

REGULATION (EU) 2024/...
OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of ...

amending Regulation (EU) 2019/1242 as regards strengthening the CO₂ emission performance standards for new heavy-duty vehicles and integrating reporting obligations, and repealing Regulation (EU) 2018/956, and amending Regulation (EU) 2018/858

(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 Committee¹,

Having regard to the opinion of the Committee of the Regions²,

Acting in accordance with the ordinary legislative procedure³,

¹ OJ C [...], [...], p. [...].

² OJ C [...], [...], p. [...].

³ Position of the European Parliament of ... (not yet published in the Official Journal) and decision of the Council of


Whereas:

- (1) Tackling climate and environmental-related challenges and reaching the objectives of the Paris Agreement, adopted in December 2015 under the United Nations Framework Convention on Climate Change (UNFCCC), are at the core of the **Commission** Communication on the “European Green Deal”¹. 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 the Russian military aggression against Ukraine*.
- (2) The European Green Deal combines a comprehensive set of mutually reinforcing measures and initiatives aimed at achieving climate neutrality in the Union by 2050, and sets out a new growth strategy that aims to transform the Union into a fair and prosperous society with a modern, resource-efficient and competitive economy, where economic growth is decoupled from resource use. It also aims to protect, conserve and enhance the Union's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts. At the same time, *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.

- (3) *Following the adoption of all the essential elements of the ‘Fit for 55’ legislative package, in October 2023 the Union submitted an updated nationally determined contribution (NDC) of the EU and its member states to the United Nations Framework Convention on Climate Change (UNFCCC), confirming that the EU will cut its net GHG emissions by at least 55% by 2030 compared to 1990 levels.*
- (4) In Regulation (EU) 2021/1119 of the European Parliament and of the Council⁴, the Union has enshrined the target of economy-wide climate neutrality *within the Union at the latest by 2050 and the aim of achieving negative emissions thereafter in a Union legislative act. Moreover*, that Regulation ■ establishes a binding Union *target of a domestic reduction* of net greenhouse gas emissions (emissions after deduction of removals) of at least 55 % below 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. *The Commission Sustainable and Smart Mobility Strategy sets out a roadmap for a sustainable and smart future for European transport, with an action plan towards an objective to deliver 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 Union's total greenhouse gas emissions.*
- (6) The “Fit for 55” legislative package, *proposed* by the ■ Commission in 2021, aims to implement the 2030 greenhouse gas emissions reduction target. It covers a range of policy areas. The revision of Regulation (EU) 2019/1242 of the European Parliament and of the Council⁵ is an integral part of that *legislative* package.

⁴ 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).

⁵ Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO₂ emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European

- (7) *In its communication of 18 May 2022, entitled “REPowerEU Plan”, the Commission* outlined a plan to make the Union independent from Russian fossil fuels well before the end of this decade. The Communication highlights the importance, among others, of further increasing the efficiency *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 % *below 1990 levels by 2030* and in conformity with the energy efficiency first principle, it is necessary to strengthen the *CO₂ 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 sector* to contribute to achieving the climate neutrality objective by 2050.
- (9) The strengthened CO₂ *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*.

Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202).

- (10) ■ New strengthened CO₂ ***emissions*** reduction targets should be set for new heavy-duty vehicles for the period 2030 onwards. Those targets should be set at a level that will deliver a strong signal to accelerate the uptake of zero-emission ***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 reduce the running costs for transport companies, while ensuring the Union fulfils its climate and air pollution objectives.***
- (10a) ***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 air pollution in cities. The accelerated roll-out of zero-emission vehicles, through strengthened CO₂ emission reduction requirements, will contribute to alleviating the urban air pollution problem.***

- (11) The *Commission Communication of 5 May 2021, entitled “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 this 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 of social partners including by Member States. *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. This 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*⁶ (the “Social Climate Fund”) to assist micro-enterprises in ■ purchasing ■ zero-emission trucks and lorries. *Particular attention should be also given to the impact that this transition will have on SMEs along the supply chain.*

The *Commission Communication of 1 February 2023, entitled “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.

⁶ *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 should be supported to participate in these learning activities. Member States are encouraged to ramp up investments in re- and upskilling and map out and analyse the predicted changes in the job market.

- (12) *Together with initiatives to accelerate a modal shift towards more sustainable transport modes, the strengthening of the CO₂ emission reduction requirements for heavy-duty vehicles and the rolling-out of the necessary recharging and refuelling infrastructure will play a key role in reducing the emissions of the heavy-duty vehicles sector. The Union fleet-wide CO₂ emissions reduction targets laid out in this Regulation are complemented by the recharging and refuelling infrastructure requirements set out in Regulation (EU) 2023/... of the European Parliament and of the Council on the deployment of alternative fuel infrastructure⁷.*

EU 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 public, such as in private depots and at logistics centres to ensure overnight and destination charging. Public authorities 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.

⁷ *Regulation (EU) 2023/... of the European Parliament and of the Council on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU (OJ...).*

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

- (12a) *The Sustainable Transport Forum was set up by the European Commission in 2015, following the adoption of Directive 2014/94/EU on the deployment of alternative fuels infrastructure. 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 should ensure that the Forum supports the effective and cost-efficient roll-out of the recharging and refuelling infrastructure needed to meet the strengthened CO₂ emission reduction requirements for heavy-duty vehicles, and that it informs the review referred to in Article 24(2) of Regulation (EU) 2023/1804 on the deployment of alternative fuels infrastructure, so that the targets set out in that Regulation are aligned with the ambition of this Regulation.*
- (13) 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 CO₂ 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 circulating on the road *and* electricity consumption in the sector will remain limited. Therefore the related impact on the electricity grid will remain limited as well.

- (13a) *While the strengthened CO₂ reduction targets will accelerate the uptake of zero-emission vehicles, a significant part of the stock of heavy-duty vehicles on the roads will remain internal combustion engine vehicles. In order for this 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 the Renewable Energy Directive and the EU Emission Trading System, 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 the 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.*
- (14) Manufacturers should be provided with sufficient flexibility in 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.
- (15) Due to the heterogeneous structure of the **entire** truck fleet, it is not possible to fully predict whether **■** technological developments will be quick enough to ensure that zero-emission tailpipe technology is a viable choice **for all niche uses. This could include** vehicles **■** for critical security and safety applications that cannot be fulfilled by zero-emission tailpipe technologies. **Such** vehicles in question should constitute a limited share of the entire heavy-duty vehicle fleet. **The review should assess the possibility of applying measures to reduce CO₂ emissions from such vehicles.**

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- (16a) *For their public procurement procedures covered by article 3c, 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 non-GPA countries that have not concluded a free trade agreement including rules on public procurement with the Union. Such criteria will play an important role in fostering the supply of zero emission buses by the European industry, ensure sustainable and resilient supply chains for urban buses as well as reinforce security of supply within the Union.*
- (16b) *Contracting authorities and contracting entities are encouraged to use an environmental sustainability criterion as awarded or technical specification criterion for their public procurement procedures covered by article 3c. Without prejudice to Union legislation applicable to a specific technology, including under the [Ecodesign Regulation (EU) 2024/... of the European Parliament and of the Council of ... establishing a framework for setting ecodesign requirements for sustainable products and repealing Directive 2009/125/EC] and 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, and unless otherwise indicated therein, when evaluating the environmental sustainability of urban buses procured on the basis of this Regulation, contracting authorities and contracting entities may take into account various elements with an impact on the climate and the environment. These may 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 impacts; the amounts of waste generated.*

- (17) With the stricter Union fleet-wide *CO₂ 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 ('ZLEV') would no longer serve its original purpose and would risk undermining the effectiveness of Regulation (EU) 2019/1242. The ZLEV incentive mechanism should therefore be removed as *from* 2030.
- (18) The possibility *to assign the revenues* from the excess *CO₂ 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 this would significantly increase the administrative burden, *without* directly *benefitting* the automotive sector in its transition. *Revenues* from the excess *CO₂ 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.
- (19) 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.
- (20) Regulation (EU) 2019/1242 should be amended in order to cover the same scope as Regulation (EU) 2018/956 of the European Parliament and of the Council⁸.
- (21) For *heavy-duty* vehicles *that* are not in the scope of the automotive type-approval legislation *of the Union*, such as agricultural and forestry tractors, *heavy-duty* vehicles designed and constructed for the use by *national defence, including* armed forces, and track-laying vehicles, the CO₂ emissions are not determined and therefore *those heavy-duty* vehicles *are not required* to meet the *CO₂ emissions reduction* targets set in this Regulation.

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

⁸ Regulation (EU) 2018/956 of the European Parliament and of the Council of 28 June 2018 on the monitoring and reporting of CO₂ emissions from and fuel consumption of new heavy-duty vehicles (OJ L 173, 9.7.2018, p.1).

■ or urgent medical care *services, and* that are voluntarily type-approved should also be exempted from *the obligation* to meet the CO₂ *emissions reduction* targets *set in* this Regulation in order not to create an incentive to no longer *voluntarily* type-approve such *heavy-duty* vehicles ■, which would have negative safety and environmental implications, unless the manufacturer asks for *those heavy-duty* vehicles *to be included*.

