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Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulations (EC) No 715/2007 and (EC) No 595/2009

(Text with EEA relevance)

{SEC(2022) 397 final} - {SWD(2022) 358 final} - {SWD(2022) 359 final} -
{SWD(2022) 360 final}

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE PROPOSAL

• Reasons for and objectives of the proposal

Free movement of goods, persons, services and capital must be ensured for a correct functioning of the single market. To that end Regulation (EU) No 2018/858 of the European Parliament and of the Council enshrines a comprehensive type-approval and market surveillance system for motor vehicles, trailers, and for systems, components and separate technical units intended for such vehicles. The technical requirements for the type-approval of motor vehicles and engines with regard to emissions are also harmonised to avoid requirements that differ from one Member State to another, and to ensure a high level of environmental and health protection.

Air pollution remains a large environmental and health risk in Europe. While air quality has improved, a significant proportion of the EU's urban population is still exposed to pollutant concentrations above the limits defined by the Ambient Air Quality Directive[1]. It is estimated that air pollution caused more than 300 000 premature deaths in the EU-28 in 2018[2]. Despite the fact that other sectors also play a role, road transport is still a major contributor to air pollution. It was on average responsible for 39% of the harmful NO_x emissions in 2018 (47% in urban areas[3]) and 11% of total PM_{10} emissions in 2018[4].

The **European Green Deal**[5] is a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy. The EU should also promote and invest in the necessary digital transformation and tools as these are essential enablers of the changes. Digital technology can indeed help cut global emissions, enhance quality-of-life and reduce society's environmental footprint, for example by optimising energy usage and monitoring emissions in transport[6]. In order to reach climate neutrality by 2050 and zero-pollution ambition for a toxic-free environment, all sectors need to transform, including road transport. The European Green Deal announced the adoption of a proposal for more stringent air pollutant emissions standards for combustion-engine vehicles (Euro 7).

To accelerate decarbonisation of road transport, the Commission proposed in July 2021 an amendment of the Regulation on **CO_2 emission performance standards** for cars and vans[7], to ensure a clear pathway towards zero-emission mobility.[8] Moreover, the Commission adopted in December 2020 the **Sustainable and Smart Mobility Strategy**[9] and in May 2021 the **Zero-Pollution Action Plan**[10]. According to those strategies, transport should become

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1 Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe (OJ L 152, 11.6.2008, p. 1–44)

2 EEA, 2020. Air quality in Europe – 2020 report.

3 JRC, 2019. Urban NO_2 Atlas

4 EEA, 2020. Air pollutant emissions data viewer (Gothenburg Protocol, LRTAP Convention) 1990-2018

5 COM(2019) 640 final

6 COM(2021) 118 final

7 COM(2021) 556 final

8 In 2022, this will be followed by a proposal on CO_2 emission performance standards for heavy-duty vehicles.

9 COM(2020) 789 final

10 COM(2021) 400 final

drastically less polluting, especially in cities and Euro 7 is considered as an essential part of the transition towards clean mobility.

Last but not least, the **New Industrial Strategy for Europe**[11] offers tools to address the twin challenge of the green and the digital transformation and to support the European industry in making the European Green Deal ambition a reality. New pollutant emission framework will offer legal certainty and first-mover advantage to the EU automotive sector. EU emission standards need to keep ahead of standards under development in key markets like the United States and China, in order to keep a competitive advantage. Access to these markets could be hampered for EU manufacturers as it would become more costly to meet emission requirements in different markets.

Transition towards zero-emission cars/vans fleet will be spread across at least two decades, not least given the average lifetime of cars/vans of more than 11 years. Meanwhile, in order to achieve the above policy objectives, the internal combustion-engine vehicles which will continue to be placed on the market need to be as clean as possible.

At the same time, the automotive industry is faced with other significant transformations — significant supply-chain shortages, impact of the Russian invasion in Ukraine, rising energy and raw material costs.

Despite the proposed 100% CO_2 emission reduction targets for cars and vans by 2035, the upcoming proposal to revise the CO_2 performance standards for heavy-duty vehicles, the increasing share of zero- and low-emission heavy-duty vehicles and new Euro 6d/VI E vehicles entering the market, a low-pollution level in the short- to medium-term cannot be reached for pollutant emissions from road transport without further action. The proposal is expected to tackle three identified **problems** why the Euro 6/VI emission standards contribute insufficiently to the necessary reduction of pollutant emissions from road transport. These problems being: (1) complexity of vehicle emission standards, (2) obsolete vehicle pollutant limits; and (3) insufficient control of vehicle real-world emissions.

The **general objective** of the initiative is twofold: (1) to ensure the proper functioning of the single market by setting more adequate, cost-effective and future-proof rules for vehicle emissions; and (2) to ensure a high level of environmental and health protection in the EU by further reducing air pollutant emissions from road transport.

This initiative will contribute to achieving the general objective by pursuing the following three **specific objectives**. It will:

(1) Reduce complexity of the current Euro emission standards.

(2) Provide up-to-date limits for all relevant air pollutants.

(3) Improve control of real-world emissions.

Improving the control of real-world emissions throughout the lifetime of a vehicle is of considerable importance for the second-hand market important to several EU countries, but also to other regions, such as Africa or Middle East. The Euro 7 proposal aims at reducing vehicle emissions during a longer part of a vehicle's lifetime, thus benefiting also second-hand users. In particular as regards specific objective (3), air quality will continue to be impacted by pre-Euro 7 cars for several years to come. Appropriate incentives could be put in place for older cars to be retrofitted to meet Euro 7 requirements for tailpipe emissions but

[11] COM(2020) 102 final and COM(2021) 350 final

also for tyre and brake emissions. Additionally, to speed up the reduction of emissions from the existing fleet and to accelerate the transition to zero-emission transport, it is important to encourage the conversion of internal combustion engine vehicles to battery or fuel cell electric drive.

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

Regulation (EU) 2018/858 of the European Parliament and of the Council provides for a general framework on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles.

Euro emission standards for vehicles (Regulations 715/2007 and 595/2009) are part of the above framework[12]. They are interlinked with several existing policy provisions and planned proposals which tackle air pollutants of the road transport as well as with the CO_2 emission standards[13] which reduce air pollutants as a co-benefit. This legislative proposal on Euro 7 emission standards for cars, vans, lorries and buses improves consistency of the Euro emission standards with the following measures.

The **Ambient Air Quality Directive (AAQD)**[14] aims at improving air quality by setting limits for the ambient air concentrations of specific air pollutants from all air pollution sources (e.g. agriculture, energy, manufacturing, etc.). **National Emission reduction Commitments Directive (NECD)**[15] aims at reducing national air pollutant emissions by setting national reduction commitments for specific air pollutants, with reductions from all sectors, including road transport. On 26 October 2022 the Commission adopted a proposal for the revision of the Ambient Air Quality Directives[16]. The proposed revision will set interim 2030 EU air quality standards, aligned more closely with World Health Organization guidelines, while putting the EU on a trajectory to achieve zero pollution for air at the latest by 2050. The Euro 7 proposal is an important element to deliver on this ambition and to contribute to the objectives of the EU's clean air policy, including the revision of the AAQD. By ensuring a reduction of all relevant air pollutant emissions from road transport consistent with AAQD/NECD air pollutant coverage and targets, the proposal for Euro 7 standards notably support Member States in meeting their commitments under the AAQD and the NECD.

The **CO_2 emission standards** support the EU's climate ambition set in European Climate Law[17], which aims at reducing EU greenhouse gas emissions by at least 55% by 2030, compared to 1990. In July 2021, the Commission proposed to revise and strengthen the CO_2 emission standards for cars/vans[18], while the revision of the standards for heavy-duty vehicles is foreseen by end-2022. Whereas the CO_2 emission standards promote zero-emission technologies, such as electric vehicles, the new Euro 7 standards address the emission of harmful air pollutants from combustion engines and non-tailpipe emissions from electric vehicles with the aim to protect human health and the environment. Therefore, the Euro 7 general objectives remain valid insofar as vehicles with internal combustion engines will continue to emit exhaust pollutants, and all vehicles will contribute to non-exhaust emissions.

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12 Found in Annex II of Regulation 2018/858

13 Regulation (EU) 2019/631 and Regulation (EU) 2019/1242

14 Directive 2008/50/EC

15 Directive (EU) 2016/2284

16 COM(2022) 542, Proposal for a Directive of the European Parliament and of the Council on ambient air quality and cleaner air for Europe

17 Regulation 2021/119 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law')

18 COM(2021) 556 final

Despite the proposed 100% CO2 reduction target for 2035 for new cars/vans, the number of vehicles placed on the market with combustion engines (including hybrids) will remain important, in particular for lorries/buses. Both CO_2 and pollutant emission standards are considered as complementary to reach the climate and zero-pollution ambition of the European Green Deal and contribute to the shift to sustainable mobility.

