sg}$					
Vehicle sub-groups *sg*		Reporting periods of the years			
		before 2030	2030 – 2034	2035 – 2039	As from 2040
Urban ▌ buses	**31-LF, 31-L1, 31-DD, 33-LF, 33-L1, 33-DD, 35-FE, 39-FE, ▌**	**0**	***90 %***	**100 %**	**100 %**

5. Emission credits and debts referred to in Article 7

5.1. CO_2 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, **2035,** 2040} ***for the vehicle sub-groups indicated in the column X = 2025 in the table of point 4.2,*** ***- in the set {rY, 2030, 2035, 2040} for all other vehicle sub-groups sg,*** 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_2 emissions reduction targets of the vehicle 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_2 emissions reduction targets of the vehicle 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-emission heavy-duty 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_2 emissions reduction trajectory.

5.1.2. CO_2 emissions reduction trajectories

5.1.2.1. Then for each vehicle sub-group *sg* and reporting period of a year *Y* the following CO_2 emissions reduction trajectories shall be defined:

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

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

$$ETz_{sg,Y} = ZET_{sg,Y} \times rCO2_{sg}$$

5.1.2.2. For each manufacturer and reporting period of a year *Y* between 2019 and 2024 the following CO_2 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 period of a year *Y* between 2025 and 2040 the following CO_2 emissions reduction trajectories shall be defined:

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

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

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

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

Where,

$\sum_{sg}$ is the sum of those vehicle sub-groups that are included in the calculation of the particular CO_2 emissions reduction trajectory in accordance with point 4.2;

$share_{sg}$ is the share of new heavy-duty vehicles of the manufacturer in the vehicle 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 vehicle sub-group *sg*, which pursuant to Article 7b shall be accounted for with the CO_2 emissions of their primary vehicles in the calculation of the average specific CO_2 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 have the following values or be 0 (i.e. emission credits and emission debts cannot be negative), whichever is greater:

	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 CO_2 emissions reduction 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 CO_2 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 CO_2 emissions 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 the 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 years Y < 2030;

$limCO2(NO)_Y = T(NO)_Y \times 0{,}05 \times V(NO)_Y$ for the reporting periods of the years Y ≥ 2030;

$limCO2(M)_Y = T(M)_Y \times 0{,}05 \times V(M)_Y$ for the reporting periods of the years Y ≥ 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_2 emissions $CO_2(X)$ in accordance with point 4.2 *(X = 2025, NO, M)*.

5.4. Early emission credits

Emission debts acquired ***for the reporting period of the*** year 2025 shall be reduced by an amount corresponding to the emission credits acquired prior to ***that 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 of the ***reporting periods of the years Y from*** 2019 to 2024;
$dCO2(NO)_Y$	is the emission debts for the ***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_2 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_2 emissions $exeCO2(X)_Y$ shall be calculated as follows if the value is positive (X = NO, M).

For the *reporting period of* the year 2025:

$$exeCO2(NO)_{2025} = dCO2(NO)_{2025} - \sum_{Y=2019}^{2024} cCO2(NO)_Y - limCO2(NO)_{2025}$$

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

$$exeCO2(NO)_y = \sum_{I=2025}^{Y} (dCO2(NO)_I - ccCO2(NO)_{I,Y}) - \sum_{J=2025}^{Y-1} exeCO2(NO)_J - redCO2 - limCO2(NO)_Y$$

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

$$exeCO2(M)_y = \sum_{I=2025}^{Y} (dCO2(M)_I - ccCO2(M)_{I,Y}) - \sum_{J=2030}^{Y-1} exeCO2(M)_J - limCO2(M)_Y$$

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

$$exeCO2(NO)_Y = \sum_{I=2025}^{Y} (dCO2(NO)_I - ccCO2(NO)_{I,Y}) - \sum_{J=2025}^{Y-1} exeCO2(NO)_J - redCO2$$