Member States should also be entitled to *exempt from the obligation* to meet the CO₂ *emissions reduction* targets *set in this Regulation heavy-duty* vehicles, not specifically designed, but 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 army forces, by confirming that such exemption *is in the public interest. Member States should also be entitled to exempt vehicles registered for the armed services from all provisions set in this Regulation.*

As for certain *heavy-duty* vehicle groups ■ which are type-approved, *but for which* CO₂ *emissions reduction* are not determined yet for technical reasons, *those heavy-duty* vehicles *are not required* to meet the CO₂ *emissions reduction* targets set *in* this Regulation. *Those are*, for example, special purpose vehicles, such as mobile cranes, carriers of hydraulic multi-equipment or exceptional load transport vehicles, off-road vehicles, such as certain *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 4 axles or more than 2 driven axles, small buses with a *technically permissible* maximum *laden* mass (*TPMLM*) $\leq 7,5$ tonnes, and small lorries with a *TPMLM* ≤ 5 tonnes. *The Commission should investigate the appropriateness of the determination of CO₂ emissions of small lorries with a TPMLM ≤ 5 tonnes according to the provisions of Regulation 2017/2400 (VECTO simulations), also in consideration of Regulation 2017/1151.*

- (22) 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 Council⁹ and Commission Regulation (EU) 2017/2400¹⁰.

- (23) For the purposes of the newly introduced transfer of **heavy-duty** vehicles between manufacturers and of establishing an exemption for manufacturers producing only few **heavy-duty** vehicles, a definition of the term of ‘group of connected entities’ should be added to Regulation (EU) 2019/1242, in substance following the terminology used in Regulation (EU) 2019/631 of the European Parliament and of the Council¹¹ for light-duty vehicles.
- (24) For defining the obligations of individual manufacturers, Union fleet-wide CO₂ **emissions** reduction targets for the new heavy-duty vehicle fleet should be translated into specific **emissions** reduction targets for **vehicle** subgroups that should be defined by the technical characteristics of the **heavy-duty** vehicles they comprise.
- (25) Since the CO₂ emissions related to trailers have a strong impact on the overall CO₂ emissions and energy consumption of **heavy-duty** motor vehicles, respective CO₂ **emissions reduction targets** should also be **set for trailers**.
- (25a) *CO₂ emissions from vocational vehicles, such as garbage trucks, tipper trucks or concrete mixer trucks, are already certified under VECTO, monitored and reported by vehicle manufacturers and Member States. CO₂ emissions from vocational vehicles represent around 2% of heavy-duty vehicles emissions and around 4% of sales. As they mostly operate in cities, vocational vehicles also impact urban air quality. CO₂ emissions reduction targets should therefore also apply to those*

⁹ 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.

¹⁰ 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 CO₂ 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).

¹¹ Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO₂ 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).

vehicles as follows. Until 2029 they should continue to be exempted from the calculation of average specific CO₂ emissions of manufacturers. For the period 2030-2034 only zero-emission vocational vehicles should be accounted for these calculations and from 2035, all vocational vehicles should be accounted for these calculations.

- (25b) *In order to facilitate the development and enable the widespread use of trailers equipped with CO₂ emission reduction technology, it is imperative to promptly update and expand the approval framework for such technologies, in particular for electrified trailers, by adapting the Regulation (EU) 2018/858 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.*
- (26) *In 2022, zero-emission buses already represented around a quarter of all buses sold in the Union, with some Member States reaching much higher shares.* Due to the technical readiness of the sub-sector and the need to improve air quality in cities, a mandatory minimum share of new zero-emission urban buses should be set.

- (27) A mandatory minimum share of zero-emission urban buses should reflect the societal need for affordable public transport, including in rural areas. The increased supply of zero-emission urban buses that result from such a mandatory minimum share should have a positive effect on purchasing cost, both in terms of upfront purchase price and the total cost of ownership of zero-emission urban buses, reflecting fossil fuel savings resulting from *the operation of such urban buses*. Joint procurement of urban buses building on the Clean Bus Platform can bring *down* the purchasing 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 *CO₂ 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(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 of zero emission vehicles by public authorities, to support the achievement of the Union's climate neutrality objective.

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- (29) 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.
- (30) 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.
- (30a) *Retrofitting to zero-emission vehicles consists in converting an internal combustion engine or vehicle into a zero-emission one. It has environmental benefits stemming from the avoided 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*

retrofitted to zero-emission 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.

- (30b) *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. Therefore, the Commission should analyse the potential need and impact of initiatives to increase the share of zero-emission heavy-duty motor vehicles owned or leased by large fleet operators.*
- (31) In order to avoid disproportionately high compliance costs and in order to reduce the administrative burden, manufacturers *that produce few heavy-duty* vehicles fulfilling certain legal requirements should be *exempt from the obligation to comply* with CO₂ *emissions reduction* targets. As they are required to comply with the reporting obligations of Regulation (EU) 2019/1242, there is an appropriate control mechanism for those manufacturers.
- (32) The existing system of multi-annual emission credits and emission debts should be extended to 2039 as *CO₂ emissions* reduction targets *continue to be strengthened* beyond 2030 until 2040 and require forward-looking technical developments of manufacturers during that period. *Nevertheless, manufacturers should clear all remaining emission debts in the years 2029, 2034 and 2039. Emission credits that are not used within 7 years after they have been acquired should automatically expire.*

- (33) Regulation (EU) 2019/1242 should **clearly stipulate** for each vehicle category who is the manufacturer to whom a **heavy-duty** vehicle should be attributed, thereby specifically taking account of the different constellations for **heavy-duty** vehicles of category M.
- (34) The rules on the verification of the monitoring data should also cover **the potential** ex post **correction** of errors in such reported data and how the Commission should handle such corrections for implementing the **Union fleet-wide CO₂ emissions reduction** targets.
- (35) The assessment of the reference CO₂ emissions should be amended to also cover the vehicle subgroups newly included in the scope of Regulation 2019/1242.
- (36) Monitoring and reporting by manufacturers and Member States is an essential precondition for the implementation of Regulation (EU) 2019/1242. **Incorporating** Regulation (EU) 2018/956 into Regulation (EU) 2019/1242 should produce synergies and allow for interpretation of the provisions taking into account the objectives of both Regulations.
- (37) **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.
- (38) Taking account of the fact that the determination **of CO₂ emissions** will no longer be carried out by manufacturers alone, **the obligation to report CO₂ emissions** and other technical data of the **heavy-duty** vehicles should be extended beyond manufacturers to those entities which perform the determination of the **heavy-duty** vehicles under Regulation (EU) 2017/2400 and Commission Implementing Regulation (EU) 2022/1362¹². The data to be reported should comprise the manufacturer's record file.

¹² 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 CO₂ 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).

- (39) 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 amendments of the underlying type-approval legislation, 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 CO₂ emissions ***reduction targets***, to ensure the availability of data on new and advanced CO₂ 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.
- (40) 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 defining vehicles sub-groups ***including adding a sub-group for Extra Heavy Combination (EHC) lorry***, defining vocational vehicles, for the operational ranges of different powertrain technologies, the list and weight of mission profiles, the payloads, passenger numbers, passenger masses, technically permissible maximum payloads, technically permissible maximum passenger number and cargo volumes of vehicle sub-groups and annual mileages values, amending the data requirements and the monitoring and reporting procedure laid down in ***the*** Annexes to this Regulation, ***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.

(41) 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 be concluded under the rules applicable at the beginning of that reporting period, including all after-processing of the data collected. Accordingly, this Regulation should be applied from the beginning of the following reporting period.

(41a) *Since the objectives of this Regulation, namely to promote reductions of greenhouse gas emissions in a cost-effective and economically efficient way in a manner commensurate with the economy-wide net greenhouse gas emission reduction target for 2030 through amended Union fleet-wide CO₂ emissions reduction targets for heavy-duty vehicles, cannot be sufficiently achieved by the Member States but can rather, by reason of 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.*

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

HAVE ADOPTED THIS REGULATION:

Article 1
Amendments to Regulation (EU) 2019/1242

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

- (1) Article 1 is replaced by the following:

‘Article 1

Subject matter and objective

1. This Regulation *sets* CO₂ 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, Member State’s targets* of reducing *their* greenhouse gas emissions, as laid down in Regulation (EU) 2023/857¹³, *to* the objectives of the Paris Agreement and to *ensuring* the proper functioning of the internal market.
2. This Regulation also lays down ■ requirements for the reporting of CO₂ emissions from and fuel consumption of new heavy-duty vehicles registered in the Union.’;

¹³ *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. 1-14).*

(2) Article 2 is amended as follows:

(a) paragraph 1 is replaced by the following:

‘1. This Regulation shall apply to new **heavy-duty** 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 that belong to any of** the following **vehicle** categories:

(a) M₂ and M₃;

(b) N₁, **N₂ and N₃, provided that the vehicles** do not fall under Regulation (EU) 2019/631 ■ ;

(c) O₃ and O₄.