The **Roadworthiness Directives**[19] have the objective to increase road safety in the EU and to ensure the environmental performance of vehicles, by means of regularly testing vehicles throughout their operational lifetime. As far as emissions are concerned, they have as objective to contribute to the reduction of air pollutant emissions by detecting more effectively vehicles that are over-emitting due to technical defects, through periodic technical inspections and the roadside inspections. This proposal contains elements to support this objective, including implemented through On-Board Monitoring, that are expected to lead to cost savings. Such mechanisms could gradually become a primary tool in the Roadworthiness Directives, modernise the current inspection procedures and lead to lower administrative costs. The upcoming revision of the Roadworthiness Directives will need to take into account these new mechanisms, including for implementing measures which will need to be developed under the revision of the Roadworthiness package[20].

In addition, the **Eurovignette Directive**[21], which sets common rules on road infrastructure charges, and **Clean Vehicles Directive**[22]**,** which promotes clean mobility solutions through public procurement, are consistent with the general objectives of the Euro standards. In particular, they support demand for clean vehicles by allowing Member States to vary road charges based on pollutant emissions of vehicles and through public procurement. The **Fuel Quality Directive**[23] prescribes the fuel quality characteristics of fuel sold in the market and therefore is important for the Euro standards.

- **Consistency with other Union policies**

As part of the EU's digital strategy and following the Communication on a **European data strategy**[24] the Commission has put forward a Data Act to support business-to-government and business-to-business data sharing. This act offers a horizontal framework for enhancing data access and data sharing across sectors. Specific problems in the automotive sector in the context of access to in-vehicle data justify complementing the Data Act with a a specific initiative. This initiative should ensure that a minimum set of data and functions is available, as well as fair access conditions for all automotive services providers. By ensuring the availability and accessibility of in-vehicle data, this initiative would be complementary to this Euro 7 proposal as it would facilitate the optimal adoption of continuous emission monitoring.

The **New Industrial Strategy for Europe**[25] takes into account the new circumstances deriving from the crisis, as well as the on-going transformation to a more sustainable, digital, resilient and globally competitive economy. It places priorities and defines new objectives on strengthening the resilience of the Single Market, dealing with strategic dependencies,

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19 Directive 2014/45/EU on periodic roadworthiness tests for motor vehicles and their trailers; Directive 2014/47/EU on the technical roadside inspection of the roadworthiness of commercial vehicles circulating in the Union

20 Vehicle safety – revising the EU's roadworthiness package (europa.eu)

21 Directive 1999/62/EC on the charging of vehicles for the use of road infrastructures

22 Directive 2019/1161/EU on the promotion of clean and energy-efficient road transport vehicles

23 Directive 2009/30/EC as regards the specification of petrol, diesel and gas-oil and introducing a mechanism to monitor and reduce greenhouse gas emissions

24 COM(2020) 66 final

25 COM(2020) 102 final and COM(2021) 350 final

combining targeted actions in the areas of regulatory framework, innovation support, access to raw materials and decarbonised energy, skills and data spaces, to accelerate the twin transition. This Strategy offers tools to address the twin challenge of the green and the digital transformation and to support the European industry in making the European Green Deal ambition a reality. New pollutant emission framework will offer legal certainty and first-mover advantage to the EU automotive sector, avoiding the risk of falling behind other major jurisdictions setting new pollutant emission standards.

The **End-of-Life Vehicle (ELV) Directive**[26] contains rules on the collection, treatment and recovery of end-of-life vehicles and their components, as well as restrictions on hazardous substances in new vehicles. Its mirror directive, the **3R type-approval Directive**[27]**,** links the design of new vehicles with their reusability, recyclability and recoverability. These Directives are planned to be reviewed in 2023 in line with the ambitions of the European Green Deal and the **Circular Economy Action Plan**[28]**.** While Euro 7 proposal aims at reducing vehicle emissions during a longer part of a vehicle's lifetime by extending durability requirements, the revision of the ELV Directive complements by looking into the problem of export of defective polluting used vehicles outside the EU.

This initiative is also consistent with the **Next Generation EU**[29], more particularly the **Recovery and Resilience Facility**[30] (RRF) and the flagship "Recharge and Refuel", which promotes future-proof clean technologies to accelerate the use of sustainable, accessible and smart transport, charging and refuelling stations and extension of public transport. Through this RRF funding but also targeted investment programmes under **InvestEU**[31] or **Horizon Europe**[32], resources will be allocated to raise the economy's growth potential as well as to accelerate green transformation, notably through the uptake of innovative solutions and future proof low emission technologies.

This initiative also integrates the necessity to ensure a just and fair green transition, supporting in particular vulnerable citizens in the area of transport: it is consistent with the **Final Report of the Conference on the Future of Europe** (proposal 18.3) especially when it comes for affordability of transport means and of vehicles operating on non-polluting technologies.

In addition, the initiative is coherent with the recent proposal amending European Consumer Law, more particularly the **Unfair Commercial Practices Directive**[33] and the **Consumer Rights Directive**[34], to contribute to a circular, clean and green EU economy by enabling consumers to take informed purchasing decisions and therefore contributing to more sustainable consumption.

Finally, to reinforce consistency across policies, and as announced in its Communication **Better regulation: Joining forces to make better laws**[35], the Commission is improving its better regulation guidelines to ensure that all its initiatives comply with the 'do no significant harm' principle thus abiding by the obligations set under the European Climate Law.

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26 Directive 2000/53/EC on end-of-life vehicles
27 Directive 2005/64/EC on the reusability, recyclability and recoverability of vehicles
28 COM(2020) 98 final
29 COM(2020) 456 final
30 Regulation (EU) 2021/241
31 Regulation (EU) 2021/523
32 Regulation (EU) 2021/695
33 Directive 2005/29/EC
34 Directive 2011/83/EU
35 COM(2021) 219 final

2. LEGAL BASIS, SUBSIDIARITY AND PROPORTIONALITY

• Legal basis

The legal basis of the proposal is Article 114 of the Treaty on the Functioning of the European Union (TFEU).

• Subsidiarity (for non-exclusive competence)

The legislation concerning the type-approval of motor vehicles contributes to the implementation and functioning of the single market for goods. This proposal aims at rendering the implementation and enforcement of this legislation more effective as part of the overall policy objective to deepen the single market strategy.

The second reason is the transnational nature of air pollution and road transport. Even though the effects of the main toxic air pollutants are most severe close to the source, the effects on air quality are not limited to the local level and cross-border pollution is a serious environmental problem that often challenges national solutions. Atmospheric modelling shows that the pollution emitted in one Member State contributes to pollution in other Member States. In order to solve the problem of air pollution, concerted action at the EU scale is required.

Developing emission standards at EU level and setting up an appropriate governance for it are key to avoid Member States adopting different national measures which are potentially not congruous nor consistent (e.g. to measures limiting access to certain areas). Such measures would create considerable obstacles for industry and pose great risk to the single market. Hence, continued harmonised EU action to further reduce vehicle emission is fully justified.

• Proportionality

The proposal is proportionate as it provides for the necessary legal change and at the same time does not go beyond what it necessary to achieve the objectives of reduction of pollutant emissions from motor vehicles on the one hand and ensuring legal certainty for vehicle manufacturers on the other. It provides for the necessary legal conditions to uphold, to the extent possible, a level playing field among manufacturers.

• Choice of the instrument

The use of a Regulation is considered to be appropriate in that it provides the required assurance for direct and harmonised application and enforcement while not requiring transposition into Member States' legislation.

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

• Ex-post evaluations of existing legislation

The Commission decided to follow a back-to-back approach in which the evaluation and impact assessment were conducted in parallel as a single process to meet the roadmap set by the European Green Deal[36]. That way, the findings of the evaluation included in Annex 5 to the Impact Assessment were used to inform further reflection on whether Euro 6/VI emission

[36] COM(2019) 640 final

standards continue to provide high level environmental protection in the EU and to ensure the proper function of the single market for motor vehicles.

The evaluation assessed the regulations' achievements against the objectives set in the Euro 6/VI legislation. It concluded that the Euro 6/VI objectives to improve air quality by reducing pollutants from road transport and to set harmonised rules on the construction of motor vehicles are still highly relevant. In addition, the regulations were found to be broadly coherent and to have led to partly cleaner vehicles on EU roads with the Euro 6/VI testing procedures being partly effective. Regulatory costs exist, while overall the Euro 6/VI regulations are found to be cost-effective. They also generated significant EU added value that could not have been achieved to the same extent through national measures.