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

$$exeCO2(M)_Y = \sum_{I=2025}^{Y} (dCO2(M)_I - ccCO2(M)_{I,Y}) - \sum_{J=2030}^{Y-1} exeCO2(M)_J$$

For the reporting period of the year 2040:

$$exeCO2(NO)_{2040} = (CO2(NO)_{2040} - T(NO)_{2040}) \times V_{2040} + \sum_{I=2025}^{2039} (dCO2(NO)_I - ccCO2(NO)_{I,Y}) - \sum_{J=2025}^{2039} exeCO2(NO)_J - redCO$$

$$exeCO2(M)_{2040} = (CO2(M)_{2040} - T(M)_{2040}) \times V_{2040} + \sum_{I=2025}^{2039} (dCO2(M)_I - ccCO2(M)_{I,Y}) - \sum_{J=2030}^{2039} exeCO2(M)_J$$

For the reporting periods of the years Y > 2040:

$$exeCO2(NO)_Y = (CO2(NO)_Y - T(NO)_Y) \times V_Y$$

$$exeCO2(M)_Y = (CO2(M)_Y - T(M)_Y) \times V_Y$$

If the previous calculations result in a negative value for $exeCO2(X)_Y$, the latter shall be set to 0.

Where,

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

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

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

$\sum_{I=2025}^{2039}$ is the sum of the *reporting periods of the years I from 2025 to 2039*;

$\sum_{J=2030}^{Y-1}$ is the sum of the reporting periods of the years J from 2030 to the year (Y-1);

$dCO2(X)_Y$ is the emission debts for the *reporting period of the* year Y as determined in accordance with point 5.2 (X = NO, M);

$cCO2(X)_Y$ is the emission credits for the *reporting period of the* year Y as determined in accordance with point 5.2 (X = NO, M);

$ccCO2(X)_{I,Y}$ are the emission credits for the reporting period of the year *I* corrected for the part that has expired after **7** years, as determined in accordance with point 6.1 (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 *reporting period of the* year 2025 as determined in accordance with point 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 CO_2 emissions of the reporting period of the year Y as referred to in Article 8(2) shall be:

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

6.1. Determination of $ccCO2(X)_{Y,I}$

$$ccCO2(X)_{I,Y} = cCO2(X)_I \qquad \textbf{for } Y \leq I + 7;$$

$$ccCO2(X)_{I,Y} = \min\left(cCO2(X)_I\ ;\ \sum_{K=2025}^{I+7} dCO2(X)_K - \sum_{K=2025}^{I-1} ccCO2(X)_{K,Y}\right) \qquad \textbf{for } Y > I + 7.\text{'};$$

(2) Annex II is replaced by the following:

‘ANNEX II

Adjustment procedures referred to in Article 11

1. Adjustment of reference CO_2 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_2 emissions referred to in point 3.1.2 of Annex I shall be recalculated**.**

For that purpose, the CO_2 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 of all representative heavy-duty vehicles *r* for the vehicle sub-group *sg*;
sg	is the vehicle sub-group to which the heavy-duty vehicle *v* belongs;
$s_{r,sg}$	is the statistical weight of the representative heavy-duty vehicle *r* in the vehicle sub-group *sg;*
$CO2(RP)_{v,mp}$	is the specific CO_2 emissions 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;
$CO2(RP)_{r,mp}$	is the specific CO_2 emissions of the representative heavy-duty 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_2 emissions of the representative heavy-duty vehicle *r*, as determined on mission profile *mp* in accordance with Regulation (EC) No 595/2009 and its implementing measures pursuant to the amendments referred to in Article 11(2), point (a), of this Regulation;

$CO2p(RP)_{v,mp}$ is the specific CO_2 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_2 emissions of the primary vehicle of the representative heavy-duty 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_2 emissions of the primary vehicle of the representative heavy-duty vehicle *r*, as determined on mission profile *mp* in accordance with Regulation (EC) No 595/2009 and its implementing measures pursuant to the amendments referred to in Article 11(2), point (a), of this Regulation.