For the purposes of this Regulation, **the vehicles referred to in 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 amended as follows:

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

‘2. **For the purposes of this Regulation, heavy-duty** vehicles referred to in paragraph 1 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.’;

- (ii) the following subparagraph is added:

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

■

- (3) Article 3 is amended as follows:

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

‘(1) ‘reference CO₂ emissions’ means the average of the specific CO₂ 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 certain year with respect to which the regulatory **CO₂ emissions** reduction obligations for a certain vehicle sub-group are specified under this Regulation;’;

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

‘(5) ‘specific CO₂ emissions target’ means the CO₂ emissions target of an individual manufacturer determined annually for the preceding reporting period in accordance with point 4 of Annex I;’;

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

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

- (e) point (10) is *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 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 ***3gCO₂/(t.km) or 1gCO₂/(p.km)*** 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 emitting not more than 1 g/kWh of CO₂ as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures or emitting not more than 1 g/km of CO₂ 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 CO₂ emissions have been determined ***pursuant to*** Regulation (EU) 2017/2400;
- (c) a trailer equipped with a device that actively supports its propulsion and has no internal combustion engine or has an internal combustion engine emitting less than ***1 g CO₂/kWh*** as determined in accordance with Regulation (EC) No 595/2009 ■ and its implementing measures or ***in accordance with*** UNECE Regulation (EC) No 49.’;

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

‘(12) ‘low-emission heavy-duty vehicle’ means a heavy-duty vehicle, other than a zero-emission heavy-duty vehicle, with specific CO₂ emissions of less than half of the reference CO₂ emissions of all vehicles in the vehicle subgroup to which the heavy-duty vehicle belongs, as determined in accordance with point 2.3.4 of Annex I;’;

- (i) the following points ■ are added:

‘(15) ‘primary vehicle’ means a primary vehicle as defined in Article 3, point (22), of Regulation (EU) 2017/2400;

(16) ‘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;

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

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

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

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

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

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

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

of Directive 2014/25/EU, **and** ‘concessions’ as defined in Article 5, point (1) of Directive 2014/23/EU’;

23b. ‘Extra Heavy Combination lorry’ or ‘EHC lorry’ means a category N3 vehicle suitable for usage 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 mass of the combination of more than 60 tonnes;’;

(j) the following paragraph is added:

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

‘Connected undertaking’ means:

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

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

(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 **have** directly or indirectly ■, 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

CO₂ emissions reduction targets

1. The average CO₂ 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 CO₂ emissions of the reporting period of the year 2019:

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

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

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

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

2. **The vehicle sub-groups shall contribute** to these CO₂ **emissions reduction** targets **referred to in paragraph 1, in accordance with** point 4.3. of Annex I.

3. The CO₂ 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 CO₂ 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 CO₂**

emissions and targets when reporting the heavy-duty vehicle in accordance with Part B of Annex IV to this Regulation.

5. Heavy-duty vehicles other than those referred to in paragraph 4 of this Article 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 CO₂ emissions reduction targets set out in paragraphs 1 to 3 of this Article, if a Member State so indicates in the registration and reporting process, thereby confirming in the data reported in accordance with Part A of Annex IV that the purpose of the heavy-duty vehicle cannot be equally served by a zero-emission heavy-duty vehicle and it is thus 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 3aa

Additional measures to support the transition to zero-emission vehicles in the Union market

By 30 June 2025, the Commission shall submit to the European Parliament and Council a report considering the need to facilitate the market uptake of heavy-duty vehicles, which are retrofitted into zero-emission vehicles, in the Union's market including through harmonised rules. This report shall include an analysis of the options and their impacts. Where appropriate, the analysis shall be accompanied with a legislative initiative or other action.;

Article 3ab

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

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

Article 3b

*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 **■** .;

-
- 2a. *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 heavy-*

duty vehicles referred to in this Article, 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).

2b. The Commission is empowered to adopt delegated acts in accordance with Article 17 to supplement this Regulation with common technical specifications, including standards, regarding the safe and secure sharing and use of the data generated in relation to the use of heavy-duty vehicles referred to in this Article.;

Article 3c

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

1. Contracting authorities or contracting entities shall base the award of public *supply* contracts for the purchase, *lease, rent or hire-purchase of urban buses* referred to in Article 3b *as well as public services contracts having as their main subject matter the use of such vehicles on the most economically advantageous tender which shall include the best price-quality ratio.*

2. *Contracting authorities or contracting entities shall use at least two of the following criteria as technical specifications or as award criteria, including at least one relating to the tender's contribution to the security of supply as set out in the letters a to d, depending on the market situation and in compliance with Directives 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 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. *This criterion shall only apply to products of tenders originating in non-GPA countries that have not concluded a free trade agreement including rules on public procurement with the EU;*

■

(b) the *current and estimated* availability of essential spare parts for the functioning of the equipment subject to 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 EU legislation.*

This 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.'*;

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

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

(5a) *in Article 4, first paragraph, the following point (c) is added:*

‘(c) in the reporting period of the years between 2030 and 2034 new zero-emission vocational vehicles in accordance with point 1.1.1 of Annex 1.’;

(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 CO₂ 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 CO₂ 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, 10-LH, shall reduce the average specific CO₂ emissions of a manufacturer by a maximum of 1,5 %.’;

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

‘Article 6

Specific CO₂ 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 CO₂ 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 CO₂ emissions of manufacturers in accordance with Article 4 and point 2.2 of Annex I, individual *heavy-duty* vehicles may be transferred between manufacturers, subject to the following conditions:
 - (a) for all transfers: the request must be jointly submitted by the transferring and the receiving manufacturer;
 - (b) for the transfer of *heavy-duty* vehicles other than zero-emission *heavy-duty* vehicles, the transferring and the receiving manufacturer *shall* 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 *shall* not exceed 5 % of all its new heavy-duty vehicles registered in a given reporting period.

The manufacturers shall communicate the transfer requests to the Commission using the electronic tools provided by the Commission.
2. Where the Commission considers that the conditions *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 will 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 less than 100 new heavy-duty vehicles of a manufacturer were registered in a given reporting period, the average specific CO₂ emissions as provided for in Article 4 and *in* point 2.7 of Annex I and the specific CO₂ emissions targets as provided for in Article 6 and *in* point 4.1 of Annex I shall be set *at* “0” in *that* reporting period.
2. The values of the average specific CO₂ emissions and *of the* specific CO₂ 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) upon request of the manufacturer;
 - (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 including a manufacturer to which points (a) or (b) apply*.
4. Manufacturers, *which are not* part of a group *within* the meaning of paragraph 3, point (c), shall inform the Commission if they registered less 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 that fulfil the conditions of *that* exemption laid down in paragraph 1.
 6. ■ Manufacturers shall *inform the Commission under paragraphs 4 and 5* 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 CO₂ 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 CO₂ emissions target multiplied by the number of heavy-duty vehicles of the manufacturer in that period (‘emission debt limit’).’;

- (d) in paragraph 1, the fourth subparagraph is replaced by the following:

‘Emission credits and emission debts acquired in the reporting periods of the years 2025 to 2039 shall, where applicable, be ***carried-over*** from one reporting period to the next reporting period. However, any remaining emission debts shall be cleared in the reporting periods of the year 2029, 2034 and 2039.

Emission credits shall be taken into account for the purpose of determining the manufacturer’s compliance with its specific CO₂ emissions target only in any of the reporting periods of the 7 years following the reporting period during which they have been acquired.’;

- (e) paragraph 2 is replaced by the following:

‘2. The CO₂ 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 CO₂ emissions and the CO₂ 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 CO₂ emissions target for the reporting period of the year 2025 and the CO₂ emissions target for the reporting period of the year 2030 as specified in Article 3a(1), point (b),

(c) between the CO₂ emissions target for the reporting period of the year 2030 and the CO₂ emissions target for the reporting period of the year 2035 as specified in Article 3a(1), point (c), and

(d) between the CO₂ emissions target for the reporting period of the year 2035 and the CO₂ 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 CO₂ emissions *referred to* in Article 4 and the specific CO₂ 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 CO₂ emissions of **heavy-duty** vehicles of category M

For vehicles of category M, the following shall apply:

(a) for the calculation of the average specific CO₂ emissions in a **vehicle** sub-group of a manufacturer, a new heavy-duty vehicle of category M shall be considered with its specific CO₂ emissions as **a** complete or completed vehicle in point 2.2.2 of Annex I and shall not be taken into account in point 2.2.3 of **that Annex**.

(b) **by way of derogation from point (a) of this Article**, upon request of the manufacturer as referred to in Article 7a, point (b), **to the Commission** and subject to the condition set out in **point (c)**, a new heavy-duty vehicle of category M shall be considered with the specific CO₂ 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 referred to in point (b) for a new heavy-duty vehicle of category M shall not be admissible if *that* manufacturer ■ and the ■ vehicle *manufacturer* as defined in Article 3(4a) of Regulation (EU) 2017/2400, *of its complete or completed vehicle* are connected undertakings or *parts of* the same legal entity. By making such a request, a manufacturer declares that this condition *is met. It* shall provide supporting information to the Commission upon demand.