Key conclusions of the evaluation were as follows:

- The Regulations have realised partly cleaner vehicles on EU roads.
- Since the application of Euro VI emission limits in 2013 and Euro 6 emission limits in 2014 up until 2020, NO_x emissions on EU roads have decreased by 22% for cars and vans and by 36% for lorries and buses. Exhaust PM emissions on EU roads have known a decrease of 28% for cars and vans, and a decrease of 14% from lorries and buses.
- The Regulations have somewhat curbed negative health impacts by road transport that could cause respiratory and cardiovascular diseases upon inhalation.
- Regulatory costs for automotive industry are estimated at €357-€929 per diesel vehicle and by €80-€181 per petrol vehicle for cars and vans, and up to €3 717-€4 326 per heavy-duty vehicle. While the latter are in line with the expectations, for cars and vans the costs are higher than what was originally anticipated.
- Impacts on competitiveness and innovation appear generally positive with no signs of competitive distortion.
- Recent policy developments such as the European Green Deal support the Euro 6/VI objectives and the relevance of further improving air quality by reducing emissions from road transport in a unified EU approach.
- The Regulations have generated net economic benefits to society.
- While the Regulations are broadly coherent, some coherence issues have been identified both within the Euro 6/VI emission standards and with other EU legislation.
- No simplification was realised in the Regulations.
- The harmonisation of the market is the most crucial aspect of EU added-value and it is unlikely that uncoordinated action would have been as efficient. The Regulations ensure common requirements, thus minimising costs for manufacturers, and provide regulatory certainty.
- Still, some shortcoming are preventing the Regulations from further improving air quality through reducing pollutants emitted by the road transport sector. Hence, some design elements (modalities) of the Regulations are likely to have had an impact on the efficiency of the Regulations. In particular:
    - The evaluation shows that over the successive steps of Euro 6/VI standards complexity and consistency issues have become well-rooted in the both the overall legal framework and in its practical implementation.

- The evaluation emphasizes many potential benefits for human health and environment remain overlooked in the current Regulations. Despite the progress made to reduce the gap between vehicle real-world emissions (driving cycles and conditions of use, especially in urban driving conditions) and type-approved emissions, important emissions remain unaccounted under Euro 6/VI emission testing. In addition, emissions are not properly controlled over the entire lifetime of vehicles.

- **Stakeholder consultations**

In order to collect evidence and ensure great transparency, the Commission sought feedback from stakeholders through multiple consultation activities. More precisely, for the purpose of this proposal, the Commission sought feedback from the following stakeholder groups: Member States and national authorities, automotive industry (including vehicle manufacturers, component suppliers and other industry stakeholders), civil society (including consumer organisations and environmental NGOs) and citizens.

A detailed summary of the extensive consultation process is presented in the synopsis report in Annex 2 to the Impact Assessment for this proposal.

The Commission has gathered feedback through the following activities:

- The initiative was discussed for the first time with stakeholders during a stakeholder conference in October 2018. Subsequently, the Advisory Group on Vehicle Emission Standards (AGVES) was set up by merging relevant expert groups from industry, civil society and Member States, with ten meetings and one ad-hoc workshop on simplification from July 2019 to April 2021.
- The Inception Impact Assessment was launched on 27 March to 3 June 2020. The 18-week Public Consultation on the proposal followed on 6 July 2020 and was open for contributions until 9 November 2020.
- Two 14-week targeted consultations – one for the Evaluation of Euro 6/VI (4 March to 8 June 2020) and one for the Impact Assessment of Euro 7 (3 August to 9 November 2020) – were performed focussing more on the detailed and technical aspects of to the initiative.

Information, views and data through all consultation activities were taken into consideration for the evaluation of the Euro 6/VI and for the preparation of the Euro 7 impact assessment. The collected stakeholder evidence made it possible to supplement, cross-check and confirm the evidence already gathered through other research in the Impact Assessment and the supporting studies.

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

Stakeholders from all groups agreed that there are ongoing air pollution and health issues associated with road transport and that there is need for action. While the majority of respondents from component suppliers, Member States, civil society and citizens considered new Euro standards to be appropriate to further reduce vehicle emission, vehicle manufacturers were less convinced. In several activities, automotive industry stressed that preserving the Euro 6/VI would be a realistic and balanced option.

The majority from all groups agreed that Euro 6/VI is complex. The responses to the public consultation show that complexities lead to significant compliance costs and administrative burden. Additionally, all groups apart from industry indicated that complexity hampers environmental protection, while civil society added that it leads to misinterpretations.

Respondents from all groups implied that there is a need to address complexity in the Regulations through varying measures.

Apart from vehicle manufacturers, the majority of all groups including component suppliers showed support for developing stricter limits for regulated pollutants and new limits for non-regulated pollutants. Component suppliers, Member States, civil society and citizens believe that the current pollution control technology leaves room for additional emission reductions.

The majority of stakeholders, believe that in Euro 6/VI real-world emissions are not adequately monitored or limited over the entire lifetime of vehicles. Tampering, vehicle ageing, inadequate technical inspections and the cost of maintenance were indicated as potential causes. All stakeholder groups have shown support for the implementation of continuous emission monitoring of emissions as an action to measure real-world emissions. Still, most manufacturers added that this can only be used for a limited number of pollutants in the near future.

Feedback and differences in stakeholders' views were carefully analysed and taken into account in the Impact Assessment if credible. In particular, the views from industry and Member States were helpful to analyse the problem of complexity and potential simplification measures. In addition, information provided by industry on the hardware costs for pollution control technologies has been an important source for the assessment of the economic impacts. Feedback and concerns raised by the Member States, industry, civil society and citizens have been taken into account in the design and assessment of the options, particularly with regard to the technological potential for reducing emissions by emission limits, durability, testing conditions and continuous emission monitoring, the potential accelerated shift to electric vehicles and the impacts on competitiveness, where industry stakeholders seem to have different views.

The stakeholders' views on the introduction of a single Euro emission standard for cars/vans and lorries/buses diverged from the Commission's views. Initially, stakeholders from industry did not support this simplification measure. Since the arguments of industry, such as proper differentiation as well as international harmonisation, should be achievable also with the basic acts (715/2007 and 595/2009) merged while the specific implementing regulations are kept separate, the Commission has continued this approach. This was confirmed with the stakeholders in the follow-up interviews linked to the targeted consultation on the impact assessment and in the AGVES meeting of 16 November 2020.

- **Collection and use of expertise**

The Impact Assessment draws on evidence from several sources including studies by external contractors from the CLOVE consortium, including key experts from the Laboratory of Applied Thermodynamics of the Aristotle University of Thessaloniki (LAT) (GR), Ricardo (UK), EMISIA (GR), TNO (NL), TU Graz (AT), FEV (DE) and VTT (FI).

A first study by CLOVE was launched to review, compare and draw lessons from legislation in other part of the world, evaluate the effectiveness of current EU emission tests and develop and assess new emission tests for regulated and non-regulated pollutants. As a follow-up, a second study covered a thorough review of the cost-effectiveness of measures that were introduced by the first study in addition to a feasibility assessment of new pollutant emission limits for all vehicles and an analysis of the simplification potential of vehicle emission standards. This study also supported the evaluation of the Euro 6/VI framework, while providing the evidence necessary for the Impact Assessment. These studies have been

underpinned by analysis and tests performed by the Joint Research Centre of the Commission, in its facilities located in Ispra Italy.

For the quantitative assessment of the economic, social and environmental impacts, the Impact Assessment study and report have relied on the SIBYL and COPERT model. COPERT is used for calculating greenhouse gas and air pollutant emission inventories for road transport based on real-world emissions coordinated by European Environment Agency (EEA) and the JRC. SIBYL is a specialised tool for projecting the impact of detailed vehicle technology on future fleets, energy, emissions and costs designed to support policy making. Both models were updated based on data and evidence collected through the stakeholder consultation, latest emission factors and literature reviews.

In addition, further information was gathered addressing the following issues:

- the available technologies that can be deployed in the relevant time period to reduce pollutant emissions, as well as their effectiveness and cost;
- health and environmental impacts in monetary terms;
- general macro-economic indicators, such as creation of new jobs, skills required, research and innovation, etc.;
- competitiveness of the EU industry and internal market cohesion;
- qualitative impacts on SMEs and consumers (incl. consumer trust).

A list of the studies and sources is provided in Annex 1 of the Impact Assessment.

- **Impact assessment**

The measures in this proposal are balanced with respect to their health and environmental benefits and burden for the industry. Effectiveness and cost-efficiency of the measures is supported by the accompanying Impact Assessment. The summary sheet and the positive opinion of the Regulatory Scrutiny Board can be accessed through X (link to be added).

Three policy options, with a different mix of measures and ambition levels, were assessed to tackle the identified problems in the current Euro 6/VI Regulations taking into account the green and digital transformation required by the European Green Deal. The transformation provides opportunities for more advanced solutions in terms of pollutant emission reductions, such as the use of low-pollution technology and continuous emission monitoring with advanced sensors and vehicle connectivity. The policy options took also into account the shift to electrified powertrains requiring cost-efficient and adequate solutions for reducing pollutant emissions in the combustion-engine segment.

