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COM(2018) 284 final

2018/0143 (COD)

Proposal for a

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

**setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles**

(Text with EEA relevance)

{SEC(2018) 233 final} - {SWD(2018) 185 final} - {SWD(2018) 186 final}

## **EXPLANATORY MEMORANDUM**

### **1. CONTEXT OF THE PROPOSAL**

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

Under the Paris Agreement, the European Union (EU) has committed to avoiding climate change by limiting global warming to well below 2°C. Decreasing greenhouse gas (GHG) emissions is a key prerequisite for fulfilling this commitment.

The EU 2030 framework for climate and energy includes a target of an at least 40% reduction of domestic EU GHG emissions compared to 1990 levels. All sectors will have to play their part if this level of ambition is to be achieved and if the costs and severe impacts of climate change are to be avoided.

The road transport sector is of key importance for reducing GHG emissions and decarbonising the EU economy. Light-duty vehicles (LDV) – passenger cars and light commercial vehicles (vans) - are already delivering their share of emission reductions and legislation has been proposed<sup>1</sup> in 2017 so that they continue doing so after 2020.

Road freight transport is essential for the development of trade and commerce on the European continent. Lorries carry around 70% of freight transported over land, delivering also essential public services. The road freight and passenger transport sector largely consists of small and medium enterprises (SMEs), with over 600 000 enterprises across the EU employing almost 3 million people. Another 3.5 million people are employed in lorry manufacturing, repair, sales, leasing and insurance.

While CO<sub>2</sub> emissions from heavy-duty vehicles (HDV), i.e. lorries, buses and coaches, account for about 6% of total EU emissions and 25% of road transport CO<sub>2</sub> emissions in the EU, they are currently not regulated at EU level. This poses three main problems.

First, without any further action, CO<sub>2</sub> emissions from HDV are projected to grow by 9% over the period 2010– 2030 due to increasing transport activities. As shown in the Impact Assessment<sup>2</sup> accompanying the post-2020 CO<sub>2</sub> emission standards for LDV, further measures are needed in the road transport sector to meet the 2030 national targets set under the Effort Sharing Regulation.

Second, transport operators and their clients currently miss out on possible fuel savings and reduced fuel bills. While cost-effective technologies for reducing emissions are readily available, they are not widely spread on the HDV market. This is to the detriment of transport operators, mainly SMEs or micro enterprises, which can experience fuel costs greater than a quarter of their total operational costs.

Third, EU HDV manufacturers face increasing global competitive pressures as the United States, Canada, Japan and China have already implemented regulatory measures to reduce HDV CO<sub>2</sub> emissions. The EU automotive sector will need to keep up with the technological improvements in these markets to preserve its technological leadership in vehicle fuel efficiency.

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<sup>1</sup> COM(2017) 676 final

<sup>2</sup> SWD (2017) 650 final

There are a number of different pieces of EU legislation relevant for the decarbonisation of road transport, which address the abovementioned problems to some extent. This concerns supply, demand, economic and enabling instruments. However, these measures are not sufficient for tackling the key market barriers hampering the uptake of fuel-efficient technologies.

The proposal for CO<sub>2</sub> emission performance standards for new HDV sets out a complementary supply-side measure at EU level to address these market barriers, with the following key objectives:

- Reduce CO<sub>2</sub> emissions from the HDV sector in line with the requirements of EU climate policy and the Paris Agreement, while reducing air pollution notably in cities.
  - Facilitate a reduction in operating costs for transport operators, most of which are SMEs, and more broadly of transportation costs for consumers depending on pass-through of fuel savings.
  - Maintain the technological and innovative leadership position of EU HDV manufacturers and component suppliers.
- **Consistency with existing policy provisions in the policy area**

This proposal is part of the Third Mobility Package. It delivers on the commitment taken in the 2016 European Strategy for low-emission mobility, whose goals include, amongst others, reducing GHG emissions in road transport by at least 60 % in 2050 compared to 1990 levels and setting CO<sub>2</sub> emission standards for HDV.

The proposal builds on and complements other existing EU mobility policy measures which affect the regulatory environment and incentivise low-emission mobility in the heavy duty vehicle sector, such as the Certification Regulation<sup>3</sup>, the Monitoring and Reporting Regulation<sup>4</sup>, the EU type-approval system, the Eurovignette Directive<sup>5</sup>, the Fuel Quality Directive<sup>6</sup>, the Clean Vehicles Directive<sup>7</sup>, the Directive on maximum authorized weights and dimensions<sup>8</sup> and the Directive on the deployment of alternative fuels infrastructure (AFID).<sup>9</sup>

- **Consistency with other Union policies**

This proposal contributes to the transition towards a low-carbon, secure and competitive economy and it will help to meet the emission reduction target of at least 40% included in the Energy Union Strategy<sup>10</sup>. It will also help Member States achieving the national emission reduction targets set under the Effort Sharing Regulation.<sup>11</sup>

Finally, the proposal is also in line with the global-level engagement by the Union to achieve the ambitious climate targets under the agreement found in Paris at the 21st UN Conference of the Parties (COP21).

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<sup>3</sup> Commission Regulation (EU) 2017/2400 on the determination of carbon dioxide emissions and fuel consumption of HDV

<sup>4</sup> COM(2017) 0279 final

<sup>5</sup> Directive 2011/76/EU

<sup>6</sup> Directive 2009/30/EC

<sup>7</sup> Directive 2009/33/EC

<sup>8</sup> Directive 2015/719/EU

<sup>9</sup> Directive 2014/94/EU

<sup>10</sup> COM(2015) 080 final

<sup>11</sup> COM(2016) 482 final

By addressing issues related to the technological and innovative leadership position of EU automotive industry the proposal is consistent with the Renewed Industrial Policy Strategy<sup>12</sup>, which underlines that a modern and competitive automotive industry is key for the EU economy. Furthermore, by stimulating the deployment of new fuel-saving technologies, the proposal also contributes to fulfilling the Union's objectives to generate jobs and growth.

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

### **• Legal basis**

Articles 191 to 193 of the Treaty on the Functioning of the European Union specify EU competencies in the area of climate change. In particular, they provide the legal basis for acting on HDV fuel consumption and CO<sub>2</sub> emissions.

The EU has already acted in the area of vehicle CO<sub>2</sub> emissions, adopting Regulations (EC) 443/2009 and (EU) 510/2011, which set limits for CO<sub>2</sub> emissions from cars and vans. The Commission also adopted a proposal for a Regulation on the monitoring and reporting of CO<sub>2</sub> emissions from and fuel consumption of new heavy-duty vehicles. These Regulations were based upon the Environment chapter of the Treaty, namely on Article 192 TFEU.

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

#### *Necessity of EU action*

Climate change is a trans-boundary problem and at the same time is a competence shared between the EU and Member States. Road freight transport also has a trans-boundary dimension in view of the specific service it renders. Transportation of goods does not happen only within a country but also across Member States and the fact that HDVs can be traded across the EU.

Consequently, EU action is justified in view of both the cross-border impact of climate change and the need to safeguard single markets in road freight transport services as well as those in HDVs.

Without action at EU level, one would have to rely on Member State initiatives to reduce HDV emissions. However, currently many Member States apply a preferential tax treatment for the fuel used in the HDV transport sector, and there are few signals that this would change in the future. The current fuel tax levels have not triggered the necessary increase in fuel efficiency.

In addition, such a decision lies with Member States and it is unlikely that Member States will all together increase fuel tax levels to such a level that could trigger significant efficiency improvement. In addition, the EU taxation policy is subject to unanimity making it difficult to harmonize this policy field.

For these reasons, the possible increase in fuel tax levels could only be complementary but could not substitute the setting of CO<sub>2</sub> emission standards.

Furthermore, in case action would be left to Member States, different national schemes could be established, e.g. depending on the targets set under the Effort Sharing Regulation. If this were to happen, it would result in differing ambition levels and design parameters which would require a range of technology options, diminishing economies of scale and fragmenting the single market.

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<sup>12</sup> COM(2017) 479 final

Since manufacturers hold differing shares of the vehicle market in different Member States they would be differentially impacted by various national legislations potentially causing competitive distortions.

Coordinated and complementary action at European level is therefore necessary.

#### *Added value of EU action*

In view of the existing single market for new HDVs, it is most cost-effective to ensure harmonised action and set CO<sub>2</sub> emission targets on new HDVs at EU level. Even if all Member States were to establish regulatory requirements for new vehicle CO<sub>2</sub> emissions, poor coordination between countries, could raise compliance costs for manufacturers as well as weaken the incentive to design fuel efficient HDVs because of the fragmentation of the European market.

The additional costs, which would arise from the lack of common standards and common technical solutions or vehicle configurations would be incurred by both component suppliers and vehicle manufacturers. However, they ultimately would be passed on to consumers who would face higher vehicle costs.

The automotive industry requires as much regulatory certainty as possible if it is to make the large capital investments necessary to maximise the fuel economy of new vehicles, and even more so for shifting to alternative power-trains. Union-level harmonised standards provide this certainty over a long planning horizon and they could not be implemented with the same effectiveness and certainty at Member State level.

- **Proportionality**

The policy choices covered by the current proposal seek to regulate the CO<sub>2</sub> emissions from HDV. The proposal is strictly oriented on what is necessary to achieve the objectives set.

In view of that, the proposal complies with the proportionality principle. It sets emission standards in a cost-effective manner in order to achieve the required CO<sub>2</sub> emissions reductions from new HDV in line with the agreed EU 2030 climate and energy framework while at the same time ensuring a fair distribution of efforts among manufacturers.

Chapter 7 of the Impact Assessment accompanying the present proposal looks at the proportionality aspects of each of the outlined policy choices.

- **Choice of the instrument**

A Regulation is considered to be the appropriate legal instrument as it provides the required assurance for compliance with the CO<sub>2</sub> emission performance standards by manufacturers, whilst not requiring the transposition into Member States' legislation. The EU objective applies to the Union as a whole. It is therefore necessary to ensure that a uniform approach is applied in all Member States. Further, as explained above, a harmonised approach is required in order to avoid distortions of competition and risks of fragmentation of the internal market.

This choice is also consistent with the CO<sub>2</sub> emission performance standards for new passenger cars and light commercial vehicles laid down in Regulations (EC) 443/2009 and (EU) 510/2011.

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

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

No evaluation could be carried out in view of the absence of EU legislation setting CO<sub>2</sub> emission performance standards for HDVs.

- **Stakeholder consultations**

The Commission sought feedback from stakeholders through the following elements:

- (a) a public on-line consultation (20 November 2017 until 29 January 2018)
- (b) a stakeholder workshop (16 January 2018);
- (c) meetings with relevant industry associations representing vehicle manufacturers, components and materials suppliers, fuel suppliers.
- (d) meetings with Member State authorities, vehicle manufacturers, suppliers, social partners and NGOs;
- (e) position papers submitted by stakeholders and Member States.

A synopsis of the stakeholder consultation is provided in Annex 2 to the Impact Assessment accompanying this proposal.

The main outcomes of the stakeholder consultations can be summarised as follows.

When asked, by order of importance, which were their preferred options to reduce CO<sub>2</sub> emission from new HDVs and to contribute to the 2030 energy and climate targets, the preferred option across all stakeholders was legislation setting HDV CO<sub>2</sub> emission performance standards at EU level.

However, while all civil society organisations favour binding HDV CO<sub>2</sub> emission reduction targets at EU level, some HDV manufacturers and their associations expressed a preference for other measures via a comprehensive approach including legislation defining a CO<sub>2</sub> labelling scheme at EU level, inclusion of the transport sector in the EU Emissions Trading Scheme, other incentives such as fuel taxes at national level, or CO<sub>2</sub> based road charging.