(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 such* requests referred to in point (b) *to the Commission.*’;

(11) Article 8 is amended as follows:

(a) in point (a) of paragraph 1, “*from 2025* to 2029” is replaced by “*from 2025 onwards*”;

(b) point (b) of paragraph 1 is deleted;

(c) paragraph 2 is replaced by the following:

‘2. A manufacturer shall be deemed to have excess CO₂ 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 CO₂ emissions exceed its specific CO₂ emissions target.’;

The excess CO₂ 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 CO₂ 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 CO₂ *emissions* determination were identified;
- (c) where errors in the execution of the CO₂ *emissions* monitoring and reporting were identified;
- (d) any other deviations than those mentioned in points (a), (b) and (c).’;

(b) paragraph 2 is replaced by the following:

‘2. The Commission shall take the deviations referred to in paragraph 1 into account for the purpose of calculating the average specific CO₂ emissions of a manufacturer and the reference CO₂ emissions. ***It shall*** consider modifying 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 CO₂ emissions of a manufacturer or the reference CO₂ emissions results in a deviation of less than 0,1 %.’;

- (13) Article 10 is replaced by the following:

‘Article 10

Assessment of reference CO₂ emissions

1. In order to ensure the robustness and representativeness of the reference CO₂ emissions of vehicle sub-groups, to which a reporting period of the year 2024 or later applies as reference period according to point 3.2 of Annex I, the Commission shall assess the application of the conditions under which the reference CO₂ 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 **CO₂** reference emissions ***are to*** be corrected, it shall adopt an implementing act in accordance with the examination procedure referred to in Article 16(2) performing ***those*** corrections.’;

- (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 CO₂ 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 CO₂ emissions in the preceding reporting period, as referred to in Article 8(2);’;

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

‘The list to be published by 30 April of the year following a year in which a reference period has ended, shall include the reference CO₂ emissions determined in that reference period.’;

- (b) paragraph 2 is replaced by the following:

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

(a) where the type-approval procedures referred to in Regulation (EC) No 595/2009 are amended, other than the amendments related to the payload and passenger number values used for the determination of CO₂ emissions, in such a way that the level of the CO₂ emissions of the representative **heavy-duty** vehicles specified pursuant to **paragraph 3 of this Article** increase or decrease by more than 5 g CO₂/km:

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

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

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

(i) previously published reference CO₂ emissions shall be recalculated in accordance with Annex I, taking into account the parameters amended **in accordance with** Article 14 (1), point (a) to (f);

(ii) the recalculated set of reference CO₂ 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), point (a) to (f), apply for the first time.’;

(c) the following paragraph is added:

‘3. In case of amendments of the type-approval procedures referred to in paragraph 2, **first subparagraph, 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 subgroup, including their statistical weightings and the payload and passenger number values to be used for the determination of CO₂ emissions, on the basis of which the adjustment referred to in paragraph 2, **first subparagraph, point (a)(i), of this Article** shall be determined, 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, the following sentence is added:

‘Where the data in the customer information files, the certificates of conformity and the individual approval certificates may not be corrected under Regulation (EU) 2018/858, the responsible type-approval authority shall issue a statement of correction with the corrected data. **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 [***OJ: please insert year: if this amending Regulation enters into force before 1 July, insert the year of its entry into force minus 1; if this amending Regulation enters into force after 30 June, insert the following year***], Member States shall monitor the data specified in Annex IV, Part A relating to new heavy-duty vehicles registered for the first time in the Union.

By 30 September **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 the monitoring and reporting of data in accordance with this Regulation shall be those designated by the Member States in accordance with Article 7(6) of Regulation (EU) 2019/631.

3. **Heavy-duty** vehicles designed and constructed or adapted for the use by civil protection *services*, fire services and 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, medical urgency care *services* and forces responsible for maintaining public order ■ shall be subject to ■ this Article, regardless of *whether* they are exempted *from Article 3a*.

Article 13b

Reporting by manufacturers or other entities responsible for the determination of
CO₂ emissions of a heavy-duty vehicle ■

1. Manufacturers or other entities responsible for the determination of ***the CO₂ emissions of*** a heavy-duty vehicle ■ which ***are subject to*** Article 9 of Regulation (EU) 2017/2400 or Article 8 of Implementing Regulation (EU) 2022/1362 ■ shall report the data of the new heavy-duty vehicle ***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 **vehicles** exempted in accordance with 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 in accordance with 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 **central** register shall be managed by the **European Environment** Agency on behalf of the Commission.

Article 13d

Monitoring of the results of on-road verification tests

1. The Commission shall monitor, where available, the results of on-road tests performed within the framework of Regulation (EC) No 595/2009 to verify the CO₂ 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 applicable pursuant to Article **13b** 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, proportional and dissuasive and shall not exceed EUR 30 000 per heavy-duty vehicle concerned by deviating or delayed data as referred to in points (a) and (b).

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

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

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

(b) in calculating the appropriate administrative *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 prior sanctions imposed on the same manufacturer;

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

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

(17) Article 14 is replaced by the following:

‘Article 14

Amendments to the Annexes

1. The Commission is empowered to adopt delegated acts in accordance with Article 17 *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 legislation, 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 adding separate subgroups 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 to 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 to 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 legislation, 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) adjusting the ■ reporting procedure set out in Annex V in order to take into account the experience gained from the application of this Regulation and in order to adapt it to technical progress;
 - (b) amending point 3.2 by adding data entries which have been newly added to the *central* register.’
- (18) Article 15 is replaced by the following:

‘Article 15

Review

In 2027, the Commission shall ■ review the effectiveness and impact of this Regulation, *notably in regard to 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 in particular assess:

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

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

-impacts 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 impacts on peripheral Member States and transport of perishable goods;

-whether the continuation of the exemption for manufacturers producing few vehicles set out in Article 6b of this Regulation is still justified;

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

-an assessment of the level of the excess CO₂ emissions premium to ensure that it exceeds the average marginal costs of the technologies needed to meet the CO₂ emissions targets;

-the inclusion of the following heavy-duty vehicles, which are currently not in the scope of Commission Regulation (EU) 2017/2400, in the CO₂ emission reduction targets:

i) small lorries with a TPMLM \leq 5 tonnes, following an investigation of the appropriateness of the determination of CO₂ emissions for such vehicles, according to the provisions of Regulation 2017/2400 (VECTO simulations), also in consideration of Regulation 2017/1151, and

ii) special purpose, off-road and off-road special purpose vehicles;

-any specific constraints to comply with Article 3b, paragraph 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;

-an assessment of the role of a carbon correction factor in the transition towards zero-emission mobility in the heavy-duty vehicles sector;

-an assessment of the role of a methodology for registering HDV exclusively running on CO₂ neutral fuels, in conformity with Union law and with Union climate neutrality objective;

-whether the creation of new sub-groups for EHC lorries has led to undue increase of the engine rated power;

-the possibility of developing a common Union methodology for the assessment, and the consistent data reporting, of the full lifecycle CO₂ emissions of new heavy-duty vehicles that are placed on the Union market;

-an analysis of options to consider zero-emission vehicles, which have been retrofitted from conventional vehicles previously already registered, for the purposes of compliance assessment under this Regulation.

That report shall, where appropriate, be accompanied by a legislative proposal for amending this Regulation.

2c. 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 sector and the appropriate framework of measures, including financial incentives, to achieve this. Based on that analysis, the Commission shall, if appropriate, make additional legislative proposals or shall make recommendations to the Member States.

I ,

(19) Article 17 is amended as follows:

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

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

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

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

(c) in paragraph (6), “Article 11(2), the second subparagraph of Article 13(4) and Article 14(1)” is replaced by the following: “Article 3b(2b), Article 13(4) second subparagraph, Article 13d(2), Article 13f(2), Article 14(1), Article 14(2) and Article 14(3)”;

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

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

Article 2

Repeal of Regulation (EU) 2018/956

Regulation (EU) 2018/956 is repealed with effect from [OJ, please insert the date of application of this amending Regulation].

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

Article 2a
Amendments to Regulation (EU) 2018/858

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

(1) Article 3 is amended as follows:

(a) In point (33) the term ‘towed vehicle’ is replaced by ‘trailer’;

(b) The following point (59) 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 (iii) 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
Transitional provisions

Notwithstanding Article 2, in respect of reporting periods prior to... [OJ: please insert the = date of application of this amending Regulation], Regulation (EU) 2019/1242 as applicable on 30 June... [OJ: please insert the year of the first 1 July after the date of entry into force of this amending Regulation] and Regulation (EU) 2018/956 as applicable on 30 June... [OJ: please insert the year of July after the date of entry into force of this amending Regulation] shall continue to apply.