In line with the specific objectives, policy option 1, 2 (2a and 2b) and 3a aimed at reducing complexity of the current Euro emission standards by introducing simplification measures (such as replacing two regulations with one single regulation, or eliminating obsolete tests). Up-to-date emission limits for all relevant air pollutants were provided in policy option 1 with low ambition, in option 2a and 3a with medium ambition and in option 2b with high ambition. Control of real-world emissions were improved in policy option 1 by low ambitious real-driving testing boundaries, in option 2a by medium ambitious real-driving testing boundaries and durability requirements, in option 2b by high ambitious real-driving testing boundaries and durability requirements and in option 3a by medium ambitious real-driving testing boundaries, durability requirements and continuous emission monitoring.

The Impact Assessment has found the medium-ambitious policy option 3a to be the most proportionate for light- and heavy-duty vehicles. The policy option was found to be the most effective in achieving the identified objectives, while also being cost-efficient by bringing the highest health and environmental benefits for citizens at low regulatory costs for industry. In addition, the option was found coherent with the air quality legislation, CO_2 emission standards and the roadworthiness directives. Through introducing continuous emission monitoring, option 3a would also be most in line with the twin green and digital transformation aimed at by the European Green Deal.

The social, economic and environmental impacts of option 3a can be summarised as follows:

Total regulatory costs are estimated €304 per vehicle for light-duty vehicles and at €2 681 per vehicle for heavy-duty vehicles. Over the 25-year period assessed in the Impact Assessment, this would lead to a total regulatory cost of €35.48 billion for light-duty vehicles and €17.53 billion for heavy-duty vehicles.

On the other hand, monetary health and environmental benefits amount up to €55.75 billion and €133.58 billion respectively through the reduction of harmful air pollutant emissions. These benefits are mostly realised through the reduction of NO_x and $PM_{2.5}$ emissions. In addition, this option showed for all vehicles the highest positive impacts in terms of access to international key markets and innovation.

The adjustment costs (covering substantive compliance costs due to equipment costs for emission control technologies and the related R&D and calibration costs including facilities and tooling costs) were assessed in option 3a to be in the order of €67 billion between 2025 and 2050 for light-duty vehicles and €26 billion for heavy-duty vehicles.

Next to these benefits, regulatory cost savings (covering cost savings during testing, witnessing of tests by type-approval authorities and type-approval fees as well as administrative costs savings for reporting and other information obligation as part of the type-approval procedures) are estimated at €4.67 billion for light-duty vehicles and at €0.58 billion for heavy-duty vehicles in the preferred option.

Overall, the impact of option 3a on consumer affordability would be limited. While the total regulatory costs compared to baseline are expected to be passed on to consumers, this would lead to a 0.8% increase in the price of small petrol vehicles and a 2.2% increase in the price of small diesel vehicles for cars and vans.

Battery durability requirements were added following the adoption of a new UN Global Technical Regulation No. 22 on 14 April 2022 on In-vehicle Battery Durability for Electrified Vehicles, setting minimum performance requirements for electric vehicles at a level that will not require change of battery technologies. It is expected that these requirements will not create additional costs but raise consumer awareness and confidence.

In the light of the current geopolitical and economic circumstances, a final review has been made to ensure up-to-date considerations for the automotive industry and consumers. The rise in costs that began in 2021, particularly for energy and raw materials, has accelerated dramatically. At the same time, demand and sales of motor vehicles have dropped while the investment needs for the green transformation are increasing. This puts pressure on the automotive supply chain and raises affordability issues for consumers, in an overall context of high inflation. In order to facilitate a successful green transition of the automotive ecosystem,

the above-mentioned option 3a has been readjusted for light-duty vehicles to reduce adjustment costs, while keeping the overall medium environmental and digital ambition.

For cars and vans, the exhaust emission limits are set at the lowest level currently imposed under Euro 6 for cars therefore imposing lower limits for vans than under Euro 6, while durability requirements as well as real-driving testing boundaries are set as in option 3a. The requirements for evaporative emissions, battery durability and non-exhaust emissions are set as in option 3a. It is an intermediate option in terms of tailpipe emission limits between option 1 and 2a/3a. This choice has been made in order to balance the need to improve environmental performance with the need to avoid disproportionate investments for vehicles that will no longer be sold after 2035. Beyond a certain threshold, costs increase significantly faster than environmental benefits. The option chosen improves affordability of cars and vans for consumers and minimises investment costs required for the development of new hardware solutions for emission control systems for cars and vans with internal combustion engine.

The selected measures set technology- and fuel-neutral limits for cars and vans, while allowing for slightly higher limits for underpowered vans, where such allowance is justified based on technical reasons. Testing boundaries are as in option 3a, therefore allowing for gains to be made by capping currently uncontrolled emissions. Methodologies and limits for evaporative emissions, brakes, tyres, as well as battery durability and the use of emission monitoring tools with sensors follow the ones presented in option 3a of the Impact Assessment Report. These measures account for an increasingly important share of the emission reduction potential and of the environmental and health benefits, in particular in urban environments where exposure to those pollutants is more prominent. Emissions from brakes and tyres will soon account for the majority of particle emissions.

For lorries and buses, option 3a is retained. This reflects the significantly slower transition of lorries and buses to zero exhaust emission technologies. Lorries and buses with internal combustion engines are expected to remain much longer on the EU market.

For all motor vehicles, all simplification measures are kept as in option 3a since they reflect the need to modernise the regulation and reduce administrative burden. This option also ensures improvement in total emissions, in particularly during cold start and in urban driving, since vehicles also need to comply with the emission limits during short trips.

In terms of environmental benefits, the selected option brings significant reduction of emissions, only slightly lower than option 3a for cars and vans, since the higher emission limits are accompanied with improvements in testing conditions and compliance measures that were not foreseen in option 1. A NO_x reduction from cars/vans of more than 85% compared to 2018 levels and more than 80% from lorries/buses has been estimated with the selected measures by 2035. The total NOx by motor vehicles are estimated to be cut in half by 2035 compared to the baseline.

Regulatory cost savings are expected to be the same as in option 3a. The product development costs for industry are significantly reduced since the new option will not require redesign of vehicles, but compliance can be achieved with currently used technologies for emission controls and recalibration. The regulatory costs are expected to be significantly reduced and be in between those for option 1 and option 3a. In total, the selected measures are expected to bring a net benefit similar or higher than for option 3a, bringing significant emission savings with limited adjustment costs.

- **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.

SMEs (reference IA): The Impact Assessment found that European automotive industry mostly comprises of large manufacturers active in vehicle assembly and component production. Some SMEs manufacture vehicles or systems that require an EU emission type-approval. 35 SMEs were identified that build specialised vehicles on the basis of powertrains produced by larger manufacturers. Simplified rules are proposed for small volume manufacturers, to take into account the specificities linked with limited production.

Cost savings: The Impact Assessment has also analysed how to possibly simplify the legislation and reduce unnecessary compliance and administrative costs. While the proposal increases regulatory costs for vehicle manufacturers in the form of hardware costs for pollution control technologies and sensors; and R&D and related calibration costs, the proposals also brings compliance cost savings during testing, witnessing of tests by type-approval authorities, type-approval fees as well as administrative costs savings. In particular, administrative burden would decrease through the introduction of simplification measures and the new requirements for continuous emission monitoring. The latter are expected to further simplify the reporting and other information provision obligations for granting type-approval and verification procedures through reduced number of type-approvals. In option 3a, administrative cost savings are estimated at €224 thousand per type-approval (€22 per vehicle) for diesel cars/vans and at €204 thousand per type-approval for petrol cars/vans (€26 per vehicle). For lorries/buses, the administrative cost savings in option 3a amount up to €66 thousand per diesel type-approval (€22 per vehicle) and €67 thousand per petrol type-approval (€47 per vehicle). In the finally selected options, all costs for cars/vans are expected to be lower.

Competitiveness: Despite regulatory costs for industry and cumulative investments with CO_2 emission standards, the proposal is expected to have a positive effect on competitiveness. This is due to new market opportunities stemming from the development of new sensors along with communication protocols, cybersecurity and anti-tampering options. The use of advanced digital and clean technologies, will be an asset in gaining access to international key markets, in particular United States and China.

Digital: As aimed high in the Digital Decade initiative[37], all sectors should undergo digital transformation which will largely contribute to the green transformation, including for the road transport, to reach zero-pollution ambition for a toxic-free environment. The proposal entails additional coherence with the twin transition as it support the reduction of emission over vehicles' lifetimes by introducing continuous emission monitoring and vehicle connectivity. National Type Approval Authorities should also preferably deliver services digitally (including machine readable information). This contributes to achieving an effective digital society and economy (Digital by default).