While the setting up of CO<sub>2</sub> emission standards for HDVs is not the preferred option expressed by manufacturers, they have proposed setting both 2025 and 2030 CO<sub>2</sub> emission targets at the lower range of the options considered in the Impact Assessment, and called for a review of the 2030 target in early 2020s.

Environmental non-governmental organisations (NGOs) supported a single CO<sub>2</sub> target to apply from 2025 onwards, at a level corresponding to the higher range of the options considered, while suggesting to set the 2030 target at a later stage.

Regarding incentives for zero- and low-emission vehicles (ZEV/LEV), manufacturers expressed a preference for a super-credits scheme under which these vehicles would be counted multiple times for meeting the CO<sub>2</sub> manufacturer specific target. Environmental NGOs were in favour of either a mandate which would require manufacturers to register a minimum share of ZEV/LEV, or a flexible mandate under which the CO<sub>2</sub> target of a manufacturer would be relaxed if the share of ZEV/LEV would exceed a benchmark.

Cost-effective implementation was supported by all stakeholders, with manufacturers favouring the broadest possible flexibility and NGOs supporting only a trading scheme. Most stakeholders supported the setting up of a process for assessing the representativeness of the certified CO<sub>2</sub> emissions against real-world emissions.

- **Collection and use of expertise**

For the quantitative assessment of the economic, social and environmental impacts of the policy options, the Impact Assessment report relies on a suite of models and a dedicated set of cost curves covering a broad range of technologies for reducing CO<sub>2</sub> emissions from HDVs.

These cost curves, which show the CO<sub>2</sub> reduction potential and costs for over 50 technologies, were developed as part of a study carried out by Commission contractors<sup>13</sup> and work by the JRC<sup>14</sup>.

The PRIMES-TREMOVE model is used to project the evolution of the road transport sector for a range of scenarios. This model has been consistently used by the Commission for its climate, energy and transport initiatives. In addition, the DIONE model developed by DG JRC was used for the cost assessment and the macro-economic model EXIOMOD was used to quantify the impacts on GDP and sectoral turnover.

Further information was gathered through support studies commissioned from external contractors and involving the JRC, in particular addressing the following issues:

- elements potentially impacting industrial competitiveness and employment;
- the impact of different regulatory approaches, regulatory metrics and possible design elements (modalities);
- impacts on GHG and pollutant emissions.

Information on the data and analytical models used is presented in Chapter 6 and Annex 4 of the Impact Assessment.

- **Impact assessment**

The Impact Assessment accompanying this proposal has been prepared and developed in line with the applicable Better Regulation guidance. The Regulatory Scrutiny Board had issued a negative opinion on a first draft on 4 April 2018.

Improvements as recommended by the Board have been incorporated in a revised draft. This concerns the following main elements: (1) clarifications and expansion of the analysis of market failures, in particular with regards to market information asymmetries; (2) further analysis, better presentation and clarification on the readily available and prospective technologies as well as their related uncertainties – including through the inclusion of summary table of the technologies; (3) a better presentation of the past and future Commission's strategy to reduce CO<sub>2</sub> emissions from HDVs by 2030; (4) more information on basic assumptions behind the calculations on expected savings.

A second version of the draft Impact Assessment received a positive opinion by the Board on 19 April 2018. The final version includes further improvements recommended by the Board in its final opinion: (1) more information about the importance of earlier work on measuring, certification, monitoring and reporting, for regulating CO<sub>2</sub> emissions in the HDV sector; (2) better explanations of the inertia in developing fuel saving new technologies, and how transport market uncertainties lead operators to underinvest in fuel savings technologies.

### *Policy options*

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<sup>13</sup> "Heavy Duty Vehicles - support for preparation of impact assessment for CO<sub>2</sub>", study for the Commission by TNO, TUG, CE Delft and ICCT, report to be published;

<sup>14</sup> "Heavy Duty Vehicles CO<sub>2</sub> Emission Reduction Cost Curves and Cost Assessment – enhancement of the DIONE model", JRC, to be published

The policy options considered in the Impact Assessment are grouped into five key elements, aimed to address the identified problems and achieve the policy objectives.

### **1) EU fleet-wide CO<sub>2</sub> emission targets (scope, metric, metric unit, level, timing)**

In defining the EU fleet-wide CO<sub>2</sub> emission targets, the following aspects were taken into account: scope, metric, metric unit, level, timing.

With respect to the scope of the proposal, the options considered were either to cover the four main groups of vehicles which will be covered by the Certification regulation as of 1 January 2019 or to cover only the largest group, in both cases using whole-vehicle CO<sub>2</sub> standards. A third option analysed was the addition of engine-only CO<sub>2</sub> standards.

The preferred option is to cover the four vehicle groups with the highest CO<sub>2</sub> emission levels, applying whole-vehicle CO<sub>2</sub> standards. That will ensure maximum effectiveness in terms of environmental benefits and added value.

Concerning the metric for the targets, the options considered include a Tank-to-Wheel (TTW) and a Well-To-Wheel (WTW) approach. As regards metric units for expressing the targets, three options were considered, each of them capturing to a different degree the utility of HDV.

The preferred option is to use the TTW approach with targets set in g CO<sub>2</sub>/tkm. This ensures consistency with existing regulatory practice, avoiding double regulation and confusion of responsibilities between manufacturers and fuel suppliers. The metric unit also takes full account of the utility of the lorries covered.

A wide range of target levels and different timing options were assessed, covering the views expressed by stakeholders.

In view of the analysis carried out, the preferred option is to set binding CO<sub>2</sub> targets from 2025 reducing emissions compared to the 2019 levels, based on the deployment of readily available cost-effective technologies. For 2030, the uncertainties on the uptake of more advanced technologies not yet readily available are higher. This is why the preferred option is to set only an aspirational target for 2030. An early review should therefore be carried out in 2022 in order to: (i) set the mandatory target also for 2030; (ii) assess the modalities for implementation; (iii) review the scope in order to cover also smaller lorries, as well as buses, coaches and trailers.

Such an approach will provide a clear and early signal for investments on medium-term expectations and it will help Member States meeting the targets set under the Effort Sharing Regulation.

### **2) Distribution of EU fleet-wide target across vehicle groups and manufacturers**

While the EU fleet-wide CO<sub>2</sub> target defines the overall ambition level of the policy, its practical application requires consideration of the fleet composition of manufacturers in terms of its distribution over the different vehicle groups. Target compliance will have to be demonstrated at the manufacturer level. The distribution options considered include separate targets per HDV sub-group or a single target per manufacturer, calculated as the weighted average of all sub-group targets, taking into account the number of vehicles in each sub-group and their utility.

The preferred option is to have a single weighted average target for each manufacturer. This option scores best in term of efficiency and proportionality. It provides for flexibility by allowing for balancing an underperformance of vehicles in certain sub-groups with an overachievement for other vehicle sub-groups.

### **3) Incentives for zero- and low-emission vehicles (ZEV/LEV)**

The Impact Assessment considered four types of specific incentives for zero- and low-emission vehicles (ZEV/LEV). These include super-credits, a one- and two-way credit system linked to the targets, as well as a mandate.

Furthermore, a variant was assessed, extending the ZEV/LEV incentive by covering also other HDVs such as buses and smaller lorries which would initially not be subject to the CO<sub>2</sub> targets.

The preferred option is to set up a ZEV/LEV incentive in the form of super-credits with sufficient safeguards preventing a weakening of the CO<sub>2</sub> targets. This is found to be the most effective option considering the specific state of development and deployment of the zero- and low-emission technologies in the HDV sector.

### **4) Elements for cost-effective implementation**

Different elements that allow for cost-effective implementation were assessed. These include (1) exemptions for vocational vehicles, e.g. construction vehicles, garbage lorries, (2) pooling, (3) trading and (4) banking and borrowing.

Given the limited cost-effective CO<sub>2</sub> emission reduction potential for vocational vehicles due to their lower mileage and payloads compared to other HDV, the preferred option is to exempt these vehicles from the CO<sub>2</sub> emission reduction targets.

With respect to flexibilities, the preferred option is to provide for banking and borrowing of CO<sub>2</sub> credits across different compliance years, including the necessary safeguards to guarantee the environmental effectiveness of the legislation. This is the most effective and least market distorting option.

### **5) Governance related issues**

The effectiveness of the CO<sub>2</sub> targets in reducing real-world emissions depends on the one hand on the representativeness of the results of the VECTO simulation tool with respect to average real-world driving, and on the other hand on the extent to which the HDVs placed on the market conform to the reference vehicles tested at type approval. The options considered relate to real-world emissions, market surveillance and penalties.

The preferred options are the following:

- (a) To mandate the collection, publication and monitoring of real-world fuel consumption data reported by manufacturers, based on mandatory standardised fuel consumption meters.
- (b) To introduce in-service conformity tests and mandate the reporting of deviations and the introduction of a correction mechanism.
- (c) To apply financial penalties in case of non-compliance with the CO<sub>2</sub> targets.

These options will enhance the effectiveness, efficiency and the added-valued of the legislation.

Reference of the Executive Summary of the Impact Assessment: SWD(2018)186

Reference of the opinion of the Regulatory Scrutiny Board: SEC(2018) 233

#### **• Regulatory fitness and simplification**

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

The Impact Assessment has also analysed how to possibly simplify the legislation and reduce unnecessary administrative costs.

Exemptions from the CO<sub>2</sub> emission standards are foreseen for vocational vehicles.

Furthermore, the proposal contains several elements for cost-effective implementation such as banking and borrowing which reduce compliance costs for manufacturers.

The implementation of the proposed super-credit system for zero- and low-emission vehicles would not create additional administrative burden as it does not require additional reporting.

The impacts, in terms of administrative burden, of the options related to governance will depend on the concrete implementing measures.

The initiative in itself would not entail additional administrative costs for type-approval authorities. The costs related to certification and the monitoring and reporting of data on CO<sub>2</sub> emissions have been considered in the context of those proposals.

- **Fundamental rights**

The proposal respects the fundamental rights and observes the principles recognised in particular by the Charter of Fundamental Rights of the European Union.

#### **4. BUDGETARY IMPLICATIONS**

The budgetary impact resulting from the implementation of the proposed Regulation is very limited (see details in the attached Legislative Financial Statement).

#### **5. OTHER ELEMENTS**

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

The proposal builds on the Certification Regulation<sup>15</sup> and the Monitoring and Reporting Regulation<sup>16</sup>.

In application of the latter, the European Environment Agency (EEA) will combine the registration data from national authorities with the monitoring data from manufacturers and publish per manufacturer and vehicle group annual monitoring data for each certified new vehicle registered in the EU.

Moreover, this Impact Assessment puts forward the option of complementing the proposed Regulation on monitoring and reporting of CO<sub>2</sub> emissions data from HDV with the following two additional monitoring measures.

- the collection, publication, and monitoring of real-world fuel consumption data reported by manufacturers and based on mandatory fuel consumption meters;
- the introduction of in-service conformity tests and the obligation to report deviations from type approval values, combined with a correction mechanism.

These complementary monitoring measures would reinforce the monitoring process and would ensure the effectiveness of the proposed legislative initiative.

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

#### **Article 1 – Subject matter**

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<sup>15</sup> Commission Regulation (EU) 2017/2400 on the determination of carbon dioxide emissions and fuel consumption of HDV

<sup>16</sup> COM(2017) 0279 final

This Article sets out the objective of this Regulation which is to contribute to achieving the CO<sub>2</sub> emission reductions required as part of the Effort Sharing Regulation through emission reductions in the road transport sector. It also specifies the relative reduction targets to be achieved by the Union's fleet of new heavy-duty vehicles in the period 2025 to 2029. It sets out an aspirational 2030 target which should be determined subject to a review in 2022.