Article 4

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 ... *[OJ: please insert the year of July after 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

The President

For the Council

The President

ANNEX I

Average specific emissions, average specific emission targets and excess emissions

1. vehicle sub-groups

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

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

| Vehicle group according to Annex I to Regulation (EU) 2017/2400 | Cab type | Engine power | Operational range (OR) | Vehicle sub-group (sg) attributed for the purposes of this Regulation* | |
|---|-------------|---------------------|------------------------|--|---------------------|
| | | | | Vehicles other than vocational | Vocational vehicles |
| 53 and zero-emission vehicles in 51 | All | | | 53 | 53v |
| 54 and zero-emission 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 CO₂ emissions of manufacturers of reporting periods of years between 2030 and 2034 ~~prior to 2035~~ according to points 2.4 and 2.7, zero-emission vocational heavy-duty vehicles of category N shall be attributed as follows:

| | |
|--|-------------------------|
| Zero-emission vocational heavy-duty vehicle in sub-group | Attributed to 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 in accordance with Articles 13a and 13b.

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

Where a new heavy-duty vehicle is attributed to sub-group 4-UD, but data on the CO₂ emissions in g/km are not available for the UDL or UDR mission profiles as defined in point 2.1, ~~Table 2~~ **1.4**, the new heavy-duty vehicle shall be attributed to the sub-group 4-RD

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

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

| 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, 35e, <u>39c</u> | 39-FE |

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

| Vehicle groups defined in Annex I of Regulation (EU) 2022/1362 | Vehicle sub-group (sg) attributed for the purposes of this Regulation |
|---|--|
| All groups provided in Table 1 with 1, 2, 3 axles | Same as provided in column “vehicle group” of the tables in Annex I to Regulation (EU) 2022/1362. |
| All groups provided in Table 4 with 1, 2, <u>or</u> 3 axles | |
| All groups provided in Table 6 | |

1.2. Vocational vehicles are defined by the following criteria:

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

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

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

1.4. Definitions of mission profiles

| | |
|------------|--|
| RDL | Regional delivery payload low |
| RDR | Regional delivery payload representative |
| LHL | Long haul payload low |
| LHR | Long haul payload representative |
| UDL | Urban delivery payload low |
| 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, person <u>passenger</u> transport, low load |

| | |
|------------|---|
| HPR | Heavy urban, person <u>passenger</u> transport, representative load |
| UPL | Urban, person <u>passenger</u> transport, low load |
| UPR | Urban, person <u>passenger</u> transport, representative load |
| SPL | Sub-urban, person <u>passenger</u> transport, low load |
| SPR | Sub-urban, person <u>passenger</u> transport, representative load |
| IPL | Inter-urban, person <u>passenger</u> transport, low load |
| IPR | Inter-urban, person <u>passenger</u> transport, representative load |
| CPL | Coach, person <u>passenger</u> transport, low load |
| CPR | Coach, person <u>passenger</u> transport, representative load |

2. Calculation of the average specific emissions of a manufacturer

2.1. Calculation of the specific CO₂ emissions of a new heavy-duty vehicle

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

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

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

Where,

\sum_{mp} is the sum over all mission profiles mp listed in ~~Table 2~~ point 1.4;

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

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

$CO2_{v,mp}$ is the CO₂ emissions in g/km of the new heavy-duty vehicle v determined for a mission profile mp , reported in accordance with Articles 13a and 13b and normalised pursuant to Annex III;

$CO2p_{v,mp}$ is the CO₂ 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 sub-group sg** , reported in accordance with Articles 13a and 13b **and normalised pursuant to Annex III**;

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

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

| Vehicle sub-group (sg)* | Mission profile (mp)** | | | | | | | | | | |
|--------------------------------|----------------------------|-------|-----|-----|------|------|--------------------|-----|-----|-----|-----|
| | RDL | RDR | LHL | LHR | UDL | UDR | REL, RER, LEL, LER | MUL | MUR | COL | COR |
| 53, 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 vehicles of category M

| Vehicle sub-group (sg)* | Mission profile (mp)** | | | | | | | | | |
|----------------------------|------------------------|------|------|------|------|------|------|------|------|------|
| | 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 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 CO₂ emissions of all new heavy-duty vehicles in a sub-group for a manufacturer

For each manufacturer and each *reporting period*, the average specific CO₂ emissions $avgCO2_{sg}$ of all new heavy-duty vehicles in a sub-group sg or their primary vehicles, if applicable, shall be calculated as follows:

2.2.1. For category N and O vehicles:

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

2.2.2. For category M complete or completed vehicles:

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

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

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

Where,

| | |
|---------------|--|
| \sum_v | is the sum over all new heavy-duty vehicles of the manufacturer in the sub-group sg , subject to the provisions of Article 7b; |
| $CO2_v$ | is the specific CO_2 emissions of the new heavy-duty vehicle v determined in accordance with point 2.1; |
| $CO2_{p_v}$ | 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 subgroup sg ; |
| $V_{pv_{sg}}$ | the number of new heavy-duty vehicles within the sub-group sg , which pursuant to Article 7b shall be accounted for with the CO_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 vehicles in the sub-group sg as determined in point 2.5. |
| PN_{sg} | is the average passenger number of vehicles in the sub-group sg as determined in point 2.5. |

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

2.3.1 Reporting periods 2019 to 2024

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

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

where:

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

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

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

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

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

2.3.2 Reporting periods from 2025 to 2029

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

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

Where:

x is 0,02

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

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

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

Where:

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

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

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

V_{total} is the total number of newly registered heavy-duty vehicles in 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 as from 2030

$$ZLEV = 1$$

2.3.4 Calculation of the low-emission threshold

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

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

Where:

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

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

2.4. Calculation of vehicle shares

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

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

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

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

For each manufacturer and each **reporting period**, the share of new heavy-duty vehicles within the sub-group sg , which pursuant to Article 7b shall be accounted for with the CO_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:

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

Where,

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

$V_{pv_{sg}}$ the number of new heavy-duty vehicles within the sub-group sg , which pursuant to Article 7b shall be accounted for with the CO₂ emissions of their primary vehicles in the calculation of the average specific CO₂ emissions of point 2.2.;

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

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

2.5. Payload values, passenger numbers and cargo volumes

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

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

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

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

Where,

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

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

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

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

2.5.1. Vehicles of category N.

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

| Vehicle sub-group <i>sg</i> * | Mission profile <i>mp</i> ** | | | | | | | | | | | | | |
|-------------------------------|------------------------------|------|------------------------------|------------------------------|-----|------|-----|------|-----|------|------|------|-----|------|
| | RDL | RDR | LHL | LHR | UDL | UDR | REL | RER | LEL | LER | MUL | MUR | COL | COR |
| 53 | As determined in point 3.1.1 | | Not applicable | As determined in point 3.1.1 | | | | | | | | | | |
| 53v | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | |
| 1s | | | | | | | | | | | | | | |
| 1sv | | | | | | | | | | | | | | |
| 1 | | | | | | | | | | | | | | |
| 1v | | | | | | | | | | | | | | |
| 2 | | | As determined in point 3.1.1 | | | | | | | | | | | |
| 2v | | | | | | | | | | | | | | |
| 3 | | | Not applicable | | | | | | | | | | | |
| 3v | | | | | | | | | | | | | | |
| 4-UD | 0,9 | 4,4 | 1,9 | 14 | 0,9 | 4,4 | 3,5 | 17,5 | 3,5 | 26,5 | 0,6 | 3,0 | 0,9 | 4,4 |
| 4-RD | | | | | | | | | | | | | | |
| 4-LH | | | | | | | | | | | | | | |
| 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 according to point 3.1.1.

2.5.2. Vehicles of category M.

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

2.5.3. Vehicles of category O.

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

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

| | | | | | | | |
|--|------------|-------------|------------|-------------|-------------|-------------|-------------|
| 611v, 612v | 1,2 | 6,1 | 1,2 | 9,2 | n.a. | n.a. | n.a. |
| 621, 621v, 623, 623v | 1,3 | 6,3 | 1,3 | 9,5 | n.a. | n.a. | n.a. |
| 622, 622V, 624, 624V, 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 according to point 3.1.1.