The initiative is consistent with the do not significant harm principle, as it contributes to the objectives of the green transition of the European Green Deal (in particular sustainable mobility and zero pollution ambition). It ensures that transport becomes less polluting, especially in cities and is considered as a vital part of the transition towards clean mobility.

[37] COM(2021) 118 final

The Impact Assessment has established that the options are not expected to do significant harm to any of the environmental Sustainable Development Goals (SDGs)[38].

- **Fundamental rights**

This proposal has no consequences for the protection of fundamental rights and equality. It has no differential impact due to gender.

4. BUDGETARY IMPLICATIONS

The proposal does not require additional financial resources.

5. OTHER ELEMENTS

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

This proposal makes arrangements to monitor and evaluate the effectiveness of Euro 7 emission standards against operational objectives and to establish causality between the observed outcomes and the legislation. For this purpose, a number of monitoring indicators are proposed for the review of Euro 7 emission standards. These monitoring indicators include:

- number of emission type-approvals under Euro 7 per vehicle type;
- costs during implementation phase and administrative costs per emission type-approval;
- proof of improved control of emissions under all conditions of use for all regulated pollutants;
- enforcement costs, including costs for infringements and penalties in case of non-compliance and monitoring costs;
- evolution of emissions over the lifetime of vehicles as evidenced by appropriate testing campaigns and continuous emission monitoring.

The review of Euro 7 emission standards will also evaluate a set of more general indicators from other EU air pollutant policies for road transport:

- annual pollutant concentration levels in Europe's urban areas and annual share of road transport to the pollutant emissions as reported by the Member States to the EEA under the National Emission reduction Commitments Directive (NECD)[39] and included in the annual EEA report on air quality in Europe;
- annual number of registered vehicles and share of powertrain technologies on EU roads as reported by the Member States to the European Alternative Fuels Observatory;
- annual development of impacts of air pollution on health (i.e. premature deaths related to exposure of certain pollutants) as included in the annual EEA report on air quality in Europe.

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38 In particularly for the following: Goal 3: Good health and well-being, Goal 6: Clean water and sanitation, Goal 13: Climate action, Goal 14: Life below water and Goal 15: Life on land.

39 Directive (EU) 2016/2284

- annual share of road transport to the pollutant emissions of certain pollutants as reported by the Member States to the EEA under the NECD;
- annual number of notifications received from Member States for barriers of internal EU trade of cars, vans, lorries/buses caused by technical prescriptions imposed by national, regional or local authorities (i.e. bans of any kind) under the notification procedure of Directive 2015/1535[40].

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

Chapter I sets out general provisions, including the subject matter (Article 1), scope of the Regulation (Article 2) and the definitions of key terms used in the Regulation (Article 3).

Chapter II contains provisions on the obligations of manufacturers for the type-approval of motor vehicles, systems, components and separate technical units, with regard to their pollutant emissions and battery durability. More specifically, it includes the obligation of the manufacturers in regards to the construction and design of such vehicles including cybersecurity measures (Article 4) and options for manufacturers to declare better performance with lower emission limits and/or improved battery durability as well as geofencing technologies to enable zero exhaust emission mode (Article 5). Manufacturers are required to comply with specific durability requirements for the lifetime of the vehicles but also the traction battery durability minimum performance, to meet the emission limits and other related technical requirements (Article 6). In order to demonstrate compliance with these requirements specific tests should be performed, as well as specific declarations and administrative procedures (Article 7). Article 8 and Article 9 provide with specific rules regarding respectively small volume manufacturers (Article 8) and multistage vehicles (Article 9) as regards tests and responsibilities.

Chapter III provides for Obligations of Member States as regards Type-approval and market surveillance, particularly as regards the role of national approval authorities and dates of entry into force (Article 10) and includes specific provisions for components and separate technical units (Article 11) as well as consumable reagent and pollution controls systems (Article 12).

Chapter IV includes provisions on the Role of the Commission and third parties regarding service conformity and market surveillance checks (Article 13).

Chapter V lays down the specific tests and methodologies to be applied by manufacturers and authorities for each concerned vehicle category to prove compliance against requirements and obligations under this Regulation (Article 14). It also includes specific provisions regarding adaptation to technical progress (Article 15).

Chapter VI provides for general provisions on power conferred on the Commission to adopt delegated acts (Article 16), committee procedure (Article 17) and reporting requirements for Member States (Article 18).

Chapter VII provides for final provisions on repeal of Regulation (EC) 715/2007 and Regulation (EC) 595/2009 (Article 19) and entry into force and application of the Regulation (Article 20).

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40 Directive (EU) 2015/1535 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services; see also 2015/1535 notification procedure

2022/0365 (COD)

Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulations (EC) No 715/2007 and (EC) No 595/2009

(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 114 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[41],

Having regard to the opinion of the Committee of the Regions[42],

Acting in accordance with the ordinary legislative procedure,

Whereas:

(1) The internal market is an area in which the free movement of goods, persons, services and capital must be ensured. To that end Regulation (EU) 2018/858 of the European Parliament and of the Council[43] introduced a comprehensive type-approval and market surveillance system for motor vehicles, trailers, and for systems, components and separate technical units intended for such vehicles.

(2) The technical requirements for the type-approval of motor vehicles, engines and replacement parts with regard to emissions ('emission type-approval') should remain harmonised to ensure the proper functioning of the internal market, as well as a high level of environmental and health protection common in all Member States.

(3) This Regulation is a separate regulatory act for the purposes of the EU type-approval procedure laid down in Annex II to Regulation (EU) 2018/858. It lays down provisions and requirements on vehicle emissions and battery durability, whereas the technical elements will be laid down by implementing acts adopted in accordance with the examination procedure and the assistance of a committee within the meaning of Regulation (EU) No 182/2011 (comitology procedure).

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41 OJ C , , p. .

42 OJ C , , p. .

43 Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles, amending Regulations (EC) No 715/2007 and (EC) No 595/2009 and repealing Directive 2007/46/EC (OJ L 151, 14.6.2018, p. 1).

(4) The technical requirements for the type-approval of motor vehicles, engines and replacement parts with regard to emissions ('emission type-approval') are currently set out in two Regulations that apply to emission type-approval for light-duty and heavy-duty vehicles respectively, i.e. Regulation (EC) No 715/2007 of the European Parliament and of the Council ('Euro 6') [44] and Regulation (EC) No 595/2009 of the European Parliament and of the Council ('Euro VI') [45]. The reason for having two Regulations was that the emissions of heavy-duty vehicles were checked based on engine testing, while for light-duty vehicles the basis was whole vehicle testing. Since then, methodologies have been developed that allow testing of both light- and heavy-duty vehicles on the road. It is therefore no longer necessary to base type-approval on engine testing.

(5) Incorporating the requirements laid down in Regulation (EC) No 715/2007 and Regulation (EC) No 595/2009 into a single Regulation should ensure internal coherence of the system of emission type-approvals for both light and heavy-duty vehicles, while allowing for different emission limits for such vehicles.

(6) Furthermore, the current emission limits were adopted in 2007 for light-duty vehicles and for heavy-duty vehicles in 2009. Both emission limits were adopted on the basis of the then available technology. Since then, technology has advanced and the level of emissions achieved with a combination of current technologies is much lower than that achieved more than 15 years ago. That technological progress should be reflected in emission limits based on state-of-the-art existing technology and knowledge of pollution controls and for all relevant pollutants.

(7) It is also necessary to reduce complexity, administrative and implementation costs for manufacturers and authorities and to ensure effective and efficient implementation of the Euro emission standards. Simplification is achieved by eliminating different application dates for the limits and tests which existed under Euro 6 and Euro VI, by eliminating multiple and complex emission tests where such tests are not needed, by referring to standards under existing UN Regulations where applicable, and by ensuring a streamlined and consistent set of procedures and tests for the various phases of the emission type-approval.

(8) In order to ensure that the emissions for both light and heavy duty vehicles are limited in real life, testing vehicles in real conditions of use with a minimum set of restrictions, boundaries and other driving requirements and not only in the laboratory is required.

(9) The accuracy of the portable emission measurement equipment used for measuring the emissions of vehicles used on the road has improved significantly since their introduction. It is therefore appropriate to base the emission limits on such on-road measurements and therefore on-road testing no longer requires the use of conformity factors.

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[44] Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 171, 29.6.2007, p. 1).

[45] 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 (OJ L 188, 18.7.2009, p. 1).

(10) Regulations (EC) No 715/2007 and (EC) No 595/2009 require that vehicles respect the emission limits for a specified period of time, which does not correspond anymore to the average lifetime of vehicles. It is therefore appropriate to lay down durability requirements that reflect the average expected lifetime of vehicles in the Union.

(11) There are now technologies available and used widely worldwide that limit evaporative emissions of volatile organic compounds during the use, parking and refuelling of a vehicle with petrol fuel. It is therefore appropriate to set the emission limits for such volatile organic compounds at a lower level and introduce emission limits for the refuelling phase.