The targets are set as a relative reduction of the average specific emissions of the vehicles registered in the reference year 2019 which is the first year for which official monitored CO<sub>2</sub> emissions data will be available. The targets are attributed to each vehicle sub-group as defined in Section 1 of Annex I. Vocational vehicles (e.g. garbage trucks and construction lorries) do not have the same CO<sub>2</sub> reduction potential as heavy-duty vehicles used for the delivery of goods and they are therefore excluded from the calculation of the CO<sub>2</sub> reference emissions.

The CO<sub>2</sub> reference emissions are determined in accordance with Section 3 of Annex I.

## **Article 2 – Scope**

This Article defines the vehicles that fall within the scope of this Regulation by reference to the relevant categories defined in type approval legislation and to the four vehicle groups for which certified CO<sub>2</sub> emissions data will be available from 2019 onwards. Vehicles of the categories M2 (buses) and M3 (coaches) and vehicles of the category N (lorries) that fall outside the four abovementioned vehicle groups will not be subject to the CO<sub>2</sub> reduction requirements but should be taken into account for the purpose of the incentives given to zero- and low-emission vehicles (see Article 5).

Moreover, the provision specifies when vehicles are considered as newly registered for the purpose of the Regulation.

## **Article 3 - Definitions**

This Article sets out the definitions to be applied for the purpose of this Regulation.

## **Article 4 – Average specific emissions of a manufacturer**

According to this Article, the Commission shall determine and publish annually the average specific CO<sub>2</sub> emissions of each manufacturer starting from 2019. The data used as a basis for calculating the average emissions are reported by the manufacturers concerned pursuant to Regulation (EU) No .../2018. In order to reflect the utility and specificity of the vehicles, the individual heavy-duty vehicles shall be attributed to different vehicle sub-groups, where specific weightings are applied for the mission profiles (i.e. the vehicle usage patterns), the payloads and the annual mileages. Moreover, the manufacturer's share of vehicles in each vehicle sub-group is taken into account. Vocational vehicles of the categories N2 and N3 (e.g. garbage trucks, construction lorries) do not have the same CO<sub>2</sub> reduction potential as heavy-duty vehicles used for delivery of goods and therefore they shall not be included in the calculation of the average. The formulae for calculating the average specific emissions are set out in Section 2 of Annex I.

## **Article 5 – Zero- and low-emission heavy-duty vehicles**

In order to incentivize the deployment of zero- and low-emission heavy-duty vehicles, those vehicles shall be counted multiple times for the purpose of determining a manufacturer's average specific emissions starting from 2019. Manufacturers of zero- and low-emission vehicles shall benefit from such "super-credits" for each zero- and low-emission vehicle placed on the market with a different multiplying factor according to the vehicle's CO<sub>2</sub> emissions.

A specific incentive is also provided for zero-emission heavy-duty vehicles of the categories M2 (buses) and M3 (coaches) as well as certain category N vehicles (small lorries), including zero-emission vocational vehicles. While those categories of vehicles are not subject to CO<sub>2</sub> reduction requirements under this Regulation, they are nevertheless considered for the purpose of determining the zero- and low-emission factor.

Low-emission heavy-duty vehicles means heavy-duty vehicles with specific emissions below 350g CO<sub>2</sub>/km, i.e. about less than half of the average of the fleet emissions.

In order to preserve the environmental integrity of the targets, the lowering of the average specific emissions of the manufacturers through the incentive scheme for zero- and low-emission vehicles should be subject to a cap.

The formulae for calculating the zero- and low-emission factor is set out in point 2.3 of Annex I.

#### **Article 6 – Manufacturer specific emission targets**

This Article provides for the calculation of annual manufacturer specific emission targets for the preceding calendar year, starting in 2026. The first annual targets will therefore be determined for the calendar year 2025. The targets shall take into account the overall reduction targets for 2025 and 2030 respectively, as well as the utility and specificities of different heavy-duty vehicles in the same way as for the calculation of the average specific emissions. The annual specific emission targets of a manufacturer will therefore be calculated as a weighted average of the targets determined for each of the vehicle sub-groups.

The formulae for calculating the specific emission target are set out in Section 4 of Annex I.

#### **Article 7 – Emission credits and debts**

This Article sets out a ‘banking and borrowing’ mechanism, allowing a manufacturer to balance an underachievement of its specific emission target in one year by the overachievement in another year. For that purpose, the manufacturer may ‘bank’ emission credits, if its emissions are lower than a reduction trajectory determined as a linear trajectory from the 2019 reference CO<sub>2</sub> emissions to the 2025 targets and from the 2025 targets to the 2030 targets. Two different trajectories are needed to take into account that the slopes may differ depending on the exact targets determined for 2025 and 2030. In order to incentivize early emission reductions emission credits can be acquired already from 2019 to 2024, and likewise for the period 2025 to 2029. The emission credits acquired in the period 2019 to 2024 are taken into account for assessing the manufacturer’s compliance with its specific emission target in 2025 only. No further carry-over of credits acquired during the period from 2019 to 2024 will be allowed. Emission credits may also be acquired and used for the following period from 2025 to 2029. In case a manufacturer exceeds its target in any of the years from 2025 to 2029, it may acquire a limited emissions debt that must be cleared at the latest in 2029. The total emission debt may not exceed 5% of the manufacturer’s specific emission target in 2025, otherwise an excess emission premium shall be imposed in accordance with Article 8.

The emission credits and debts are elements defined for the purpose of the calculations but they shall not be considered as assets that are transferrable or subject to fiscal measures.

Section 5 of Annex I sets out the formulae for calculating the CO<sub>2</sub> reduction trajectory and the emission credits and debt.

#### **Article 8 – Compliance with specific emission targets**

Where a manufacturer is found to have excess emissions, taking account of the emission credits and debts acquired in accordance with Article 7, the Commission shall impose a financial penalty in the form of an excess emission premium. The level of the premium is set at 6 800 € per g/tkm, equivalent to 570 € per g/km based on an average payload of 12 tons, of excess emissions which reflect the marginal cost of CO<sub>2</sub> reducing technologies.

Section 6 of Annex I sets out the formulae for calculating the excess emissions. The methods for collecting the premiums shall be determined by means of an implementing act.

#### **Article 9 - Verification of the monitoring data**

This Article sets out a mechanism to introduce a procedure for in-service conformity checks of the CO<sub>2</sub> emission values from heavy-duty vehicles building on the type approval legislation. Type approval authorities shall report any deviations detected and the Commission shall take those into account when checking manufacturers' compliance with their targets. The provision includes an empowerment for the Commission to provide the details for such a procedure by way of an implementing act.

#### **Article 10 - Publication of data and manufacturer performance**

This Article lists the data that the Commission shall publish with regard to manufacturers' annual target compliance (i.e. the annual monitoring decision).

The Article also empowers the Commission to adjust the 2019 CO<sub>2</sub> reference emissions in accordance with well-defined procedures (set out in Article 12 and Annex II), in order to reflect adjustments of the payload values or changes in the type-approval procedure that have a non-negligible impact on the CO<sub>2</sub> emissions determined for a heavy-duty vehicle. The adjustment will affect the calculation of the manufacturers' specific emission targets, as of the year following its adoption.

#### **Article 11 – Real-world CO<sub>2</sub> emissions and energy consumption**

This Article provides an empowerment for the Commission to monitor and assess the real-world representativeness of the CO<sub>2</sub> emission values simulated with the VECTO, tool pursuant to Commission Regulation (EU) 2017/2400. For that purpose, the Commission should have the power to request real-world data to be collected and reported by Member States and manufacturers. This approach follows that proposed for light-duty vehicles and, as a first step, requires the introduction of mandatory standardised fuel consumption meters on board of heavy-duty vehicles.

#### **Article 12 - Adjustments to Annexes I and II**

Technical progress and changes in the type approval procedures may affect the level of the official CO<sub>2</sub> emission values determined for the heavy-duty vehicles falling within the scope of this Regulation. In order to consider these changes, this Article provides an empowerment for the Commission to adjust certain technical parameters set out in Annex I and II, including adoption of a methodology for determining a representative vehicle per each vehicle subgroup, on the basis of which those changes would be assessed. The adjustments proposed follow clearly defined steps set out in Sections 1 and 2 of Annex II.

#### **Article 13 - Review and report**

This Article requires the Commission to provide a report on the effectiveness of this Regulation, to be submitted in 2022. The report should address the emission reduction target for 2030 as well as the setting of reduction targets for other heavy-duty vehicles not yet subject to reduction requirements. The report should also cover the effectiveness of the modalities, i.e. the zero- and low-emission vehicles incentive system and the 'banking and

borrowing' mechanism, and consider the need for continuing those modalities beyond 2030. Where appropriate the report should be accompanied by a proposal for amending the Regulation.

### **Articles 14 and 15 - Comitology and delegation of powers**

These are standard provisions on the committee procedure and the delegation of powers.

### **Article 16 - Amendment to Regulation (EC) No 595/2009**

This amendment aims to introduce a legal basis in Regulation (EC) No 595/2009 (Euro 6 emissions type approval regulation) for the Commission to set up an in-service conformity procedure for verifying CO<sub>2</sub> emission from heavy-duty vehicles. This procedure is essential for an effective market surveillance of the type approval system and the CO<sub>2</sub> emission values used for target compliance purposes.

### **Annex I**

Annex I sets out the technical requirements and formulae for the following elements:

- Attribution to vehicle sub-groups
- Calculation of the average specific emissions of a manufacturer
- Calculation of the CO<sub>2</sub> reference emissions
- Calculation of the specific emission target for a manufacturer
- Calculation of the CO<sub>2</sub> reduction trajectory and the emission credits and debts
- Determination of a manufacturer's excess emissions

### **Annex II**

Annex II sets out the procedures for adjusting the CO<sub>2</sub> reference emissions, i.e. the payload adjustment factors (Section 1) and the methodology for taking into account changes to the type approval procedures (Section 2).

Proposal for a

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

**setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles**

(Text with EEA relevance)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty on the Functioning of the European Union, and in particular Article 192(1) thereof,

Having regard to the proposal from the European Commission,

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

Having regard to the opinion of the European Economic and Social Committee<sup>17</sup>,

Having regard to the opinion of the Committee of the Regions<sup>18</sup>,

Acting in accordance with the ordinary legislative procedure,

Whereas:

- (1) The European Strategy for Low-Emission Mobility sets a clear ambition: by mid-century, greenhouse gas emissions from transport will need to be at least 60% lower than in 1990 and be firmly on the path towards zero. Emissions of air pollutants from transport that harm our health need also to be drastically reduced without delay.
- (2) Following the Low-Emission Mobility Strategy, the Commission adopted two mobility packages in May<sup>19</sup> and November 2017<sup>20</sup>. These packages set out a positive agenda delivering on the Low-Emission Mobility Strategy and ensuring a smooth transition towards clean, competitive and connected mobility for all.
- (3) This Regulation is part of the third "Europe on the Move" Package, which delivers on the new industrial policy strategy of September 2017<sup>21</sup>, and is designed to complete the process of enabling the Union to reap the full benefits of the modernisation and decarbonisation of mobility. The aim of the Package is to make European mobility safer and more accessible, European industry more competitive, European jobs more secure, and the mobility system to be cleaner and better adapted to the imperative of tackling climate change. This will require the full commitment of the Union, Member States and stakeholders, not least in strengthening efforts to reduce CO<sub>2</sub> emissions and air pollution.

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<sup>17</sup> OJ C , , p. .