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

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

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

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

Where,

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

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

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

PN_{sg} is as determined in point 2.5.2;

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

2.6.1. Annual mileages for vehicles of category N

| Vehicle sub-group (sg)* | Annual mileage AM_{sg} (in km) |
|--------------------------------|----------------------------------|
| 53, 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 vehicles of category M

| Vehicle sub-group (<i>sg</i>)* | 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 vehicles of category O

| Vehicle sub-group (<i>sg</i>)* | 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, | 68 000 |

| | |
|--|--------|
| 431v, 432, 432v, 433 | |
| 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 CO₂ emissions of manufacturers, as referred to in Article 4

For each manufacturer the following average specific CO₂ emissions shall be calculated:

2.7.1. For the reporting periods 2019 to 2029:

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

2.7.2. For the reporting periods as from 2025:

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

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

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

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

Where,

\sum_{sg} is the sum is over those sub-groups that are included in the calculation of the particular average specific CO₂ emissions according to point 4.2;

| | |
|----------------|----------------------------------|
| $ZLEV$ | is as determined in point 2.3; |
| $share_{sg}$ | is as determined in point 2.4; |
| $z_{ev_{sg}}$ | is as determined in point 2.4; |
| pv_{sg} | is as determined in point 2.4; |
| MPW_{sg} | is as determined in point 2.6; |
| $avgCO2_{sg}$ | is as determined in point 2.2; |
| $avgCO2p_{sg}$ | is as determined in point 2.2; |
| $rCO2_{sg}$ | is as determined in point 3.1.2. |

3. Calculation of the reference values

3.1. Reference values

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

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

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

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

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

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

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

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

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

3.1.2. Reference CO₂ emissions $rCO2_{sg}$ referred to in Article 3 shall be calculated as follows:

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

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

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

Where,

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

$CO2_v$ are the specific CO₂ 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 CO₂ emissions of the primary vehicle of the new-heavy duty vehicle v as determined in accordance with point 2.1, if applicable adjusted pursuant to Annex II;;

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

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

- PN_{sg} is the average passenger number of vehicles in the sub-group sg as determined in point 2.5;
- $PL_{v,mp}$ is the payload of vehicle v in the mission profile mp , as determined from the data reported according to Articles 13a and 13b ;
- $PN_{v,mp}$ is the passenger number of vehicle v in the mission profile mp as determined from the data reported according to Articles 13a and 13b;
- $PM_{v,mp}$ is the passenger mass of vehicle v in the mission profile mp as determined from the data reported according to Articles 13a and 13b;
- $maxPL_v$ is the technically permissible maximum payload of vehicle v as determined from the data reported according to Articles 13a and 13b;
- $maxPN_v$ is the technically permissible maximum passenger number of vehicle v as determined from the data reported according to Articles 13a and 13b;
- CV_v is the cargo volume of vehicle v as determined from the data reported according to Articles 13a and 13b.

3.2. Reference periods applicable to sub-groups

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

| Vehicle sub-group sg | Reporting period of the year applicable as reference period |
|--|---|
| 4-UD, 4-RD, 4-LH, 5-RD, 5-LH, 9-RD, 9-LH, 10-RD, 10-LH | 2019 |
| <u>1, 2, 3, 11, 12, 16</u> | <u>2021</u> |
| All others | 2025 |

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

The average specific CO2 emissions $avgCO2_{sg}$ and $avgCO2p_{sg}$ as provided for in point 2.2 and the reference CO2 emissions $rCO2_{sg}$ and $rCO2p_{sg}$ as provided for in point 3.1.2 shall be set to “0” for all manufacturers in the sub-group sg for the purpose of calculating the average specific CO2 emissions according to point 2.7 and the specific CO2 emissions targets according to point 4.1 for the reporting periods of the years $< Y + 5$. Here Y is the year of the first reporting period in which the number of new heavy-duty vehicles of all manufacturers in the sub-group sg is at least 50.

To obtain the reference CO2 emissions $rCO2_{sg}$ and $rCO2p_{sg}$ for the purpose of calculating the specific emissions target according to point 4, first the corresponding ~~entities~~ **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 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 CO2 emissions $rCO2_{sg}$,
- the target factor $RETp_{sg,Y}$, as defined in point 5.1.1, for obtaining reference CO2 emissions $rCO2p_{sg}$.

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

4.1. Specific emission targets

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

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

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

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

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

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

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

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

Where,

\sum_{sg} is the sum over those sub-groups that are included in the calculation of the particular specific emissions target according to point 4.2;

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

MPW_{sg} is as determined point 2.6;

rf_{sg} is the CO₂ reduction target **applicable in** the specific **reporting period** to new heavy duty vehicles in sub-group sg as provided for in point 4.3;

rfp_{sg} is the CO₂ reduction target **applicable in** the specific **reporting period** to primary vehicles of new heavy-duty vehicles in sub-group sg as provided for in point 4.3;

$zevM_{sg}$ is the zero-emission vehicles mandate **applicable in** the specific **reporting period** to vehicles in 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 CO₂ emissions and specific emissions targets of manufacturers

The following sub-groups *sg* shall be included in the calculation of the specific CO₂ emissions $CO_2(X)$, specific emissions targets $T(X)$ and CO₂ emissions trajectory $ET(X)_Y$:

| X = 2025 | X= NO | X = MCO2 | X= MZE |
|--|--|---|---|
| vehicle sub-groups, subject to CO₂ emissions targets according to Article 3a paragraph 1 (a) | sub-groups of transport of goods vehicles, subject to CO₂ emissions targets according to Article 3a paragraphs 1(b), 1(c) and 1(d) and paragraph 3 | sub-groups of transport of persons <u>passengers</u> vehicles, subject to CO₂ emissions targets according to Article 3a paragraphs 1(b), 1(c) and 1(d) <u>(Coaches and Class II Low Entry Buses)</u> | sub-groups of transport of persons <u>passengers</u> vehicles, subject to zero-emissions vehicle targets according to Article 3b <u>(Urban buses)</u> |
| 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 years prior to 2035, vocational vehicle sub-groups shall not be included. | 32-C2, 32-C3, 32-DD, 34-C2, 34-C3, 34-DD, <u>31-L2, 33-L2</u> | 34-LF , 31-L1, 31-L2, 31-DD, 33-LF , 33-L1, 33-L2, 33-DD, 35-FE, 39-FE |

4.3. CO₂ reduction targets and zero-emissions vehicle mandates

4.3.1. The following CO₂ emissions reduction targets rf_{sg} and rfp_{sg} pursuant to Article 3a shall apply to vehicles in the sub-group sg for different reporting periods:

| CO ₂ reduction targets rf_{sg} and rfp_{sg} | | | | | |
|---|---|-------------------------------|-------------|-------------|--------------|
| Sub-groups sg | | Reporting period 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-DD₂, 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-DD₂, 31-L2, 33-L2 | 0 | 43% | 64% | 90% |
| Trailers | 111, 111V, 112, 112V, 113, 121, 121V, 122, | 0 | 7,5% | 7,5% | 7,5% |

| | | | | | |
|----------------------|---|----------|--------------------------|--------------------------|--------------------------|
| | 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 | 15%10% | 15%10% | 15%10% |

For reporting periods of the years before 2025, all CO₂ reduction targets rf_{sg} and rfp_{sg} shall be 0.

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

| Zero-emission vehicle mandates $zevM_{sg}$ | | | | | |
|--|--|-------------------------------|----------------------------------|-------------|--------------|
| Sub-groups sg | | Reporting period of the years | | | |
| | | before 2030 | 2030 – 2034 | 2035 – 2039 | As from 2040 |
| Urban heavy buses | 31-LF, 31-L1, 31-DD, 33-LF, 33-L1, 33-DD, 35-FE, 39-FE, 31-L2, 33-L2 | 0 | 100%<u>90%</u> | 100% | 100% |

5. Emission credits and debts referred to in Article 7

5.1. CO₂ 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 $\{rY, 2025, 2030, \mathbf{2035}, 2040\}$ for the 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 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 CO₂ reduction targets of the sub-group sg for new heavy duty vehicles of the years lY and uY according to point 4.3;

$rfp_{sg,lY}, rfp_{sg,uY}$ are the CO₂ reduction targets of the sub-group sg for primary vehicles of new heavy duty vehicles of the years lY and uY according to point 4.3;

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

For reporting years $Y < rY$, the values of $RET_{sg,Y}$, $RETP_{sg,Y}$ and $ZET_{sg,Y}$ shall be set to 1 such that there is no contribution of the vehicle sub-group sg to the CO₂ emissions trajectory.

5.1.2. CO₂ emissions reduction trajectories

5.1.2.1. Then for each vehicle sub-group sg and reporting period of a year Y the following CO₂ 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 periods of a year Y between 2019 and 2024 the following CO₂ emissions reduction trajectories shall be defined:

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

5.1.2.3. For each manufacturer and reporting periods of a year Y between 2025 and 2040 the following CO₂ emissions reduction trajectories shall be defined:

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

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

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

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

Where,

\sum_{sg} is the sum over those sub-groups that are included in the calculation of the particular CO₂ emissions trajectory according to point 4.2;

$share_{sg}$ is the share of new heavy-duty vehicles of the manufacturer in the sub-group sg , as determined in point 2.4;

MPW_{sg} is as determined point 2.6;

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

$rCO2p_{sg}$ is as determined in point 3.1.2;

pv_{sg} is the share of new heavy-duty vehicles of the manufacturer within the sub-group sg , which pursuant to Article 7b shall be accounted for with the CO₂ emissions of their primary vehicles in the calculation of the average specific CO₂ 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 $cCO_2(X)_Y$ and emission debts $dCO_2(X)_Y$, ($X = NO, M$), shall be the maximum of the following values and 0 (i.e. emission credits and debts cannot be negative):

| | 2019 ≤ Y < 2025 | 2025 ≤ Y < 2030 | 2030 ≤ Y < 2040 |
|---------------|--|---|--------------------------------------|
| $cCO_2(NO)_Y$ | $[ET(2025)_Y - CO_2(2025)_Y] \times V_y$ | $[ET(NO)_Y - CO_2(NO)_Y] \times V_y$ | $[ET(NO)_Y - CO_2(NO)_Y] \times V_y$ |
| $dCO_2(NO)_Y$ | 0 | $[CO_2(2025)_Y - T(2025)_Y] \times V_y$ | $[CO_2(NO)_Y - T(NO)_Y] \times V_y$ |
| $cCO_2(M)_Y$ | 0 | $[ET(M)_Y - CO_2(M)_Y] \times V_y$ | $[ET(M)_Y - CO_2(M)_Y] \times V_y$ |
| $dCO_2(M)_Y$ | 0 | 0 | $[CO_2(M)_Y - T(M)_Y] \times V_y$ |

Where,

$ET(X)_Y$ is the manufacturer's emission trajectory in the **reporting period of the** year Y determined in accordance with point 5.1 ($X = 2025, NO, M$);

$CO_2(X)_Y$ is the manufacturer's average specific emissions in the **reporting period of the** year Y determined in accordance with point 2.7 ($X = 2025, NO, M$);

$T(X)_Y$ is the manufacturer's specific emission target in the **reporting period of the** year Y determined in accordance with point 4 ($X = 2025, NO, M$);

V_Y is the number of new heavy-duty vehicles of the manufacturer in the **reporting period of the** year Y .