(12) Non-exhaust emissions consist of particles emitted by tyres and brakes of vehicles. Emissions from tyres is estimated to be the largest source of microplastics to the environment. As shown in the Impact Assessment, it is expected that by 2050, non-exhaust emissions will constitute up to 90% of all particles emitted by road transport, because exhaust particles will diminish due to vehicle electrification. Those non-exhaust emissions should therefore be measured and limited. The Commission should prepare a report on tyre abrasion by the end of 2024 to review the measurement methods and state-of-the-art in order to propose tyre abrasion limits.

(13) Regulation (EU) 2019/2144 of the European Parliament and of the Council[46] regulates gear shift indicators (GSI), whose main purpose is to minimise fuel consumption of a vehicle when a driver follows its indications. However, the pollutant emission requirements in real use, including when following the GSI, should be addressed in this Regulation.

(14) Vehicles with traction batteries, including plugin hybrids and battery electric vehicles, contribute to the decarbonisation of the road transport sector. In order to gain and increase consumer trust in such vehicles, they should be performant and durable. It is therefore important to require that traction batteries retain a good part of their initial capacity after many years of use. That is of particular importance to buyers of second hand electric vehicles to ensure that the vehicle will continue to perform as expected. Monitors of the battery state-of-health should therefore be required for all vehicles that use traction batteries. In addition minimum performance requirements for battery durability of passenger cars should be introduced, taking into account the UN Global Technical Regulation 22[47].

(15) Tampering of vehicles to remove or deactivate parts of the pollution control systems is a well-known problem. Such practice leads to uncontrolled emissions and should be prevented. Tampering of the odometer, leads to false mileage and hampers the proper in-service control of a vehicle. It is therefore of the utmost importance to guarantee the

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[46] Regulation (EU) 2019/2144 of the European Parliament and of the Council of 27 November 2019 on type-approval requirements for motor vehicles and their trailers, and systems, components and separate technical units intended for such vehicles, as regards their general safety and the protection of vehicle occupants and vulnerable road users, amending Regulation (EU) 2018/858 of the European Parliament and of the Council and repealing Regulations (EC) No 78/2009, (EC) No 79/2009 and (EC) No 661/2009 of the European Parliament and of the Council and Commission Regulations (EC) No 631/2009, (EU) No 406/2010, (EU) No 672/2010, (EU) No 1003/2010, (EU) No 1005/2010, (EU) No 1008/2010, (EU) No 1009/2010, (EU) No 19/2011, (EU) No 109/2011, (EU) No 458/2011, (EU) No 65/2012, (EU) No 130/2012, (EU) No 347/2012, (EU) No 351/2012, (EU) No 1230/2012 and (EU) 2015/166 (OJ L 325, 16.12.2019, p. 1).

[47] United Nations Global Technical Regulation on In-vehicle Battery Durability for Electrified Vehicles, UN GTR 22

highest possible security protection of those systems, complete with security certificates and appropriate anti-tampering protection to ensure that neither pollution control systems nor the vehicle odometer can be tampered with.

(16) Sensors installed on vehicles are already used today to detect anomalies on emissions and trigger related repairs through the on-board diagnostic (OBD) system. The OBD system currently in use, however, does not detect accurately or timely the malfunctions and neither does it sufficiently and timely force repairs. As a result, it is possible that vehicles emit much more than they are allowed to do. The sensors used up to now for OBD can also be used to monitor and control the emission behaviour of the vehicles on a continuous basis via an on-board monitoring (OBM) system. The OBM will also warn the user to perform repairs of the engine or the pollution control systems when these are needed. It is therefore appropriate to require that such a system is installed and to regulate its technical requirements.

(17) Manufacturers may opt to produce vehicles which comply with lower emission limits or with better battery durability than what is required in this Regulation, or which include advanced options including geofencing and adaptive controls. Consumers and national authorities should be able to identify such vehicles through appropriate documentation. An environmental vehicle passport (EVP) should therefore be made available.

(18) In case the Commission makes a proposal for registering after 2035 new light-duty vehicles running exclusively on CO2 neutral fuels outside the scope of the CO2 fleet standards, and in conformity with Union law and the Union's climate neutrality objective, this Regulation will need to be amended to include the possibility to type approve such vehicles.

(19) Emissions from vehicles sold by small volume manufacturers constitute an insignificant part of emissions in the Union. Some flexibility may therefore be allowed in some of the requirements for such manufacturers. Small volume manufacturers should therefore be able to substitute certain tests during type-approval with declarations of compliance, while ultra-small volume manufacturers should be allowed to use laboratory tests based on random real-driving cycles.

(20) Regulations (EU) 2019/631[48] and (EU) 2019/1242[49] of the European Parliament and of the Council regulate the average fleet CO_2 emission performance for new motor vehicles in the Union. The procedures and methodologies for the accurate determination of CO_2 emissions, fuel and energy consumption, electric range and power for individual vehicles should be introduced in emission type-approval.

(21) In order to ensure uniform conditions for the implementation of this Regulation, implementing powers should be conferred on the Commission in relation to obligations of manufacturers as part of type-approval and procedures, test and methodologies to be applied for declaration of conformity, conformity of production check, in-service conformity-check and environmental vehicle passport (EVP); options

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48 Regulation (EU) 2019/631 of the European Parliament and of the Council of 17 April 2019 setting CO2 emission performance standards for new passenger cars and for new light commercial vehicles, and repealing Regulations (EC) No 443/2009 and (EU) No 510/2011 (OJ L 111, 25.4.2019, p. 13).

49 Regulation (EU) 2019/1242 of the European Parliament and of the Council of 20 June 2019 setting CO2 emission performance standards for new heavy-duty vehicles and amending Regulations (EC) No 595/2009 and (EU) 2018/956 of the European Parliament and of the Council and Council Directive 96/53/EC (OJ L 198, 25.7.2019, p. 202)

and designations of vehicles; requirements, tests, methods and corrective measures related to durability of vehicles, systems, components and separate technical units, as well as registration and communication capabilities of OBM systems, including for the purpose of periodic technical inspections and roadworthiness checks; requirements and information to be provided by manufacturers of multistage vehicles as well as procedures to determine the CO_2 value for these multistage vehicles; technical elements, administrative and documentation requirements for emission type-approval, checks and inspections and market surveillance checks, as well as reporting obligations, in-service conformity and conformity of production checks; methods and tests to (i) measure exhaust emissions in the lab and on the road, including random and worst-case RDE test cycles, the use of portable emissions measurement systems for verifying real driving emissions, and idle emissions, (ii) determine the CO_2 emissions, fuel and energy consumption, the electric range and engine power of a motor vehicle, (iii) provide specifications for gear shift indicator (GSI) (iv) determine the impact of O_3, O_4 trailers on the CO_2 , fuel and energy consumption, electric range and engine power of a motor vehicle, (iv) measure crankcase emissions, evaporative emissions, brake emissions, (v) evaluate compliance with minimum performance requirements of battery durability, (vi) assess the in-service conformity of engines and vehicles; compliance thresholds and performance requirements, as well as (vii) test and methods to ensure performance of sensors (OBD and OBM); (viii) methods to ensure and assess security measures; specification and characteristics of driver warning systems and inducement methods and to assess their correct operation; (ix) methods to assess the correct operation, effectiveness, regeneration and durability of original and replacement pollution control systems; (x) methods to ensure and assess security measures including vulnerability analysis and tampering protection; (xi) methods to assess the correct functioning of types approved under specific EURO7 designations; (xii) criteria for emission type-approvals for small and ultra-small volume manufacturers; (xiii) checks and test procedures for multistage vehicles; (xiv) performance requirements for test equipment; (xv) specification of reference fuels; and (xvi) methods for assessing the absence of defeat devices and defeat strategies; (xvii) to measure tyre abrasion, as well as (xviii) EVP format, data and method of communication of the EVP data. Those powers should be exercised in accordance with Regulation (EU) No 182/2011 of the European Parliament and of the Council[50].

(22) In order to amend or supplement, as appropriate, non-essential elements of this Regulation, the power to adopt acts in accordance with Article 290 of the Treaty on the Functioning of the European Union should be delegated to the Commission in respect of test conditions based on data collected when testing Euro 7 vehicles, brakes or tyres; test requirements, in particular taking into account technical progress and data collected when testing Euro 7 vehicles; introducing vehicle options and designations based on innovative technologies for manufacturers but also setting out brake particle emission limits and abrasion limits for tyre types as well as minimum performance requirements of batteries and durability multipliers based on data collected when testing Euro 7 vehicles and setting out definitions and special rules for small volume manufacturers for vehicles of categories M_2, M_3, N_2, N_3, 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

[50] 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).

the principles laid down in the Interinstitutional Agreement of 13 April 2016 on Better Law-Making[51]. In particular, in order to ensure equal participation in the preparation of delegated acts, the European Parliament and the Council receive all documents at the same time as Member States' experts, and their experts systematically have access to meetings of Commission expert groups dealing with the preparation of delegated acts.