<sup>18</sup> OJ C , , p. .

<sup>19</sup> Europe on the Move: An agenda for a socially fair transition towards clean, competitive and connected mobility for all, COM(2017) 283 final

<sup>20</sup> Delivering on low-emission mobility A European Union that protects the planet, empowers its consumers and defends its industry and workers, COM(2017) 675 final

<sup>21</sup> Investing in a smart, innovative and sustainable Industry A renewed EU Industrial Policy Strategy, COM(2017) 0479 final

- (4) This Regulation provides, together with the CO<sub>2</sub> emission standards for passenger cars and light commercial vehicles<sup>22</sup>, a clear pathway for CO<sub>2</sub> emissions reductions from the road transport sector and contributes to the binding target of at least a 40% domestic reduction in economy-wide greenhouse gas emissions by 2030 compared to 1990, as was endorsed in the Conclusions of the European Council of 23-24 October 2014, and approved as the Union Intended Nationally Determined Contribution under the Paris Agreement at the Environment Council meeting on 6 March 2015.
- (5) The European Council Conclusions of October 2014 endorsed a greenhouse gas emissions reduction of 30% by 2030 compared to 2005 for the sectors that are not part of the Union's emissions trading system. Road transport provides a major contribution to the emissions of those sectors and its emissions remain significantly above 1990 levels. If road transport emissions would increase further, it will off-set reductions made by other sectors to combat climate change.
- (6) The European Council Conclusions of October 2014 highlighted the importance of reducing greenhouse gas emissions and risks related to fossil fuel dependency in the transport sector through a comprehensive and technology neutral approach for the promotion of emissions reduction and energy efficiency in transport, for electric transportation and for renewable energy sources in transport also after 2020.
- (7) Energy efficiency contributing to moderation of demand is one of the five mutually-reinforcing and closely interrelated dimensions of the Energy Union Strategy adopted on 25 February 2015, to give consumers in the Union secure, sustainable, competitive and affordable energy. The Energy Union Strategy states that, while all economic sectors must take steps to increase the efficiency of their energy consumption, transport has a huge energy efficiency potential.
- (8) CO<sub>2</sub> emissions from heavy-duty vehicles, including lorries, buses and coaches, represent around 6% of total CO<sub>2</sub> emissions in the Union and about 25% of total road transport CO<sub>2</sub> emissions. Without further action taken, the share of emissions from heavy-duty vehicles is expected to grow by around 9% between 2010 and 2030. Currently, Union law does not set any CO<sub>2</sub> reduction requirements for heavy-duty vehicles.
- (9) In order to fully realise the energy efficiency potential and ensure that the road transport sector as a whole contributes to the greenhouse gas emission reductions agreed, it is appropriate to complement the already existing CO<sub>2</sub> emission standards for new passenger cars and light commercial vehicles by setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles. These standards will be a driver for innovation in fuel-efficient technologies, contributing to the strengthening of the technological leadership of the Union's manufacturers and suppliers.
- (10) Taking into account that climate change is a trans-boundary problem and the need to safeguard a well-functioning single market both for road transport services as well as for heavy-duty vehicles, it is appropriate to set CO<sub>2</sub> emission standards for heavy-duty vehicles at Union-level. Those standards should be designed so as to be without prejudice to competition law.

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<sup>22</sup> Regulation (EU) No .../... of the European Parliament and of the Council setting emission performance standards for new passenger cars and for light commercial vehicles as part of the Union's integrated approach to reduce CO<sub>2</sub> emission from light duty vehicles and amending Regulation (EC) No 715/2007, (OJ L, ....., p. ).

- (11) In defining the reduction levels that should be achieved by the Union's fleet of heavy-duty vehicles, account should be taken of the effectiveness of those reduction levels in delivering a cost-effective contribution to reducing emissions of the sectors covered by the Regulation [Effort Sharing (EU) No .../2018] by 2030, of the resulting costs and savings for society, manufacturers, transport operators, consumers, as well as of their direct and indirect implications for employment, innovation and co-benefits generated in terms of reduced air pollution and improved energy security.
- (12) A new procedure for determining the CO<sub>2</sub> emissions and fuel consumption of individual heavy-duty vehicles has been introduced as part of the implementation of Regulation (EC) No 595/2009<sup>23</sup>. Commission Regulation (EU) 2017/2400<sup>24</sup> provides a methodology, based on the VECTO tool, through which the CO<sub>2</sub> emissions and fuel consumption of whole heavy-duty vehicles can be simulated. The methodology allows taking into account the diversity of the heavy-duty vehicle sector and the high degree of customisation of individual vehicles. In a first step, from 1 January 2019, the CO<sub>2</sub> emissions are determined for four groups of heavy-duty vehicles that account for around 65% to 70% of all CO<sub>2</sub> emissions from the Union's fleet of heavy-duty vehicles.
- (13) In the light of innovation and to take account of the implementation of new technologies improving the fuel efficiency of heavy-duty vehicles, the VECTO simulation tool as well as Regulation (EU) 2017/2400 will be continuously and timely updated.
- (14) The CO<sub>2</sub> emissions data determined pursuant to Regulation (EU) 2017/2400 are to be monitored under Regulation (EU) No .../2018 of the European Parliament and of the Council<sup>25</sup>. Those data should form the basis for determining the reduction targets to be achieved by the four groups of the most emitting heavy-duty vehicles in the Union, as well as for determining a manufacturer's average specific emissions in a given calendar year.
- (15) A reduction target should be set for 2025 as a relative reduction based on the average CO<sub>2</sub> emissions of those heavy-duty vehicles in 2019, reflecting the deployment of readily available cost-effective technologies for conventional vehicles. The 2030 target should be considered aspirational and the final target should be determined pursuant to a review to be carried out in 2022 as there are more uncertainties on the uptake of more advanced technologies which are not yet readily available.
- (16) Liquefied natural gas (LNG) is an available alternative fuel to diesel for heavy duty vehicles. The deployment of current and upcoming more innovative LNG-based technologies will contribute to meeting the CO<sub>2</sub> emission targets in the short and

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<sup>23</sup> Regulation (EC) No 595/2009 of the European Parliament and of the Council of 18 June 2009 on type-approval of motor vehicles and engines with respect to emissions from heavy-duty vehicles (Euro VI) and on access to vehicle repair and maintenance information and amending Regulation (EC) No 715/2007 and Directive 2007/46/EC and repealing Directives 80/1269/EEC, 2005/55/EC and 2005/78/EC

<sup>24</sup> Commission Regulation (EU) 2017/2400 of 12 December 2017 implementing Regulation (EC) No 595/2009 of the European Parliament and of the Council as regards the determination of the CO<sub>2</sub> emissions and fuel consumption of heavy-duty vehicles and amending Directive 2007/46/EC of the European Parliament and of the Council and Commission Regulation (EU) No 582/2011, OJ L 349, 29.12.2017, p. 1.

<sup>25</sup> Regulation (EU) No .../2018 of the European Parliament and of the Council on the monitoring and reporting of CO<sub>2</sub> emissions from and fuel consumption of new heavy-duty vehicles, OJ L.....,....

medium term as the use of LNG technologies leads to lower CO<sub>2</sub> emissions as compared to diesel vehicles. The CO<sub>2</sub> emission reduction potential of LNG vehicles is already fully reflected in VECTO. In addition, current LNG technologies ensure a low level of air pollutant emissions such as NO<sub>x</sub> and particulate matters. A sufficient minimum refuelling infrastructure is also in place and being further deployed as part of national policy frameworks for alternative fuel infrastructure.

- (17) In calculating the 2019 reference emissions serving as basis for determining the 2025 and 2030 reduction targets, the expected reduction potential of the heavy-duty fleet in that period should be taken into account. It is therefore appropriate to exclude from that calculation, vocational vehicles such as vehicles used for garbage collection or construction works. Those vehicles have a comparatively low mileage, and due to their specific driving pattern, technical measures for reducing CO<sub>2</sub> emissions and fuel consumption do not appear to be cost effective in the same way as for heavy-duty vehicles used for the delivery of goods.
- (18) The CO<sub>2</sub> reduction requirements should be expressed in grams of CO<sub>2</sub> per tonne kilometre to reflect the utility of the heavy-duty vehicles.
- (19) A fair distribution of the overall reduction requirements among the manufacturers needs to be ensured, taking into account the diversity of heavy-duty vehicles in terms of their design and driving pattern, annual mileage, payload and trailer configuration. It is therefore appropriate to distinguish the heavy-duty vehicles according to different and separate vehicle sub-groups that reflect the vehicles' typical usage pattern and specific technical characteristics. By setting annual manufacturer specific targets as a weighted average of the targets defined for each such sub-group, manufacturers are also given the means to effectively balance a possible underperformance of vehicles in certain sub-groups with an overachievement in other vehicle sub-groups, taking into account the average lifetime CO<sub>2</sub> emissions of vehicles in the different sub-groups.
- (20) A manufacturer's compliance with its annual specific targets should be assessed on the basis of its average CO<sub>2</sub> emissions. In determining the average specific emissions, the specificities that are reflected in the different vehicle sub-group targets should also be considered. As a consequence, the average specific CO<sub>2</sub> emissions of a manufacturer should be based on the average emissions determined for each sub-group including a weighting based on their assumed average annual mileage and average payload, which reflects the total lifetime CO<sub>2</sub> emissions. Due to the limited reduction potential of vocational vehicles, those vehicles should not be taken into account for the calculation of the average specific emissions.
- (21) Contrary to cars and vans, zero- and low-emission heavy-duty vehicles are not yet available on the market, except for buses. A dedicated mechanism, in the form of super credits, should therefore be introduced to facilitate a smooth transition towards zero-emission mobility. This will provide incentives for the development and deployment on the Union market of zero- and low-emission heavy-duty vehicles that would complement demand-side instruments, such as the Clean Vehicle Directive 2009/33/EC of the European Parliament and of the Council<sup>26</sup>.

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<sup>26</sup> Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles as amended by Directive .../.../EU [COM(2017) 653 final] (OJ L 120, 15.5.2009, p. 5).

- (22) For the purpose of calculating the average specific emissions of a manufacturer, all zero- and low-emission heavy-duty vehicles should therefore be counted multiple times. The level of incentives should vary according to the actual CO<sub>2</sub> emissions of the vehicle. In order to avoid a weakening of the environmental objectives, the resulting savings should be subject to a cap.
- (23) Low-emission heavy-duty vehicles should only be incentivised if their CO<sub>2</sub> emissions are less than about half of the CO<sub>2</sub> emissions of the Union fleet-wide average in 2025. This is consistent with the approach taken for light-duty vehicles and would incentivise innovation in this field
- (24) In designing the incentive mechanism for the deployment of zero-emission heavy-duty vehicles, also smaller lorries, buses and coaches that are not subject to the CO<sub>2</sub> emission targets under this Regulation should be included. These vehicles also have significant benefits in terms of helping to address air pollution problems in cities. However, it should be noted that zero-emission buses are already on the market and are incentivised through demand-side measures such as public procurement. In order to ensure that the incentives are well balanced between the different types of vehicles, the savings resulting from the zero-emission smaller lorries, buses and coaches should therefore also be subject to a cap.
- (25) In order to promote a cost-effective implementation of the CO<sub>2</sub> reduction requirements, while taking into account fluctuations in the fleet composition and emissions over the years, manufacturers should have the possibility to balance their overachievement in complying with their specific emission target in one year with an underperformance in another year.
- (26) In order to incentivise early reduction achievements, a manufacturer, whose average specific emissions are below the emission reduction trajectory defined by the reference emissions in 2019 and the 2025 target, should be able to bank those emission credits for the purpose of target compliance in 2025. Similarly, a manufacturer, whose average specific emissions are below the emission reduction trajectory between the 2025 and the 2030 targets, should be able to bank those emission credits for the purpose of target compliance in the period 2025 to 2029.
- (27) In case of non-compliance with its specific emission target in any of the years 2025 to 2029, a manufacturer should also have the possibility to acquire a limited emission debt. However, by 2029 manufacturers should clear any remaining emission debt.
- (28) Emission credits and debts should be considered only for the purpose of determining a manufacturer's compliance with its specific emission target and not as assets that are transferrable or subject to fiscal measures.
- (29) The Commission should impose a financial penalty, in the form of an excess emissions premium, where a manufacturer is found to have excess emissions, taking into account the emission credits and debts. In order to provide manufacturers with a sufficient incentive to take measures to reduce the specific CO<sub>2</sub> emissions from heavy-duty vehicles, the premium should exceed the average marginal costs of the technologies needed to meet the targets. The premium should be considered as revenue for the general budget of the Union. The methodology for collecting the premiums should be determined by means of an implementing act, taking into account the methodology adopted pursuant to Regulation (EC) No 443/2009.
- (30) A robust compliance mechanism is necessary in order to ensure that the targets under this Regulation are met. The obligations placed on manufacturers to deliver accurate

data pursuant to Regulation (EU) No .../2018 [Monitoring & Reporting HDV] and the administrative fines that may be imposed in the case of non-compliance with that obligation, contributes to ensuring the robustness of the data used for target compliance purposes under this Regulation.