The specific CO_2 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 heavy-duty vehicles shall be defined in accordance with the methodology referred to in Article 11(3).

2. Application of the adjusted reference CO_2 emissions pursuant to Article 11(2)

If in the reporting period of the year Y the specific CO_2 emissions of some new heavy-duty vehicles of a manufacturer have been determined with amendments referred to in Article 11(2), the reference CO_2 emissions rCO_{sg} of the vehicle sub-group *sg* used in points 4 and 5.1 of Annex I shall be calculated as follows:

$$rCO2_{sg} = \sum_{,i} V_{sg,i}/V_{sg} \text{ x } rCO2_{sg,,i}$$

where:

$\sum_{,i}$ is the sum of

- for i = **0**: the non-amended procedure for determining the CO_2 emissions, for which the initial reference CO_2 emissions without adjustments are applicable, and
- for i ≥ 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_2 emissions of which have been determined with the amendment *i*;

$rCO2_{sg,i}$ are:

- for i = 0: the non-adjusted reference CO_2 emissions
- for i ≥ 1: the reference CO_2 emissions that have been determined for the vehicle sub-group *sg* with the amendment *i*.'.

ANNEX II

'ANNEX III

Normalisation of specific CO_2 emissions of new heavy-duty vehicles as referred to in Article 4

1. Normalisation of specific CO_2 emissions

For the purposes of the calculation in point 2.1 of Annex I, the values of CO_2 emissions $CO2_{v,mp}$ of heavy-duty vehicles are normalised as follow:

$$CO2_{v,mp} = reportCO2_{v,mp} + \Delta CO2_{v,mp}(m) + \Delta CO2\mathrm{cv}_{v,mp}$$

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

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

The values of CO_2 emissions $CO2p_{v,mp}$ of primary vehicles are normalised in accordance with the same methodology, using the parameters for primary vehicles.

Where

$CO2_{v,mp}$ are the normalised CO_2 emissions of the heavy-duty vehicle *v* determined for a mission profile *mp* that are to be considered in the calculation of point 2.1 of Annex I;

$reportCO2_{v,mp}$ are the CO_2 emissions in g/km of ***a*** new heavy-duty vehicle *v* determined for a mission profile *mp* and reported pursuant to Articles 13a and 13b;

$\Delta CO2_{v,mp}(m)$ is to be determined in accordance with point 3;

$\Delta CO2\mathrm{cv}_{v,mp}$ is to be determined in accordance with point 4;

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

$PL_{sg,mp}$ is the payload for the vehicle 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 the heavy-duty vehicle *v* in the mission profile *mp*, as determined from the data reported pursuant to Articles 13a and 13b;

$PM_{sg,mp}$ is the passenger mass for the vehicle 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 heavy-duty vehicle *v* applied in accordance with point 2.

2. Curb Weight normalisation

Since the transport utility of a heavy-duty vehicle increases with its technically permissible maximum payload or passenger number, but for technical reasons higher values for those parameters are correlated with higher curb weights and therefore higher CO_2 emissions, the following correction of the curb weight of a heavy-duty vehicle *v* in the vehicle sub-group *sg* for the purpose of the normalisation of its specific CO_2 emissions in accordance with point 1 shall be applied:

$cCW_v = a_{sg} \cdot (maxPL_{sg} - maxPL_v)$ for heavy-duty vehicles of category N [redacted] ;

cCWv = 0 ***for heavy-duty vehicles of category O;***

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

Where

a_{sg} is a linear coefficient determined in accordance with point 2.1 for the reporting period of the year in which the heavy-duty vehicle *v* was registered;

$maxPL_v$ is the technically permissible maximum payload of the heavy-duty vehicle *v* as determined from the data reported pursuant to Articles 13a and 13b;

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

$maxPL_{sg}$ is the technically permissible maximum payload of the vehicle sub-group sg determined in accordance with point 2.5 of Annex I;

$maxPN_{sg}$ is the technically permissible maximum passenger number of the vehicle sub-group sg determined in accordance with 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 $maxPL_v$ (▌heavy-duty vehicles of category N) and $maxPN_v$ (heavy-duty vehicles of category M), considering all newly registered heavy-duty vehicles v in the vehicle sub-group sg:

$CW_v \approx a_{sg} \cdot maxPL_v + b_{sg}$ for heavy-duty vehicles of category N▌;

$CW_v \approx a_{sg} \cdot maxPN_v + b_{sg}$ for heavy-duty vehicles of category M.