5.3. Emission debt limit

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

$$limCO2(NO)_Y = T(2025)_Y \times 0,05 \times V(2025)_Y \quad \text{for the reporting periods of the year } Y < 2030;$$

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

$$limCO2(M)_Y = T(M)_Y \times 0,05 \times V(M)_Y \quad \text{for the reporting periods of the year } Y \geq 2030.$$

Where

$T(X)_Y$ is the manufacturer's specific emission target in the **reporting period of the** year Y determined in accordance with point 4 ($X = 2025, NO, M$);

$V(X)_Y$ is the number of new heavy-duty vehicles of the manufacturer in the **reporting period of the** year Y in the vehicle sub-groups, which are included in the calculation of the specific CO₂ emissions $CO2(X)$ according to point 4.2 ($X = 2025, NO, M$).

5.4. Early emission credits

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

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

Where,

\min is the minimum of the two values mentioned between the brackets;

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

$dCO_2(NO)_Y$ is the emission debts for *reporting period of the year Y* as determined in accordance with point 5.2;

$cCO_2(NO)_Y$ 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 CO₂ 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 CO₂ emissions $exeCO_2(X)_Y$ shall be determined as follows. if the value is positive (X = NO, M).

For the *reporting period of* the year 2025:

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

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

$$exeCO_2(NO)_y = \sum_{I=2025}^Y (dCO_2(NO)_I - ccCO_2(NO)_{I,Y}) -$$

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

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

$$exeCO_2(M)_y = \sum_{I=2025}^Y (dCO_2(M)_I - ccCO_2(M)_{I,Y}) -$$

$$\sum_{J=2030}^{Y-1} exeCO_2(M)_J - limCO_2(M)_Y$$

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

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

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 periods of the year 2040:

$$exeCO2(NO)_{2040} = (CO2(NO)_{2040} - T(NO)_{2040}) \times V_{2040} + \sum_{I=2025}^{2039} (dCO2(NO)_I - ccCO2(NO)_{I,Y}) - \sum_{J=2025}^{2039} exeCO2(NO)_J - redCO2$$

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

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 over the **reporting periods of the years Y from 2019 to 2024**;

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

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

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

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

$dCO2(X)_Y$ is the emission debts for the **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** year, 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 5.4 (X = NO, M).

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

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

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

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

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

$$ccCO2(X)_{I,Y} = \min(cCO2(X)_I ;$$

$$\sum_{K=2025}^{I+7} dCO2(X)_K - \sum_{K=2025}^{I-1} ccCO2(X)_{K,Y}) \quad \text{for } Y > I + 7;$$

ANNEX II

Adjustment procedures referred to in Article 11

1. Adjustment of reference CO₂ 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 CO₂ emissions referred to in Point 3.1.2 of Annex I shall be recalculated.

For this purpose the CO₂ emissions in g/km of new heavy-duty vehicles v of the reference period and of their primary vehicles determined for a mission profile mp , as referred to in point 2.1 of Annex I, shall be adjusted as follows:

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

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

Where

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

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

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

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

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

$CO2_{r,mp}$ is the specific CO₂ emissions of the representative vehicle r , as determined on mission profile mp in accordance with Regulation (EC) No 595/2009 and

its implementing measures according to the amendments referred to in Article 11(3)(a);

$CO_2p(RP)_{v,mp}$ is the specific CO₂ 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;

$CO_2p(RP)_{r,mp}$ is the specific CO₂ emissions of the primary vehicle of the representative vehicle r in g/km, as determined in accordance with Regulation (EC) No 595/2009 and its implementing measures as it was applied in the reference period;

$CO_2p_{r,mp}$ is the specific CO₂ emissions of the primary vehicle of the representative vehicle r , as determined on mission profile mp in accordance with Regulation (EC) No 595/2009 and its implementing measures according to the amendments referred to in Article 11(3)(a).

The specific CO₂ emissions shall be normalised pursuant to Annex III using those values for the parameters referred to in Article 14(1), point (f), that are applicable in the reporting period referred to in Article 11(2), point (a).

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

2. Application of the adjusted reference CO2 emissions according to Article 11(2)

If in the reporting period of the year Y the specific CO2 emissions of some new heavy-duty vehicles of a manufacturer have been determined with amendments referred to in Article 11(2), the reference CO2 emissions rCO_{2sg} of the vehicle sub-group sg used in points 4 and 5.1 of Annex I shall be calculated as follows:

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

where:

\sum_i is the sum over

- for $i = 0$: the non-amended procedure for determining the CO2 emissions, for which the initial reference CO2 emissions without adjustments are applicable and
- for $i \geq 1$: all subsequent amendments referred to in Article 11(2).

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

$V_{sg,i}$ is the number of new heavy-duty vehicles of the manufacturer in the reporting period of the year Y and in the vehicle sub-group sg , the specific CO2 emissions of which have been determined with the amendment i ;

$rCO_{2sg,i}$ are:

- for $i = 0$: the non-adjusted reference CO2 emissions
- for $i \geq 1$: the reference CO2 emissions that have been determined for the vehicle sub-group sg with the amendment i .

ANNEX III

Normalisation of specific CO₂ emissions of new heavy-duty vehicles referred to in

Article 4

1. Normalisation of specific CO₂ emissions

For the purposes of the calculation in point 2.1 of Annex I, the values of CO₂ emissions $CO2_{v,mp}$ of vehicles are normalised as follow:

$$CO2_{v,mp} = reportCO2_{v,mp} + \Delta CO2_{v,mp}(m) + \Delta CO2cv_{v,mp}$$

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

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

The values of CO₂ emissions $[[CO2p]]_{(v,mp)}$ of primary vehicles are normalised according to the same methodology, using the parameters for primary vehicles.

Where

$CO2_{v,mp}$ are the normalised CO₂ emissions of the vehicle v determined for a mission profile mp that are to be considered in the calculation of Annex I point 2.1;

$reportCO2_{v,mp}$ are the CO₂ emissions in g/km of the primary vehicle ~~a new heavy-duty vehicle~~ v determined for a mission profile mp and reported in accordance with Articles 13a and 13b;

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

$\Delta CO2cv_{v,mp}$ is to be determined in accordance with point 4;

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

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

| | |
|--------------|--|
| $PM_{v,mp}$ | is the passenger mass of vehicle v in the mission profile mp , as determined from the data reported according to Articles 13a and 13b; |
| $PM_{sg,mp}$ | is the passenger mass for sub-group sg and mission profile mp as provided for in point 2.5 of Annex I; |
| cCW_v | is the correction of the curb weight of the vehicle v according to point 2. |

2. Curb Weight normalisation

Since the transport utility of a vehicle increases with its technically permissible maximum payload or passenger number, but for technical reasons higher values for these parameters are correlated with higher curb weights and therefore higher CO₂ emissions, the following correction of the curb weight of a vehicle v in sub-group sg for the purpose of the normalisation of its specific CO₂ emissions according to point 1 shall be applied:

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

$$\underline{cCW_v = 0} \quad \underline{\text{for vehicles of category O;}}$$

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

Where

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

$maxPN_{sg}$ is the technically permissible maximum passenger number of vehicle sub-group sg determined according to point 2.5 of Annex I.

2.1. Determination of normalisation parameters

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

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

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

Where

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

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

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

3. Change of CO₂ emissions for change in total vehicle mass

The ex-post change of CO₂ emissions of a vehicle v to be determined for a mission profile mp due to an ex-post change in the total mass to be attributed to the vehicle for the determination of CO₂ 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 vehicle v for the determination of its CO₂ emissions;
- $CO2_{v,r}$ are the CO₂ emissions of the 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 CO₂ emissions of the vehicle v in g/km, without the change of mass, determined for the same mission profile mp , low loading conditions;
- Mr is the total vehicle mass in simulation, without the change of mass, for the same mission profile mp , representative loading conditions;
- Ml is the total vehicle mass in simulation, without the change of mass, for the same mission profile mp , low loading conditions.