(23) In the interest of clarity, rationality and simplification, since the rules on emission type-approval of motor vehicles and engines, and of systems, components and separate technical units intended for such vehicles are updated and all contained in this Regulation, the existing Regulations (EC) No 595/2009 and (EC) No 715/2007 should be repealed and replaced by this Regulation.

(24) Whenever the measures provided for in this Regulation entail the processing of personal data, they should be carried out in accordance with Regulations (EU) 2016/679 of the European Parliament and of the Council[52] and Regulation (EC) No 45/2001 of the European Parliament and of the Council[53], as well as the national implementing measures thereto.

(25) It is important to grant Member States, national type-approval authorities and economic operators enough time to prepare for the application of the new rules introduced by this Regulation. The date of application should therefore be deferred. While for light duty vehicles the date of application should be as soon as technically possible, for heavy duty vehicles and trailers the date of application may be further delayed by two years, since the transition to zero-emission vehicles will be longer for heavy duty vehicles.

(26) Since the objectives of this Regulation, namely to lay down harmonised rules on the administrative and technical requirements for the type-approval of vehicles of categories M and N, and of systems, components and separate technical units, and on market surveillance of such vehicles, systems, components and separate technical units, with respect to emissions cannot be sufficiently achieved by the Member States, but can rather, by reason of their scale and effects, be better achieved at Union level, the Union may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty on European Union. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve those objectives,

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51 OJ L 123, 12.5.2016, p. 1.

52 Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1).

53 Regulation (EC) No 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Union institutions and bodies and on the free movement of such data (OJ L 8, 12.1.2001, p. 1).

HAVE ADOPTED THIS REGULATION:

Chapter I – Subject matter, scope and definitions

Article 1
Subject matter

1. This Regulation establishes common technical requirements and administrative provisions for the emission type-approval and market surveillance of motor vehicles, systems, components and separate technical units, with regard to their CO_2 and pollutant emissions, fuel and energy consumption and battery durability.

2. This Regulation lays down rules for the initial emission type approval, conformity of production, in-service conformity, market surveillance, the durability of pollution control systems and traction batteries, on-board monitoring systems, security provisions to limit tampering and cybersecurity measures, and the accurate determination of CO_2 emissions, electric range, fuel and energy consumption and energy efficiency.

Article 2
Scope

This Regulation applies to motor vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3, as well as trailers of O_3 and O_4 categories as specified in Article 4 of Regulation (EU) No 2018/858, including those designed and constructed in one or more stages, and to systems, components and separate technical units intended for such vehicles.

Article 3
Definitions

For the purposes of this Regulation, definitions in Regulation (EU) 2018/858 apply.

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

(1) ‘emission type-approval’ means an EU type-approval complying with the administrative provisions and technical requirements of this Regulation in regards to their CO_2 and pollutant emissions, fuel and energy consumption and battery durability;

(2) ‘initial emission type approval’ or ‘IETA’ means the first phase of an emission type approval procedure before the emission type approval certificate is granted by the authorities and vehicles are put into production;

(3) ‘conformity of production’ or ‘CoP’ means the activities carried out on new vehicles, separate technical units or components selected at the manufacturer’s premises to ensure that the products put into the market comply with the requirements set out in this Regulation;

(4) ‘in-service conformity’ or ‘ISC’ means the activities carried out on vehicles in circulation with the purpose of verifying the durability requirements set out in this Regulation;

(5) ‘engine’ means the propulsion source of a vehicle;

(6) ‘emissions’ means the exhaust and non-exhaust emissions of a motor vehicle;

(7) ‘exhaust emissions’ means the emission from the tailpipe of the motor vehicle or engine of all of the following: CO_2, gaseous, solid, liquid compounds and crankcase emissions;

(8) ‘gaseous pollutants’ means the emissions of gaseous chemical species, excluding CO_2;

(9) ‘CO_2 emissions’ or ‘CO_2’ means the emission of carbon dioxide from the tailpipe of the motor vehicle or engine;

(10) ‘nitrogen oxides’ or ‘NOx’ means the sum of the oxides of nitrogen emitted from the tailpipe;

(11) ‘particulate matter’ or ‘PM’ means any material emitted from the tailpipe or the brakes and collected on a filter media;

(12) ‘particulate matter less than 10 μm’ or ‘PM_{10}’ means the particulate matter with a diameter less than 10 μm;

(13) ‘particle number’ or ‘PN’ means the total number of solid particles emitted from the tailpipe or the brakes;

(14) ‘particle number above 10 nm’ or ‘PN_{10}’ means the total number of solid particles emitted from the tailpipe or the brakes that have a diameter larger or equal than 10 nm;

(15) ‘carbon monoxide’ or ‘CO’ means the carbon monoxide emitted from the tailpipe;

(16) ‘methane’ or ‘CH_4’ means the methane emitted from the tailpipe;

(17) ‘total hydrocarbons’ or ‘THC’ means the total hydrocarbons emitted from the tailpipe;

(18) ‘non-methane hydrocarbons’ or ‘NHMC’ means the total hydrocarbons emitted from the tailpipe excluding methane;

(19) ‘non-methane organic gases’ or ‘NMOG’ means the sum of non-oxygenated and oxygenated hydrocarbons emitted from the tailpipe;

(20) ’ammonia’ or ‘NH_3’ means the ammonia emitted from the tailpipe;

(21) ’formaldehyde’ or ‘HCHO’ means the formaldehyde emitted from the tailpipe;

(22) ‘WHTC’ means the worldwide harmonised transient driving cycle in accordance with paragraph 7.2.1. of Annex 4 to UN Regulation No. 49;

(23) ‘WHSC’ means the worldwide harmonised steady state driving cycle in accordance with paragraph 7.2.2. of Annex 4 to UN Regulation No. 49;

(24) ‘vehicle energy consumption calculation tool’ or ‘VECTO’ means a simulation tool used for determining CO_2 emissions, fuel consumption, electric energy consumption and the electric range from heavy duty vehicles; ‘energy consumption’ means the consumption of electric energy from each and all propulsion sources within a vehicle;

(25) ‘fuel consumption’ means the consumption of fuel from each and all propulsion sources within a vehicle;

(26) ‘evaporative emissions’ means the hydrocarbon vapours emitted from the fuel system of a vehicle excluding those from exhaust emissions;

(27) ‘crankcase emissions’ means the gaseous pollutants emitted from the spaces in, or external to, an engine which are connected to the oil sump by internal or external ducts;

(28) ‘brake particle emissions’ means the particles emitted from the brake system of a vehicle;

(29) ‘tyre abrasion’ means the mass of material lost from the tyre due to the abrasion process and emitted to the environment;

(30) ‘non-exhaust emissions’ means evaporative, tyre abrasion, and brake emissions;

(31) ‘pollutant emissions’ means exhaust and non-exhaust emissions other than CO_2 emissions;

(32) ‘pollution control device’ means those devices of a vehicle that control or limit pollutant emissions;

(33) ‘pollution control systems’ means the pollution control devices installed in a vehicle, including all control units and software that govern their use;

(34) ‘original pollution control systems’ means a pollution control system or an assembly of such systems covered by the type-approval granted for the vehicle concerned;

(35) ‘replacement pollution control systems’ means a pollution control system or an assembly of such systems intended to replace an original pollution control system and which can be approved as a separate technical unit;

(36) ‘adaptive control function’ means a system that adjusts engine, pollution control systems or other vehicle parameters with the purpose to improve fuel or energy consumption and the effectiveness of the pollution control system based on the expected usage of the vehicle;

(37) ‘on-board diagnostic system’ or ‘OBD’ means a system that can generate vehicle on-board diagnostic (OBD) information, as defined in Article 3, point 49, of Regulation (EU) 2018/858 and is capable of communicating that information via the OBD port and over the air;

(38) ‘on-board monitoring system’ or ‘OBM’ means a system on board a vehicle that is capable of detecting either emission exceedances or when a vehicle is in zero emission mode if applicable, and capable of indicating the occurrence of such exceedances by means of information stored in the vehicle, and of communicating that information via the OBD port and over the air;

(39) ‘on-board fuel and energy consumption monitoring device’ or ‘OBFCM device’ means any software or hardware that senses and uses vehicle, engine, fuel or electric energy and payload/mass parameters to determine, store in the vehicle the fuel and energy consumption data and other parameters relevant for determining the fuel or energy consumption and energy efficiency of the vehicle;

(40) ‘defeat device’ means any software or hardware that senses temperature, vehicle speed, engine speed , transmission gear, manifold vacuum or any other parameter to activate, modulate, delay or deactivate the operation of any part of the pollution control system, with the purpose of reducing the effectiveness of the pollution control system when the vehicle is driven;