Where

CW_v is the curb weight of the heavy-duty vehicle v, as determined from the data reported pursuant to Articles 13a and 13b; if no precise value is available, it may be approximated by the corrected actual mass of the heavy-duty vehicle v;

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

$maxPN_v$ is the technically permissible maximum passenger number of the heavy-duty vehicle v as determined from the data reported pursuant to Articles 13a and 13b.

3. Change of CO_2 emissions for change in total vehicle mass

The ex-post change of CO_2 emissions of a heavy-duty 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 heavy-duty vehicle for the determination of CO_2 emissions is defined by the following linear approximation:

$$\Delta CO2_{v,mp}(m) = m \cdot (CO2_{v,r} - CO2_{v,l}) / (Mr - Ml)$$

Where:

m	is the change of total mass attributed to the heavy-duty vehicle *v* for the determination of its CO_2 emissions;
$CO2_{v,r}$	are the CO_2 emissions of the heavy-duty vehicle *v* in g/km, without the change of mass, determined for the same mission profile *mp*, representative loading conditions;
$CO2_{v,l}$	are the CO_2 emissions of the heavy-duty 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

Heavy-duty vehicles of category O within the same vehicle sub-group have different cargo volumes. Since the transport utility of a heavy-duty vehicle increases with the cargo volume, but for technical reasons such increase is also correlated with higher CO_2 emissions, the following correction of the CO_2 emissions of a heavy-duty vehicle *v* in the vehicle sub-group *sg* shall be applied:

$$\Delta CO2cv_{v,mp} = a_{sg,mp} \cdot (CV_{sg} - CV_v)$$

Where

$a_{sg,mp}$ is a linear coefficient determined in accordance with point 4.1 for the reporting period of the year in which the heavy-duty vehicle v was registered;

CV_v is the cargo volume of the heavy-duty vehicle v as determined from the data reported pursuant to Articles 13a and 13b;

CV_{sg} is the cargo volume of the vehicle sub-group sg determined in accordance with point 2.5 of Annex I.

For heavy-duty vehicles of categories N and M, the correction of CO_2 emissions $\Delta CO2\mathrm{cv}_{v,mp}$ 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 $[reportCO2_{v,mp} + \Delta CO2_{v,mp}(m)]$ with the values of CV_v, considering all newly registered heavy-duty vehicles v in the vehicle sub-group sg:

$$reportCO2_{v,mp} + \Delta CO2_{v,mp}(m) \approx a_{sg,mp} \cdot CV_v + b_{sg,mp}$$

Where

CV_v is the cargo volume of the heavy-duty vehicle v as determined from the data reported pursuant to Articles 13a and 13b;

$reportCO2_{v,mp}$, $\Delta CO2_{v,mp}(m)$ are as defined in point 1.

ANNEX IV

Rules on data to be monitored and reported pursuant to 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 Appendix 2 of Annex I to Regulation (EU) 2018/858;

(e) in the case of the heavy-duty vehicles referred to in Article 2(1), 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 heavy-duty 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 point 2 of Annex VIII to Commission Implementing Regulation (EU) 2020/683[24];

(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 TPMLM, as specified in entry 16.1 of the certificate of conformity;

[24] 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, 26.5.2020, p. 1).