- (31) It is essential for achieving the CO<sub>2</sub> reductions pursuant to this Regulation that the CO<sub>2</sub> emissions of heavy-duty vehicles in use are in conformity with the values determined pursuant to Regulation (EC) No 595/2009 and its implementing measures. It should therefore be possible for the Commission to take into account, in the calculation of the average specific emissions of a manufacturer, any systematic non-conformity found by type approval authorities with regard to the CO<sub>2</sub> emissions of heavy-duty vehicles in use.
- (32) In order to be in a position to take such measures the Commission should have the powers to prepare and implement a procedure for verifying the in-service conformity of the CO<sub>2</sub> emissions of heavy-duty vehicles on the market. For that purpose Regulation (EC) No 595/2009 should be amended.
- (33) The effectiveness of the targets set out in this Regulation in reducing CO<sub>2</sub> emissions is strongly dependent on the representativeness of the methodology used for determining the CO<sub>2</sub> emissions. In line with the Opinion of the Scientific Advice Mechanism (SAM)<sup>27</sup> as regards light duty vehicles, it is appropriate also in the case of heavy-duty vehicles to put in place a mechanism to assess the real-world representativeness of the CO<sub>2</sub> emissions and energy consumption values determined pursuant to Regulation (EU) 2017/2400. The Commission should have the powers to ensure the public availability of such data and, where necessary, develop the procedures needed for identifying and collecting the data required for such assessments.
- (34) In 2022, the Commission should assess the effectiveness of the CO<sub>2</sub> emission standards laid down in this Regulation and in particular the level of the reductions to be achieved by 2030, the modalities that should be available for achieving that target and beyond, as well as the setting of CO<sub>2</sub> reduction targets to other types of heavy-duty vehicles such as smaller lorries, buses, coaches and trailers. That assessment should also include, strictly for the purpose of this Regulation, considerations of heavy-duty vehicles and vehicle combinations beyond standard weights and dimensions applicable to national transport, for example Modular Concepts.
- (35) In order to ensure that the specific CO<sub>2</sub> emissions of heavy-duty vehicles remain representative and fully up-to-date, amendments to Regulation (EC) No 595/2009 and its implementing legislation that affect those values need be reflected in this Regulation. For that purpose, the Commission should have the powers to determine a methodology for defining a representative heavy-duty vehicle for each vehicle sub-group, on the basis of which changes of the specific CO<sub>2</sub> emissions should be assessed.

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<sup>27</sup> High Level Group of Scientific Advisors, Scientific Opinion 1/2016 “Closing the gap between light-duty vehicle real-world CO<sub>2</sub> emissions and laboratory testing”

- (36) The implementing powers relating to Articles 8(3), 9(3), 11(3) and 12(2), should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council<sup>28</sup>.
- (37) In order to amend or supplement non-essential elements of the provisions of this Regulation, the power to adopt acts in accordance with Article 290 of the Treaty of the Functioning of the European Union should be delegated to the Commission in respect of adjusting the reference CO<sub>2</sub> emissions pursuant to Article 12(2) and in respect of amending Annexes I and II as regards certain technical parameters, including the weightings of the mission profiles, the payloads, and the annual mileages as well as the payload adjustment factors. 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<sup>29</sup>. In particular, to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council should receive all documents at the same time as Member States' experts, and their experts should systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.
- (38) Since the objectives of this Regulation, namely the establishment of CO<sub>2</sub> emissions performance standards for new heavy-duty vehicles, cannot be achieved by the Member States, and can therefore, by reason of its scale and effects, be better achieved at Union level, the Union may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on the 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 that objective,

HAVE ADOPTED THIS REGULATION:

*Article 1*  
*Subject matter and objective*

In order to contribute to fulfilling the Union's target of reducing its greenhouse gas emissions by 30% below 2005 levels in 2030 in the sectors covered by Article 2 of Regulation (EU) No 2018/...[Effort Sharing Regulation], and to achieving the objectives of the Paris Agreement and to ensure the proper functioning of the internal market, this Regulation sets CO<sub>2</sub> emission performance standards for new heavy-duty vehicles whereby the specific CO<sub>2</sub> emissions of the Union's fleet of new heavy-duty vehicles shall be reduced compared to the reference CO<sub>2</sub> emissions as follows:

- (a) From 1 January 2025 to 31 December 2029 by 15%;
- (b) From 1 January 2030 onwards by at least 30% subject to the review pursuant to Article 13.

The reference CO<sub>2</sub> emissions shall be based on the 2019 monitoring data reported pursuant to Regulation (EU) No .../2018 [HDV M&R], excluding vocational vehicles, and shall be calculated in accordance with Point 3 of Annex I.

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<sup>28</sup> Regulation (EU) No 182/2011 of the European Parliament and of the Council of 16 February 2011 laying down the rules and general principles concerning mechanisms for control by Member States of the Commission's exercise of implementing powers (OJ L, 55, 28.2.2011, p. 13).

<sup>29</sup> OJ L 123, 12.5.2016, p. 1.

## *Article 2*

### *Scope*

1. This Regulation shall apply to new vehicles of the categories N2 and N3 that meet the following characteristics:
  - (a) rigid lorries with an axle configuration of 4x2 and a technically permissible maximum laden mass exceeding 16 tons;
  - (b) rigid lorries with an axle configuration of 6x2;
  - (c) tractors with an axle configuration of 4x2 and a technically permissible maximum laden mass exceeding 16 tons;
  - (d) tractors with an axle configuration of 6x2.

It shall also apply, for the purposes of Article 5 and point 2.3 of Annex I, to vehicles of the categories M2 and M3, and to vehicles of the category N that do not fall within the scope of Regulation (EU) No 510/2011 and do not meet the characteristics set out in points (a) to (d).

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

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

## *Article 3*

### *Definitions*

For the purposes of this Regulation, the following definitions shall apply:

- (a) ‘reference CO<sub>2</sub> emissions’ means the average of the specific emissions in 2019 of all new heavy-duty vehicles in each of the vehicle sub-groups, excluding vocational vehicles, determined in accordance with point 3 of Annex I;
- (b) ‘specific emissions’ means the CO<sub>2</sub> emissions of an individual heavy-duty vehicle determined in accordance with point 2.1 of Annex I;
- (c) ‘average specific emissions’ means the average of the specific emissions of a manufacturer’s new heavy-duty vehicles in a given calendar year determined in accordance with point 2.7 of Annex I;
- (d) ‘specific emission target’ means the target of an individual manufacturer, expressed in g/tkm and determined annually for the preceding calendar year in accordance with point 4 of Annex I;
- (e) ‘rigid lorry’ means a lorry that is not designed or constructed for the towing of a semi-trailer’;
- (f) ‘tractor’ means a tractor unit that is designed and constructed exclusively or principally to tow semi-trailers;
- (g) ‘vehicle sub-group’ means a grouping of vehicles as defined in Point 1 of Annex I, that are characterised by a common and distinctive set of technical criteria relevant for determining the CO<sub>2</sub> emissions and fuel consumption of those vehicles;

- (h) 'vocational vehicle' means a heavy-duty vehicle not intended for the delivery of goods and for which the CO<sub>2</sub> emissions and fuel consumption have been determined, in accordance with Regulation (EC) No 595/2009 and its implementing measures, only for other mission profiles than those defined in point 2.1 of Annex I to this Regulation;
- (i) 'manufacturer' means the person or body responsible for submitting the data relating to new heavy-duty vehicles pursuant to Article 5 of Regulation (EU) No .../2018 or, in the case of zero-emission heavy-duty vehicles, the person or body responsible to the approval authority for all aspects of the EC whole vehicle type-approval procedure or of the individual approval in accordance with Directive 2007/46/EC and for ensuring conformity of production;
- (j) 'zero emission heavy-duty vehicle' means a heavy-duty vehicle without an internal combustion engine, or with an internal combustion engine that emits less than 1 g CO<sub>2</sub>/kWh as determined pursuant to Regulation (EC) No 595/2009 and its implementing measures, or which emits less than 1 g CO<sub>2</sub>/km as determined pursuant to Regulation (EC) No 715/2007 and its implementing measures;
- (k) 'low-emission heavy-duty vehicle' means a heavy-duty vehicle, which is not a zero emission heavy-duty vehicle, with specific CO<sub>2</sub> emissions of less than 350 g CO<sub>2</sub>/km as determined pursuant to point 2.1 of Annex I;
- (l) 'mission profile' means a combination of a target speed cycle, a payload value, a body or trailer configuration and other parameters, if applicable, reflecting the specific use of a vehicle, on the basis of which official CO<sub>2</sub> emissions and fuel consumption of a heavy-duty vehicle are determined;
- (m) 'target speed cycle' means the description of the vehicle velocity, which the driver wants to reach or to which he is limited by traffic conditions, as a function of the distance covered in a trip;
- (n) 'payload' means the weight of the goods or of persons that a vehicle is carrying under different conditions.

#### *Article 4*

##### *Average specific emissions of a manufacturer*

Starting from 2020 and in each subsequent calendar year, the Commission shall, by means of implementing acts referred to in Article 10(1), determine for each manufacturer the average specific CO<sub>2</sub> emissions in g/tkm for the preceding calendar year, by taking into account the following:

- (a) the data reported pursuant to Regulation (EU) No .../2018 [monitoring & reporting HDV] for the manufacturer's new heavy-duty vehicles registered in the relevant year, excluding vocational vehicles;
- (b) the zero- and low-emission factor determined in accordance with Article 5.

The average specific emissions shall be calculated in accordance with Point 2.7 of Annex I.

#### *Article 5*

##### *Zero- and low-emission heavy-duty vehicles*

1. Starting from 2020 and for each subsequent calendar year, the Commission shall, by means of implementing acts referred to in Article 10(1), determine for each

manufacturer the zero- and low-emission factor referred to in Article 4(b) for the preceding calendar year.

The zero- and low-emission factor shall take into account the number and the CO<sub>2</sub> emissions of zero- and low-emission heavy-duty vehicles in the manufacturer's fleet in a calendar year, including zero- emission vehicles of the categories referred to in the second sub-paragraph of Article 2(1), as well as zero- and low-emission vocational vehicles.