4. Normalisation for different cargo volumes

Category O vehicles within the same sub-group have different cargo volumes. Since the transport utility of a vehicle increases with the cargo volume, but for technical reasons such increase is also correlated with higher CO₂ emissions, the following correction of the CO₂ emissions of a vehicle v in 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 according to point 4.1 for the reporting period of the vehicle v ;

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

CV_{sg} is the cargo volume of vehicle sub-group sg determined according to point 2.5 of Annex I.

For vehicle of categories N and M the correction of CO₂ emissions $\Delta CO2_{cv,v,mp}$ 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 vehicles v in the 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 vehicle v as determined from the data reported according to Articles 13a and 13b;

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

ANNEX IV

‘ANNEX IV

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

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

- (a) vehicle identification numbers of all new heavy-duty vehicles as referred to in Article 2 that are registered in the Member State territory;
- (b) manufacturer name;
- (c) make (trade name of manufacturer);
- (d) the code for the bodywork as specified in entry 38 of the certificate of conformity, including, where applicable, the supplementing digits referred to in Annex I Appendix 2 to Regulation (EU) 2018/858;
- (e) in the case of the heavy-duty vehicles referred to in Article 2, first paragraph, point (a) or (b), the information on the powerplant specified in entries 23, 23.1 and 26 of the certificate of conformity;
- (f) the maximum speed of the vehicle as specified in entry 29 of the certificate of conformity;
- (g) the stage of completion, as indicated in the chosen model of the certificate of conformity in accordance with Annex VIII, point 2 to Commission Implementing Regulation (EU) 2020/683;
- (h) the vehicle category as specified in entry 0.4 of the certificate of conformity;
- (i) the number of axles, as specified in entry 1 of the certificate of conformity;
- (j) the technically permissible maximum laden mass, as specified in entry 16.1 of the certificate of conformity;
- (k) the imprint of the cryptographic hash of the manufacturer’s records file as specified in entry 49.1 of the certificate of conformity; for vehicles registered until 30 June 2025 Member States may report only the first 8 characters of the cryptographic hash;

- (l) the specific CO₂ 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;
- (na) the technically permissible maximum mass of the combination for a category N3 truck in an extra heavy combination (EHC) referred to in Article 3, point (24), as specified in entry 16.4 of the certificate of conformity or individual vehicle approval certificate;***
- (o) for special purpose vehicles their designation as specified in entry 51 of the certificate of conformity;
- (oa) the number of powered axles, as specified in entry 3 of the certificate of conformity**
- (p) for vehicles approved under Article 2(3)(b) of Regulation 2018/858, the information that the vehicle was designed and constructed or adapted for use by civil protection fire services and forces responsible for maintaining public order;
- (q) for vehicles registered for use by civil protection, fire services or forces responsible for maintaining public order ~~or for use by the armed services~~, the confirmation that the vehicle is registered for use by civil protection, fire services or forces responsible for maintaining public order ~~or for use by the armed services~~ and that it fulfils the conditions set out in Article 2 paragraph 5 of this Regulation. For all vehicles including individually approved vehicles, the corresponding information shall be the information as to be provided in the EU certificate of conformity or EU individual vehicle approval certificate or the national individual approval certificate in accordance with the templates laid down in Commission Implementing Regulation (EU) 2020/683¹ regardless of any national exemptions applicable under Article 45(1) of Regulation (EU) 2018/858.

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

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

In accordance with Article 13b, each reporter shall report the following data for those vehicles, for which it is obliged to produce a Manufacturer's Records File (MRF) or Vehicle Information File (VIF) according to the provisions of Regulations 2017/2400 (EU) and Commission Implementing Regulation (EU) 2022/1362².

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

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

² 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 CO₂ emissions, fuel consumption, energy consumption and zero emission driving range of motor vehicles and amending Implementing Regulation (EU) 2020/683 (OJ L 205, 5.8.2022, p. 145).

³

| | | | | |
|--|--|--|---------------------------|---------------------------|
| | | | – Additional information* | – Additional information* |
|--|--|--|---------------------------|---------------------------|

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

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

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

⁽⁴⁾ Article 9(2) of Commission Regulation (EU) 2017/2400

⁽⁵⁾ Point 2.3 of Annex I to Commission Regulation (EU) 2017/2400

⁽⁶⁾ Point 2.4 of Annex I to Commission Regulation (EU) 2017/2400

⁽⁷⁾ Point 2.7.5 of Annex I to Commission Regulation (EU) 2017/2400

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

⁽⁹⁾ Article 8(7) of Commission Implementing Regulation (EU) 2022/1362

***Additional Information:**

| No | Monitoring parameter | Source | Applicable to vehicles |
|----|--|---|---|
| 15 | Make (trade name of manufacturer) | | All |
| 24 | Name and address of transmission manufacturer | Point 0.4 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VI to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; |
| 25 | Make (trade name of transmission manufacturer) | Point 0.1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VI to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; |
| 32 | Name and address of axle manufacturer | Point 0.4 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VII to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; Category O; |

| | | | |
|----|---|---|---|
| 33 | Make (trade name of axle manufacturer) | Point 0.1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex VII to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; Category O; |
| 39 | Name and address of tyre manufacturer | Point 1 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex X to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; Category O; |
| 40 | Make (trade name of tyre manufacturer) | Point 3 of the model of a certificate of a component, separate technical unit or system of Appendix 1 to Annex X to Regulation (EU) 2017/2400 | Category N; Category M: primary vehicle only; Category O; |
| 72 | Number of license to operate the simulation tool | | All |
| 75 | CO 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 Regulation (EU) No 582/2011, whichever is applicable | Category N; Category M: primary vehicle only; |
| 76 | Fuel consumption of the engine over WHTC (g/kWh) | Point 1.4.2 of the addendum to Appendix 5, or point 1.4.2 of the addendum to Appendix 7, to Annex I to Regulation (EU) No 582/2011, whichever is applicable | Category N; Category M: primary vehicle only; |
| 77 | 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, | Category N; Category M: primary vehicle only; |

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

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

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

| Range | CdxA value [m2] | |
|-------|---------------------------------------|---------------------------------|
| | Min CdxA (CdxA \geq 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 Agency.

The contact point shall notify the Commission and the Agency when the data are transmitted by email to the following addresses:

EC-CO2-HDV-IMPLEMENTATION@ec.europa.eu

and

HDV-monitoring@eea.europa.eu

2. REPORTING BY MANUFACTURERS

- 2.1. Manufacturers shall notify the Commission without delay the following information:

- (a) the manufacturer name indicated in the certificate of conformity or individual approval certificate;
- (b) the World Manufacturer Identifier code (WMI code) as defined in Commission Regulation (EU) No 19/2011¹ to be used in the vehicle identification numbers of new heavy-duty vehicles to be placed on the market;
- (c) the contact point responsible for uploading the data to the Agency.

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

¹ 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 Agency.

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

3. DATA PROCESSING

- 3.1. The Agency shall process the data transmitted in accordance with points 1.1 and 2.2 and shall record the processed data in the register.

- 3.2. The data relating to heavy-duty vehicles registered in the preceding reporting period and recorded in the register shall be made public by 30 April each year, with the exception of the following data entries:

- 3.2.1. vehicle identification number;
- 3.2.2. name and address of the transmission manufacturer;
- 3.2.3. make (trade name of transmission manufacturer;
- 3.2.4. name and address of axle manufacturer;
- 3.2.5. make (trade name of axle manufacturer;
- 3.2.6. name and address of tyre manufacturer;
- 3.2.7. make (trade name of tyre manufacturer;
- 3.2.8. engine model;
- 3.2.9. transmission model;
- 3.2.10. retarder model;
- 3.2.11. torque converter model;
- 3.2.12. angle drive model;
- 3.2.13. axel model;
- 3.2.14. air drag model;
- 3.2.15. comma separated values file of the same name as the job file and with an extension.vsum comprising aggregated results per simulated mission profile and payload condition.

- 3.3. Where a competent authority or manufacturers identify errors in the data submitted, they shall without delay notify those to the Commission and the Agency by submitting

an error notification report to the Agency and by email sent to the addresses referred to in point 1.1.

- 3.4. The Commission shall with the support of the Agency verify the notified errors and, where appropriate, correct the data in the register.
- 3.5. The Commission, with the support of the Agency, shall make available electronic formats for the data transmissions referred to in points 1.1 and 2.2 in due time before the transmission deadlines.

ANNEX VI
CORRELATION TABLE

Regulation (EU) 2018/956

| Regulation (EU) 2018/956 | This Regulation |
|--------------------------|-----------------|
| Article 1 | Article 1(2) |
| Article 2 | Article 2 |
| Article 3 | Article 3 |
| Article 4 | Article 13a |
| Article 5 | Article 13b |
| Article 6 | Article 13c |
| Article 7 | Article 13d |
| Article 8 | Article 13e |
| Article 9 | Article 13f |
| Article 10 | - |
| Article 11 | Article 14 |
| Article 12 | Article 16 |
| Article 13 | Article 17 |
| Article 14 | - |
| Annex I | Annex IV |
| Annex II | Annex V' |