(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 heavy-duty vehicles registered until 30 June 2025 Member States may report only the first 8 characters of the cryptographic hash;

(l) the specific CO_2 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) the TPMLM of the combination for a heavy-duty vehicle of category N3 in an extra heavy combination (EHC) referred to in Article 3, point (25), as specified in entry 16.4 of the certificate of conformity or individual vehicle approval certificate;

(p) for special purpose vehicles, their designation as specified in entry 51 of the certificate of conformity;

(q) the number of powered axles, as specified in entry 3 of the certificate of conformity;

(r) for heavy-duty vehicles approved under Article 2(3), point (b), of Regulation (EU) 2018/858, the information that the heavy-duty vehicle was designed and constructed or adapted for use by civil protection services, fire services and forces responsible for maintaining public order;

(s) for heavy-duty vehicles registered for use by civil protection services, fire services or forces responsible for maintaining public order ▌, the confirmation that the vehicle is registered for use by civil protection services, fire services or forces responsible for maintaining public order ▌ and that it fulfils the conditions set out in Article 3a(5) of this Regulation. For all heavy-duty vehicles, including individually approved heavy-duty 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 Implementing Regulation (EU) 2020/683▌ 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 of this Regulation, each reporter shall report the following data for those heavy-duty vehicles for which it is obliged to produce a Manufacturer's Records File (MRF) or Vehicle Information File (VIF) in accordance with Regulation (EU) 2017/2400 and Implementing Regulation (EU) 2022/1362 .

For heavy-duty 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 a heavy-duty vehicle which would otherwise be exempted from the obligations laid down in Article 3a is not exempted from those obligations.

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

(1) Article 3, point (29), of Regulation (EU) 2017/2400.

(2) Article 3, point (31), of Regulation (EU) 2017/2400

(3) Article 3, point (4a), of Regulation (EU) 2017/2400

(4) Manufacturer's record file (MRF), Article 3, point (23), of Regulation (EU) 2017/2400.

(5) Vehicle information file (VIF), Article 3, point (25), of Regulation (EU) 2017/2400

(6) Article 2, point (5), of Implementing Regulation (EU) 2022/1362

(7) Manufacturer's record file (MRF), Article 2, point (9), of Implementing Regulation (EU) 2022/1362

(8) Article 8(6) and (7) of Implementing Regulation (EU) 2022/1362

***Additional Information:**

No	Monitoring parameter	Source	Vehicle categories to which the monitoring parameter applies
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	Point 1 of the model of a	Category N;

	tyre manufacturer	certificate of a component, separate technical unit or system of Appendix 1 to Annex X to Regulation (EU) 2017/2400	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 licence to operate the simulation tool		All
75	CO_2 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 Commission Regulation (EU) No 582/2011[25], 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	CO_2 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;

[25] Commission Regulation (EU) No 582/2011 of 25 May 2011 implementing and amending Regulation (EC) No 595/2009 of the European Parliament and of the Council with respect to emissions from heavy duty vehicles (Euro VI) and amending Annexes I and III to Directive 2007/46/EC of the European Parliament and of the Council (OJ L 167, 25.6.2011, p. 1).

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 heavy-duty 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 heavy-duty 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), point (a), of Regulation (EU) 2017/2400 in its graphical user interface (GUI) version	***all***

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

For the purpose of making the CdxA value specified in data entry 23 publicly available 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 [m^2]**	
	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

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 European Environment Agency.

The contact point shall notify the Commission and the European Environment 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, without delay, report to the Commission the following information:

(a) the manufacturer's name as 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[26] 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 European Environment Agency.

They shall notify the Commission without delay of any changes to that information.

[26] 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).

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 European Environment Agency.

The contact point shall notify the Commission and the European Environment Agency when the data are transmitted by email to the addresses referred to in point 1.1.

3. DATA PROCESSING

3.1. The European Environment 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 a manufacturer identifies errors in the data submitted, it shall without delay notify the Commission and the European Environment Agency by submitting an error notification report to the European Environment Agency and by email to the addresses referred to in point 1.1.

3.4. The Commission shall, with the support of the European Environment Agency, verify the notified errors and, where appropriate, correct the data in the register.

3.5. The Commission, with the support of the European Environment 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	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'.