The zero- and low-emission factor shall be calculated in accordance with point 2.3 of Annex I.

2. For the purpose of paragraph 1, the zero- and low-emission heavy-duty vehicles shall be counted as follows:
  - (a) a zero-emission heavy-duty vehicle shall be counted as 2 vehicles;
  - (b) a low-emission heavy-duty vehicle shall be counted as up to 2 vehicles according to a function of its specific CO<sub>2</sub> emissions and the threshold emission level of 350 g CO<sub>2</sub>/km.
3. The zero- and low-emission factor shall reduce the average specific emissions of a manufacturer by a maximum of 3% . The contribution of zero-emission heavy-duty vehicles of the categories referred to in the second sub-paragraph of Article 2(1) to that factor shall reduce the average specific emissions of a manufacturer by a maximum of 1.5%.

#### *Article 6*

##### *Manufacturer specific emission targets*

Starting from 2026 and for each subsequent calendar year, the Commission shall, by means of implementing acts referred to in Article 10(1), determine for each manufacturer a specific emission target for the preceding calendar year. The specific emission target shall be the sum over all vehicle-subgroups of the products of the following values:

- (a) the CO<sub>2</sub> reduction target referred to in Article 1 (a) or (b), as applicable;
- (b) the CO<sub>2</sub> reference emissions;
- (c) the manufacturer's share of vehicles in each vehicle sub-group;
- (d) the annual mileage and payload weighting factors applied to each sub-group.

The specific emission target shall be calculated in accordance with Point 4 of Annex I.

#### *Article 7*

##### *Emission credits and debts*

1. For the purpose of determining a manufacturer's compliance with its specific emission targets in the period 2025 to 2029, account shall be taken of its emission credits or emission debts, which correspond to the number of new heavy-duty vehicles, excluding vocational vehicles, of the manufacturer in a calendar year, multiplied by the difference between:
  - (a) the CO<sub>2</sub> reduction trajectory referred to in paragraph 2 and the average specific emissions of a manufacturer, if the difference is positive ('emission credits');

- (b) the average specific emissions and the specific emission target of a manufacturer, if that difference is positive ('emission debts').

Emission credits shall be acquired over the period 2019 to 2029. However, the credits acquired over the period 2019 to 2024 shall be taken into account for the purpose of determining the manufacturer's compliance with the 2025 specific emission target only.

Emission debts shall be acquired over the period 2025 to 2029, but the total debt shall not exceed 5% of the manufacturer's specific emission target in 2025 multiplied by the number of heavy-duty vehicles of the manufacturer in that year ('emission debt limit').

Emission credits and debts acquired in 2025 and any of the subsequent calendar years until 2028 shall, where available, be carried-over from one calendar year to another until 2029 when any remaining emission debts shall be cleared.

2. The CO<sub>2</sub> reduction trajectory referred to in paragraph 1(a) shall be set for each manufacturer in accordance with point 5.1 of Annex I, based on a linear trajectory between the reference CO<sub>2</sub> emissions referred to in the second sub-paragraph of Article 1 and the 2025 target specified in point (a) of that Article, and between the 2025 target and the 2030 target specified in point (b) of that Article.

#### *Article 8*

##### *Compliance with the specific emission targets*

1. Where a manufacturer is found to have excess emissions pursuant to paragraph 2 in a given calendar year from 2025 onwards, the Commission shall impose an excess emission premium calculated in accordance with the following formula:

$$(\text{Excess emission premium}) = (\text{Excess emissions} \times 6\,800 \text{ €/gCO}_2/\text{tkm})$$

2. A manufacturer shall be deemed to have excess emissions in any of the following cases:
- (a) Where, in any of the calendar years from 2025 to 2028, 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);
  - (b) In the calendar year 2029, where the sum of the emission debts reduced by the sum of the emission credits exceeds zero;
  - (c) In the calendar years from 2030 onwards, where the manufacturer's average specific emissions exceed its specific emission target.

The excess emissions in a given calendar year shall be calculated in accordance with Point 6 of Annex I.

3. The Commission shall determine the means for collecting excess emissions premiums under paragraph 1 by means of implementing acts. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 14(2).
4. The amounts of the excess emissions premium shall be considered as revenue for the general budget of the Union.

*Article 9*  
*Verification of the monitoring data*

1. Type approval authorities shall, without delay, report to the Commission deviations found in the CO<sub>2</sub> emissions of heavy-duty vehicles in service as compared to those values that are indicated in certificates of conformity or in the customer file as a result of verifications performed in accordance with the procedure referred to in [Article 5(4)(1)] of Regulation (EC) No 595/2009.
2. The Commission shall take those deviations into account for the purpose of calculating the average specific emissions of a manufacturer.
3. The Commission shall adopt detailed rules on the procedures for reporting such deviations and for taking them into account in the calculation of the average specific emissions. Those procedures shall be adopted by way of implementing acts in accordance with the examination procedure referred to in Article 14(2).

*Article 10*  
*Publication of data and manufacturer performance*

1. The Commission shall, by means of implementing acts to be adopted by 31 October each year, publish a list indicating:
  - (a) from 2020, for each manufacturer its average specific emission of CO<sub>2</sub> in the preceding calendar year, referred to in Article 4;
  - (b) from 2020, the zero- and low-emission factor, referred to in Article 5;
  - (c) from 2026, for each manufacturer its specific emission target for the preceding calendar year, referred to in Article 6;
  - (d) from 2020 until 2030, for each manufacturer its CO<sub>2</sub> reduction trajectory, its emission credits and, from 2026, its emission debts in the preceding year, referred to in Article 7;
  - (e) from 2026, for each manufacturer its excess emissions in the preceding calendar year, referred to in Article 8;
  - (f) from 2020, the average of the specific emissions of CO<sub>2</sub> of all new heavy-duty vehicles registered in the Union in the preceding calendar year.

The list shall, for the publication by 31 October 2020, include the reference CO<sub>2</sub> emissions referred to in Article 1.

2. The Commission shall adopt delegated acts in accordance with Article 15 to adjust the reference CO<sub>2</sub> emissions referred to in paragraph 1 of this Article in accordance with the following:
  - (a) where the payload values have been adjusted pursuant to Article 12(1)(c), in accordance with the procedure set out in Point 1 of Annex II;
  - (b) where an adjustment factor has been determined pursuant to Article 12(2), by applying that adjustment factor to the reference CO<sub>2</sub> emissions.

The Commission shall publish the adjusted reference CO<sub>2</sub> emission values and shall apply those values for the calculation of the manufacturer specific emission targets applicable in the calendar years following the entry into force of the delegated acts adjusting the values.

*Article 11*  
*Real-world CO<sub>2</sub> emissions and energy consumption*

1. The Commission shall monitor and assess the real-world representativeness of the CO<sub>2</sub> emissions and fuel consumption values determined in accordance with Regulation (EU) 2017/2400. It shall ensure that the public is informed of how that representativeness evolves over time.
2. For that purpose, the Commission shall ensure the availability, from manufacturers or national authorities, as the case may be, of robust non-personal data on real-world CO<sub>2</sub> emissions and energy consumption of heavy-duty vehicles.
3. The Commission may adopt, by means of implementing acts, the measures referred to in paragraphs 1 and 2 of this Article. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 14(2).

*Article 12*  
*Adjustments to Annexes I and II*

1. In order to ensure that the technical parameters used for the calculation of the average specific emissions of a manufacturer pursuant to Article 4 and the calculation of the specific emission targets pursuant to Article 6 take into account technical progress and the evolution of freight transport logistics, the Commission shall be empowered to adopt delegated acts in accordance with Article 15 to amend the following provisions set out in Annexes I and II
  - (a) The entries for cab type and engine power set out in Table 1 of Annex I and the definitions of ‘sleeper cab’ and ‘day cab’ referred to in that Table;
  - (b) The mission profile weights set out in Table 2 of Annex I;
  - (c) The payload values set out in Table 3 of Annex I, and the payload adjustment factors set out in Table 1 of Annex II;
  - (d) The annual mileage values set out in Table 4 of Annex I.
2. Where the type-approval procedures laid down in Regulation (EC) No 595/2009 and its implementing measures are modified so that the level of the CO<sub>2</sub> emissions of the representative vehicles defined pursuant to this paragraph increase or decrease by more than 5 g CO<sub>2</sub>/km, the Commission shall, in accordance with Article 10(2)(b), apply an adjustment to the reference CO<sub>2</sub> emissions referred to in Article 11(1) that shall be calculated in accordance with the formula set out in Point 2 of Annex II.

The Commission shall, by way of implementing acts adopted in accordance with the examination procedure set out in Article 14(2), establish a methodology for defining one or more representative vehicles of a vehicle sub-group, including their statistical weightings, on the basis of which that adjustment shall be determined, taking into account the monitoring data reported pursuant to Regulation (EU) No .../2018 and the technical characteristics of the vehicles listed in Article 12(1) of Regulation (EU) 2017/2400.

*Article 13*  
*Review and report*

By 31 December 2022, the Commission shall submit a report to the European Parliament and the Council on the effectiveness of this Regulation, the CO<sub>2</sub> reduction target to be determined

for 2030 pursuant to Article 1 and the setting of CO<sub>2</sub> reduction targets to other types of heavy-duty vehicles including trailers. That report shall also include an assessment of the effectiveness of the modalities addressing, in particular, zero- and low-emission vehicles, notably buses taking into account the targets set out in Directive 2009/33/EC<sup>30</sup>, and the CO<sub>2</sub> credit system and the appropriateness of prolonging the application of those modalities in 2030 and beyond and, where appropriate, be accompanied by a proposal for amending this Regulation.

*Article 14*  
*Committee procedure*

1. The Commission shall be assisted by the xxx Committee established by Regulation (EU) No .../2018 [Governance]. That Committee shall be a committee within the meaning of Regulation (EU) No 182/2011.
2. Where reference is made to this paragraph, Article 5 of Regulation (EU) No 182/2011 shall apply.
3. Where the Committee delivers no opinion, the Commission shall not adopt the draft implementing act and the third subparagraph of Article 5(4) of Regulation (EU) No 182/2011 shall apply.

*Article 15*  
*Exercise of the delegation*

1. The power to adopt delegated acts is conferred on the Commission subject to the conditions laid down in this Article.
2. The power to adopt delegated acts referred to Articles 10(2) and 12(1) shall be conferred on the Commission for an indeterminate period of time from [the date of entry into force of this Regulation].
3. The delegation of power referred to in Articles 10(2) and 12(1) may be revoked at any time by the European Parliament or by the Council. A decision to revoke shall put an end to the delegation of the power specified in that decision. It shall take effect the day following the publication of the decision in the Official Journal of the European Union or at a later date specified therein. It shall not affect the validity of any delegated act already in force.
4. Before adopting a delegated act, the Commission shall consult experts designated by each Member State in accordance with the principles laid down in the Interinstitutional Agreement on Better Law-Making of 13 April 2016.
5. As soon as it adopts a delegated act, the Commission shall notify it simultaneously to the European Parliament and the Council.
6. A delegated act adopted pursuant to Articles 10(2) and 12(1) shall enter into force only if no objection has been expressed either by the European Parliament or by the Council within a period of two months of notification of that act to the European Parliament and the Council or if, before the expiry of that period, the European Parliament and the Council have both informed the Commission that they will not object. That period shall be extended to two months at the initiative of the European Parliament or of the Council.

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<sup>30</sup> Clean Vehicle Directive 2009/33/EC as amended by Directive .../.../EU

*Article 16*  
*Amendment to Regulation (EC) No 595/2009*

In Article 5(4) of Regulation (EC) No 595/2009 the following paragraph (1) is added:

- ‘(1) a procedure to verify, on the basis of appropriate and representative samples, whether vehicles that have been registered and entered into service are in conformity with the CO<sub>2</sub> emissions and fuel consumption values determined pursuant to this Regulation and its implementing measures;’

*Article 17*  
*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*

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

Done at Brussels,

*For the European Parliament*  
*The President*

*For the Council*  
*The President*

## **LEGISLATIVE FINANCIAL STATEMENT**

### **1. FRAMEWORK OF THE PROPOSAL/INITIATIVE**

- 1.1. Title of the proposal/initiative
- 1.2. Policy area(s) concerned in the ABM/ABB structure
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## LEGISLATIVE FINANCIAL STATEMENT

### 1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

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

Regulation of the European Parliament and of the Council on setting CO<sub>2</sub> emission performance standards for new heavy-duty vehicles

#### 1.2. Policy area(s) concerned in the ABM/ABB structure<sup>31</sup>

34: Climate action

#### 1.3. Nature of the proposal/initiative

- The proposal/initiative relates to **a new action**
- The proposal/initiative relates to **a new action following a pilot project/preparatory action**<sup>32</sup>
- The proposal/initiative relates to **the extension of an existing action**
- The proposal/initiative relates to **an action redirected towards a new action**

#### 1.4. Objective(s)

##### 1.4.1. *The Commission's multiannual strategic objective(s) targeted by the proposal/initiative*

The proposal constitutes a key legislative measure of the third "Europe on the Move" Package. It contributes to the implementation of the Commission's European Strategy for low-emission mobility, adopted in 2016, and its action plan to improve fuel efficiency and to reduce emissions from heavy-duty vehicles (HDV), i.e. lorries, buses and coaches.

The proposal contributes to achieving the Union's commitment to achieve at least 40% domestic emission reduction by 2030 compared to 1990.

##### 1.4.2. *Specific objective(s) and ABM/ABB activity(ies) concerned*

###### Specific objective No 3

Further decarbonisation of the transport sector in the Union through development and implementation of harmonised policies (in cooperation with other DGs like DG MOVE, GROW,...)

###### ABM/ABB activity(ies) concerned

ABB Activity 34 02 – Climate action at Union and international level.

ABB Activity 07 02 – Environmental policy at Union and international level

<sup>31</sup> ABM: activity-based management; ABB: activity-based budgeting.

<sup>32</sup> As referred to in Article 54(2)(a) or (b) of the Financial Regulation.

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

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

The proposal will set CO<sub>2</sub> emission standards for new HDV placed on the Union's market.

The proposal will:

- help reduce CO<sub>2</sub> emissions from the heavy-duty sector;
- lower operating costs for transport operators and/or freight costs for consumers;
- help the European HDV industry maintain its position of technological and innovative leadership.

### 1.4.4. *Indicators of results and impact*

*Specify the indicators for monitoring implementation of the proposal/initiative.*

Indicator 1: Average annual CO<sub>2</sub> emissions and fuel consumption per vehicle class, manufacturer and Member State from new HDVs registered in the Union within the scope of the certification legislation.

Indicator 2: Increased level of innovation measured in terms of new patents by European HDV manufacturers related to fuel-efficient technologies and zero/low-emission vehicles.

Indicator 3: The level of employment will be monitored on the basis of publicly available Eurostat statistics on sectoral employment data for the Union.

Indicator 4: Air quality monitoring with data on air pollutants reported by the EEA under AirBase.<sup>33</sup>

Indicator 5: Improvements in energy security will be monitored on the basis of Eurostat statistics on fuels imports, including transport fuels.

## 1.5. **Grounds for the proposal/initiative**

### 1.5.1. *Requirement(s) to be met in the short or long term*

Manufacturers of heavy-duty vehicles newly registered in the Union would have to:

- comply with the specific CO<sub>2</sub> emission targets set;
- report to the Commission real-world fuel consumption data measured by standardised devices;
- be subject to in-service conformity tests, whose results are reported to the Commission.

### 1.5.2. *Added value of EU involvement*

Markets for new HDVs and transport services are both operating EU-wide and are integral parts of the Single Market. Emission standards set at Union-level will avoid

<sup>33</sup>

AirBase is the European air quality database maintained by the EEA through its European topic center on Air pollution and Climate Change mitigation. It contains air quality monitoring data and information submitted by participating countries throughout the Union. The air quality database consists of a multi-annual time series of air quality measurement data and statistics for a number of air pollutants.

market fragmentation, distortion of competition and will be more cost effective than any action undertaken at the level of individual Member States.

The automotive industry requires as much regulatory certainty as possible if it is to make the large capital investments necessary to maximise the fuel economy of new vehicles, and even more so for shifting to new primary energy sources. Standards provide this certainty over a long planning horizon and they could not be implemented with the same effectiveness and certainty at Member State level.

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

For light-duty vehicles i.e. cars and vans mandatory EU-wide CO<sub>2</sub> emission standards have resulted in improved levels of fuel efficiency and lower CO<sub>2</sub> emissions.

The evaluation of the existing Regulations concluded that the legislation was still relevant, broadly coherent, and had generated significant emissions savings, while being more cost effective than originally anticipated for meeting the targets set.

The proposed CO<sub>2</sub> emission standards for new HDV builds on the lessons learned from the emission standards for light-duty vehicles. As in the case of cars and vans several flexibilities are foreseen to ensure a cost-effective implementation of the standards. However the special characteristics of the heavy-duty sector also called for some new elements in the design of CO<sub>2</sub> emission standards for HDV.

#### 1.5.4. *Compatibility and possible synergy with other appropriate instruments*

The proposal is consistent with the existing EU mobility policies, comprised among others of measures such as the EU type-approval system, the Certification Regulation<sup>34</sup>, the Regulation on Reporting and Monitoring<sup>35</sup>, the "Eurovignette" Directive<sup>36</sup>, Directive on maximum authorized weights and dimensions<sup>37</sup>, the Clean Vehicles Directive<sup>38</sup>, the Fuel Quality Directive (FQD).

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<sup>34</sup> Commission Regulation (EU) 2017/2400

<sup>35</sup> COM(2017) 0279 final

<sup>36</sup> Directive 2011/76/EU

<sup>37</sup> Directive 2015/719/EU

<sup>38</sup> Directive 2009/33/EC

## 1.6. Duration and financial impact

- Proposal/initiative of **limited duration**
  - Proposal/initiative in effect from [DD/MM]YYYY to [DD/MM]YYYY
  - Financial impact from YYYY to YYYY
- Proposal/initiative of **unlimited duration**
  - Implementation with a start-up period from 2019 for unlimited duration.
  - followed by full-scale operation.

## 1.7. Management mode(s) planned<sup>39</sup>

- Direct management** by the Commission
  - by its departments, including by its staff in the Union delegations;
  - by the executive agencies
- Shared management** with the Member States
- Indirect management** by entrusting budget implementation tasks to:
  - third countries or the bodies they have designated;
  - international organisations and their agencies (to be specified);
  - the EIB and the European Investment Fund;
  - bodies referred to in Articles 208 and 209 of the Financial Regulation;
  - public law bodies;
  - bodies governed by private law with a public service mission to the extent that they provide adequate financial guarantees;
  - bodies governed by the private law of a Member State that are entrusted with the implementation of a public-private partnership and that provide adequate financial guarantees;
  - persons entrusted with the implementation of specific actions in the CFSP pursuant to Title V of the TEU, and identified in the relevant basic act.
  - *If more than one management mode is indicated, please provide details in the 'Comments' section.*

Comments

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<sup>39</sup> Details of management modes and references to the Financial Regulation may be found on the BudgWeb site: [http://www.cc.cec/budg/man/budgmanag/budgmanag\\_en.html](http://www.cc.cec/budg/man/budgmanag/budgmanag_en.html)

## 2. MANAGEMENT MEASURES

### 2.1. Monitoring and reporting rules

*Specify frequency and conditions.*

The actual impacts of the legislation will be monitored and evaluated against a set of indicators tailored to the specific policy objectives to be achieved with the legislation (see point 1.4.4 above for details on the indicators).

A mid-term review of the legislation foreseen in 2022 would allow the Commission to assess the effectiveness of the legislation and, where appropriate, propose changes.

Under the proposed Regulation on monitoring and reporting of CO<sub>2</sub> emissions data from HDVs, the Commission will collect the CO<sub>2</sub> emissions and fuel consumption data resulting from the certification procedure. Thus, monitoring is closely linked to the certification process and the operation and management of the VECTO simulation tool.

The proposal on CO<sub>2</sub> standards puts forward two additional monitoring measures to complement the Regulation on monitoring and reporting of CO<sub>2</sub> emissions data from HDV:

1. Collection, publication, and monitoring of real-world fuel consumption data reported by manufacturers and based on mandatory standardised devices.
2. Introduction of in-service conformity tests and the obligation to report deviations from type approval values, which could be tackled by a correction mechanism.

These complementary monitoring measures would reinforce the monitoring process and would ensure the effectiveness of the proposed legislative initiative.

### 2.2. Management and control system

#### 2.2.1. Risk(s) identified

Efficient monitoring is conditional on a well-functioning certification process and reliable emission data from the VECTO tool used for the purposes of the Regulation on monitoring and reporting of CO<sub>2</sub> emissions data from HDVs.

The risk of erroneous emission data or delayed reporting by manufacturers or Member States under the Regulation on monitoring and reporting of CO<sub>2</sub> emissions data from HDVs might lead to difficulties in implementing the CO<sub>2</sub> emission standards.

#### 2.2.2. Information concerning the internal control system set up

The control methods envisaged are laid down in the Financial Regulation and Rules of Application.

#### 2.2.3. Estimate of the costs and benefits of the controls and assessment of the expected level of risk of error

N/A

### 2.3. Measures to prevent fraud and irregularities

*Specify existing or envisaged prevention and protection measures.*

In addition to the application of the Financial Regulation to prevent fraud and irregularities the proposal foresees financial penalties in case of non-compliance

with the specific CO<sub>2</sub> emission targets. In addition, as explained in point 2.1 above the proposal provides for real-world fuel consumption monitoring as well as in-service conformity tests and correction mechanism in case of considerable deviation between real-world and type approval data. These measures will ensure the effectiveness of the proposal and will minimise the risk of irregularities.

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

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

- Existing budget lines

In order of multiannual financial framework headings and budget lines.

Heading of multiannual financial framework	Budget line			Type of expenditure	Contribution			
	Number [2][Heading .....]	Natural	Resources	Diff./Non-diff. <sup>40</sup>	from EFTA countries <sup>41</sup>	from candidate countries <sup>42</sup>	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
2	34 02 01: Reduction of GHG emissions (mitigation)			Diff.	NO	NO	NO	NO

- New budget lines requested

In order of multiannual financial framework headings and budget lines.

Heading of multiannual financial framework	Budget line			Type of expenditure	Contribution			
	Number [...][Heading..... .....]			Diff./Non-diff.	from EFTA countries	from candidate countries	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
	[...][XX.YY.YY.YY]				YES/NO O	YES/NO	YES/NO O	YES/NO

<sup>40</sup> Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.

<sup>41</sup> EFTA: European Free Trade Association.

<sup>42</sup> Candidate countries and, where applicable, potential candidate countries from the Western Balkans.

### 3.2. Estimated impact on expenditure

[This section should be filled in using the [spreadsheet on budget data of an administrative nature](#) (second document in annex to this financial statement) and uploaded to CISNET for interservice consultation purposes.]

#### 3.2.1. Summary of estimated impact on expenditure

EUR million (to three decimal places)

<b>Heading of multiannual financial framework</b>	Number 2	Sustainable Growth: Natural Resources
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European Commission <sup>43</sup>			Year 2019 <sup>44</sup>	Year 2020	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			<b>TOTAL 2019-2020</b>
• Operational appropriations										
34.02.01	Commitments	(1)	0.500	0.500						<b>1.000</b>
	Payments	(2)	0.500	0.500						<b>1.000</b>
Number of budget line	Commitments	(1a)								
	Payments	(2a)								
Appropriations of an administrative nature financed from the envelope of specific programmes <sup>45</sup>										
Number of budget line		(3)								
<b>TOTAL appropriations for European Commission</b>	Commitments	=1+1a +3	0.500	0.500						<b>1.000</b>
	Payments	=2+2a +3	0.500	0.500						<b>1.000</b>

<sup>43</sup> Services concerned are as follows: DG CLIMA, DG GROW, JRC

<sup>44</sup> Year N is the year in which implementation of the proposal/initiative starts.

<sup>45</sup> Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

• TOTAL operational appropriations	Commitments	(4)	0.500	0.500							<b>1.000</b>
	Payments	(5)	0.500	0.500							<b>1.000</b>
• TOTAL appropriations of an administrative nature financed from the envelope for specific programmes		(6)									
<b>TOTAL appropriations under HEADING 2</b> of the multiannual financial framework	Commitments	=4+ 6	0.500	0.500							<b>1.000</b>
	Payments	=5+ 6	0.500	0.500							<b>1.000</b>

**If more than one heading is affected by the proposal / initiative:**

• TOTAL operational appropriations	Commitments	(4)									
	Payments	(5)									
• TOTAL appropriations of an administrative nature financed from the envelope for specific programmes		(6)									
<b>TOTAL appropriations under HEADINGS 1 to 4</b> of the multiannual financial framework (Reference amount)	Commitments	=4+ 6	0.500	0.500							<b>1.000</b>
	Payments	=5+ 6	0.500	0.500							<b>1.000</b>

The requested operational appropriations under Heading 2 will be allocated from the available LIFE programme envelope (under the sub-programme for Climate Action).

<b>Heading of multiannual financial framework</b>	<b>5</b>	‘Administrative expenditure’
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EUR million (to three decimal places)

		Year 2019	Year 2020	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL 2019-2020
European Commission									
• Human resources		0.429	0.429						<b>0.858</b>
• Other administrative expenditure		0.015	0.015						<b>0.030</b>
<b>TOTAL European Commission</b>	Appropriations	0.444	0.444						<b>0.888</b>

<b>TOTAL appropriations under HEADING 5 of the multiannual financial framework</b>	(Total commitments = Total payments)	0.444	0.444						<b>0.888</b>
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EUR million (to three decimal places)

		Year 2019 <sup>46</sup>	Year 2020	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL 2019-2020
<b>TOTAL appropriations under HEADINGS 1 to 5 of the multiannual financial framework</b>	Commitments	0.944	0.944						<b>1.888</b>
	Payments	0.944	0.944						<b>1.888</b>

<sup>46</sup> Year N is the year in which implementation of the proposal/initiative starts.

3.2.2. *Estimated impact on operational appropriations*

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

Commitment appropriations in EUR million (to three decimal places)

Indicate objectives and outputs ↓			Year 2019		Year 2020		Year N+2		Year N+3		Enter as many years as necessary to show the duration of the impact (see point 1.6)						TOTAL 2019-2020	
	OUTPUTS																	
	Type <sup>47</sup>	Average cost	Nº	Cost	Nº	Cost	Nº	Cost	Nº	Cost	Nº	Cost	Nº	Cost	Nº	Cost	Total No	Total cost
SPECIFIC OBJECTIVE No 3 <sup>48</sup> ...																		
- Output	Service Contract	0.500	1		1	0.500												1.000
- Output																		
- Output																		
Subtotal for specific objective No 1																		
SPECIFIC OBJECTIVE No 2 ...																		
- Output																		
Subtotal for specific objective No 2																		
<b>TOTAL COST</b>			1	0.500	1	0.500												1.000

<sup>47</sup> Outputs are products and services to be supplied (e.g.: number of student exchanges financed, number of km of roads built, etc.).

<sup>48</sup> As described in point 1.4.2. ‘Specific objective(s)...’

### 3.2.3. Estimated impact on appropriations of an administrative nature

#### 3.2.3.1. Summary

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

EUR million (to three decimal places)

	Year 2019	Year 2020	Year 2022	Year 2023	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL
--	--------------	--------------	--------------	--------------	--	--	--	-------

<b>HEADING 5 of the multiannual financial framework</b>								
Human resources	0.429	0.429						<b>0.858</b>
Other administrative expenditure	0.015	0.015						<b>0.030</b>
<b>Subtotal HEADING 5 of the multiannual financial framework</b>	<b>0.444</b>	<b>0.444</b>						<b>0.888</b>

<b>Outside HEADING 5<sup>49</sup> of the multiannual financial framework</b>								
Human resources	0	0						<b>0</b>
Other expenditure of an administrative nature	0	0						<b>0</b>
<b>Subtotal outside HEADING 5 of the multiannual financial framework</b>	<b>0</b>	<b>0</b>						<b>0</b>

<b>TOTAL</b>	<b>0.444</b>	<b>0.444</b>						<b>0.888</b>
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The appropriations required for human resources and other expenditure of an administrative nature will be met by appropriations from the DG that are already assigned to management of the action and/or have been redeployed within the DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

<sup>49</sup> Technical and/or administrative assistance and expenditure in support of the implementation of EU programmes and/or actions (former 'BA' lines), indirect research, direct research.

### 3.2.3.2. Estimated requirements of human resources

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

*Estimate to be expressed in full time equivalent units*

	Year 2019	Year 2020	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)		
<b>• Establishment plan posts (officials and temporary staff)</b>							
34 01 01 01 (Headquarters and Commission's Representation Offices)	3	3					
XX 01 01 02 (Delegations)							
XX 01 05 01 (Indirect research)							
10 01 05 01 (Direct research)							
<b>• External staff (in Full Time Equivalent unit: FTE)<sup>50</sup></b>							
34 01 02 01 (AC, END, INT from the 'global envelope')	0	0					
XX 01 02 02 (AC, AL, END, INT and JED in the delegations)							
XX 01 04 yy <sup>51</sup>	- at Headquarters						
	- in Delegations						
XX 01 05 02 (AC, END, INT - Indirect research)							
10 01 05 02 (AC, END, INT - Direct research)	0	0					
Other budget lines (specify)							
<b>TOTAL</b>	<b>3</b>	<b>3</b>					

XX is the policy area or budget title concerned.

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

Description of tasks to be carried out:

Officials and temporary staff	Three additional AD officials will be required as from 2019 to be responsible the preparation of the relevant implementing legislation and for ensuring the effective implementation, monitoring and evaluation of
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<sup>50</sup> AC= Contract Staff; AL = Local Staff; END= Seconded National Expert; INT = agency staff; JED= Junior Experts in Delegations.

<sup>51</sup> Sub-ceiling for external staff covered by operational appropriations (former 'BA' lines).

the Regulation and necessary related issues, with regards to the operation of the VECTO tool and the management of the certification process. Detailed description of the specific tasks is provided below.

1. Tasks related to the implementation of the Regulation:
  - a. Setting of individual manufacturers CO<sub>2</sub> emission reduction targets and credit lines for the purposes of banking;
  - b. Organisation, supervision and control of banking and borrowing procedures;
  - c. Organisation, supervision and control of the incentive mechanism for zero- and low-emission vehicles;
  - d. Setting-up and implementation of the review mechanism in 2022 – review of target levels, credit lines, applicable caps, extension of the scope etc.;
  - e. Supervision of the process of real-world emissions data collection, publication and monitoring. Identification and control of any corrective action if necessary.
  - f. Supervision and analysis of results from in-service conformity tests. Identification and control of any correction mechanism if necessary.
  - g. Annual and multi-annual compliance assessment including the application and collection of penalties.
2. Tasks related to the monitoring and evaluation of the Regulation.
3. Tasks related to VECTO tool:
  - a. further development of the tool to include new innovative technologies with a "fast track procedure"
  - b. management of the "VECTO fast track procedure" once it is established (similar to the "eco-innovations" procedure in the LDV area)
  - c. further extension of VECTO to cover buses & coaches, smaller lorries as well as trailers and actual body shapes of lorries;
  - d. managing the operation of the VECTO tool running centrally on a web platform, what may be necessary to deal with multi-stage approvals (for buses & coaches and real body shape certifications), with customer information (comparative simulation of different vehicles on customised mission profiles) and independent testing (running of verification test simulations).
  - e. Management of auxiliary tools supporting VECTO, e.g. of an approval process for commercial computational fluid dynamics (CFD) tools or the development of a CFD reference tool by the Commission.
  - f. Acquire sufficient in-depth knowledge with the necessary staff redundancies to ensure that

	<ul style="list-style-type: none"> <li>i. the Commission can operate VECTO on a daily basis independently from external contractors</li> <li>ii. development tenders can be specified in sufficient depth and detail (e.g. description of individual programme modules on a functional level) such that they are accessible to a wide range of bidders, including those without a pre-knowledge of the VECTO tool.</li> </ul> <p>4. Tasks related to the certification process</p> <ul style="list-style-type: none"> <li>a. to ensure that it is kept up-to-date in a timely manner and includes the necessary features for a proper implementation of the CO<sub>2</sub> emission standards.</li> <li>b. Support for the "VECTO fast track procedure" to include new technologies</li> </ul> <p>Although the tasks under points 3 and 4 above are related to the implementation of the Regulation on reporting and monitoring and the Certification Regulation, they are different and come in addition to those performed by staff currently working in these areas.</p> <p>For the implementation of the former two contract agents for the EEA were requested to support the implementation of the reporting system as well as the preparation of quality assurance and data quality control systems.</p> <p>For the implementation of the latter additional human resources are required with specific knowledge of VECTO for the purposed of updating the Certification Regulation.</p>
External staff	None

3.2.4. *Compatibility with the current multiannual financial framework*

- The proposal/initiative is compatible the current multiannual financial framework.
- The proposal/initiative will entail reprogramming of the relevant heading in the multiannual financial framework.

Explain what reprogramming is required, specifying the budget lines concerned and the corresponding amounts.  
[\[...\]](#)

- The proposal/initiative requires application of the flexibility instrument or revision of the multiannual financial framework.

Explain what is required, specifying the headings and budget lines concerned and the corresponding amounts.  
[\[...\]](#)

3.2.5. *Third-party contributions*

- The proposal/initiative does not provide for co-financing by third parties.
- The proposal/initiative provides for the co-financing estimated below:

Appropriations in EUR million (to three decimal places)

	Year N	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)			Total
Specify the co-financing body								
TOTAL appropriations co-financed								

### 3.3. Estimated impact on revenue

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

EUR million (to three decimal places)

Budget revenue line:	Appropriations available for the current financial year	Impact of the proposal/initiative <sup>52</sup>					
		Year N	Year N+1	Year N+2	Year N+3	Enter as many years as necessary to show the duration of the impact (see point 1.6)	
Article .....							

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

The Regulation is designed in a way that will ensure full compliance by all manufacturers. As a result, it is not expected that revenues will be generated through the Excess Emission Premiums foreseen under Article 8. However, in the event that revenues are generated by the implementation of the provisions of this article, they will be incorporated into the general EU budget. The impact assessment accompanying the proposal provides ranges of potential total Excess Emission Premiums that could be due in case of non compliance.

Specify the method for calculating the impact on revenue.

[...]

<sup>52</sup> As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 25 % for collection costs.