(41) ‘defeat strategy’ means a strategy that reduces the effectiveness of the pollution controls under ambient or engine operating conditions encountered either during

vehicle operation or outside the type-approval test procedures or falsifies data related to sensors, fuel or energy consumption, electric range or battery durability;

(42) ‘real driving emissions’ or ‘RDE’ means the emissions of a vehicle under normal driving conditions and extended conditions as specified in Tables 1 and 2 of Annex III;

(43) ‘odometer’ means an instrument indicating the total distance driven by the vehicle since its production;

(44) ‘tampering’ means the inactivation, or modification by the economic operators or independent operators, of the engine, vehicle pollution control device and system, propulsion system, traction battery, odometer, OBFCM or OBD/OBM, including any software or other logical control elements of those systems and their data;

(45) ‘own production facility’ means a manufacturing or assembly plant used by the manufacturer for the purpose of manufacturing or assembling new vehicles for that manufacturer, including, where relevant, vehicles which are intended for export;

(46) ‘own design centre’ means a facility in which the whole vehicle is designed and developed, and which is under the control and use of the manufacturer;

(47) ‘small volume manufacturer’ means a manufacturer of fewer than 10 000 new motor vehicles of category M_1 or 22 000 new motor vehicles of category N_1 registered in the Union per calendar year and which:

(a) is not part of a group of connected manufacturers; or

(b) is part of a group of connected manufacturers that is responsible in total for fewer than 10 000 new motor vehicles of category M_1 or 22 000 new motor vehicles of category N_1 registered in the Union per calendar year; or

(c) is part of a group of connected manufacturers but operates its own production facilities and own design centre;

(48) ‘ultra-small-volume manufacturer’ means a small volume manufacturer that produces fewer than 1 000 new motor vehicles of category M_1 or fewer than 1 000 new motor vehicles of category N_1 registered in the Union in the previous calendar year;

(49) ‘pure internal combustion engine vehicle’ or ‘ICEV’ means a vehicle where all of the propulsion energy converters are internal combustion engines, including hydrogen powered ones;

(50) ‘pure electric vehicle’ or ‘PEV’ means a vehicle equipped with a powertrain containing exclusively electric machines as propulsion energy converters and exclusively rechargeable electric energy storage systems as propulsion energy storage systems;

(51) ‘fuel cell’ means an energy converter transforming chemical energy (input) into electrical energy (output) or vice versa;

(52) ‘fuel cell vehicle’ or (‘FCV) means a vehicle equipped with a powertrain containing exclusively fuel cell(s) and electric machine(s) as propulsion energy converter(s);

(53) ‘fuel cell hybrid vehicle’ or (‘FCHV’) means a fuel cell vehicle equipped with a powertrain containing at least one fuel storage system and at least one rechargeable electric energy storage system as propulsion energy storage systems;

(54) ‘hybrid vehicle’ or ‘HV’ means a vehicle equipped with a powertrain containing at least two different categories of propulsion energy converters and at least two different categories of propulsion energy storage systems;

(55) ‘hybrid electric vehicle’ or ‘HEV’ means a hybrid vehicle where one of the propulsion energy converters is an electric machine;

(56) ‘off-vehicle charging hybrid electric vehicle’ or ‘OVC-HEVs’ means a hybrid electric vehicle that can be charged from an external source;

(57) ‘not off-vehicle charging hybrid electric vehicle’ or ‘NOVC-HEV’ means a vehicle with at least two different energy converters and two different energy storage systems that are used for the purpose of vehicle propulsion and that cannot be charged from an external source;

(58) ‘geofencing technologies’ means technologies that do not allow a hybrid vehicle to run with the use of the internal combustion engine (i.e. to enable zero-emission mode) when driven inside a specific geographic area;

(59) ‘zero-emission mode’ means a selectable mode, whereby a hybrid vehicle is driven without the use of the internal combustion engine;

(60) ‘net power’ means the power obtained on a test bench at the end of the crankshaft or its equivalent at the corresponding engine or motor speed with the auxiliaries, and which is determined under the reference atmospheric conditions;

(61) ‘wheel power’ means the power measured at the wheels of a vehicle and used for its propulsion;

(62) ‘power-to-mass-ratio’ means the ratio of rated power to the mass in running order;

(63) ‘rated power’ or ‘P_{rated}’ means the maximum net power of the engine or motor in kW;

(64) ‘mass in running order’ means the mass of the vehicle, with its fuel tank(s) filled to at least 90 per cent of their capacities, including the mass of the driver, fuel and liquids, fitted with the standard equipment in accordance with the manufacturer’s specifications and, when they are fitted, the mass of the bodywork, the cabin, the coupling and the spare wheels as well as the tools;

(65) ‘traction battery’ means a battery system that stores energy with the main purpose of propelling the vehicle;

(66) ‘electric range’ means the distance travelled in charge-depleting operation condition until the traction battery is depleted;

(67) ‘zero-emission range’ means the maximum distance a zero-emission vehicle can travel until the traction battery or fuel tank is depleted, which for PEVs corresponds to the electric range;

(68) ‘durability’ means the ability of a system or device, component or any part of the vehicle to maintain its required performance over a given time;

(69) ‘battery durability’ means the durability of a traction battery measured in terms of its State of Health;

(70) ‘state of health’ or ‘SOH’ means the measured or estimated state of a specific performance metric of a vehicle or traction battery at a specific point in its lifetime, expressed as a percentage of the performance that was determined when certified or new;

(71) ‘environmental vehicle passport’ or ‘EVP’ means a record on paper and digital form containing information on the environmental performance of a vehicle at the moment of registration, including the level of pollutant emission limits, CO_2 emissions, fuel consumption, energy consumption, electric range and engine power, and battery durability and other related values;

(72) ‘excess emissions driver warning system’ means a system designed, constructed and installed in a vehicle to provide information to the user about excess emissions and enforce repairs;

(73) ‘low-reagent driver warning system’ means a system designed, constructed and installed in a vehicle to warn the user of the low level of the consumable reagent, and enforce the use of the reagent;

(74) ‘idle emissions’ means exhaust emissions produced when the internal combustion engine operates but is not under load for the purposes of propelling the vehicle;

(75) ‘declaration of conformity’ means a declaration by the manufacturer that a specific type or group of vehicles, component or separate technical unit is in conformity with the requirements of this regulation

(76) ‘energy efficiency of a trailer’ means the performance of a trailer with regard to its influence on the CO_2 emissions, fuel and energy consumption, zero-emission range, electric range and engine power of a towing motor vehicle;

(77) "snow tyre" means a tyre whose tread pattern, tread compound or structure is primarily designed to achieve in snow conditions a performance better than that of a normal tyre with regard to its ability to initiate or maintain vehicle motion;

(78) "special use tyre" means a tyre intended for mixed use both on- and off-road or for other special duty. These tyres are primarily designed to initiate and maintain the vehicle in motion in off-road conditions.

Chapter II – Manufacturers’ obligations

Article 4

Obligations of the manufacturers concerning construction of vehicles

1. Manufacturers shall ensure that the new vehicles they manufacture, which are sold, registered or put into service in the Union, are type approved in accordance with this Regulation. Manufacturers shall ensure that the new components or separate technical units, including engines, traction batteries, brake systems and replacement pollution control systems requiring type-approval which they manufacture and which are sold or put into service in the Union are type approved in accordance with this Regulation

2. Manufacturers shall design, construct and assemble vehicles to comply with this Regulation, including complying with the emission limits set out in Annex I and respecting the values declared in the certificate of conformity and in the type-approval documentation for the lifetime of the vehicle as set out in table 1 of Annex IV. These vehicles shall be designated as “Euro 7” vehicles.

3. When verifying compliance with the exhaust emission limits, where the testing is performed in extended driving conditions, the emissions shall be divided by the extended driving divider set out in Annex III.

The emissions during regeneration of pollution control systems will be included as a weighted average based on the frequency and duration of the regeneration events.

4. Manufacturers shall design and construct components or separate technical units, including engines, traction batteries, brake systems and replacement pollution control systems to comply with this Regulation, including complying with the emission limits set out in Annex I.

5. Manufacturers shall not design, construct and assemble vehicles with defeat devices or defeat strategies.

6. Manufacturers shall design, construct and assemble vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3 with:

   (a) OBD systems capable of detecting malfunctioning systems which lead to emission exceedances in order to facilitate repairs;

   (b) OBM systems capable of detecting emissions above the emission limits due to malfunctions, increased degradation or other situations that increase emissions;

   (c) OBFCM device to monitor their real-world fuel and energy consumption and other relevant parameters such as payload/mass which are needed to determine their real-world fuel and energy efficiency;

   (d) SOH monitors of the traction battery and emission systems;

   (e) excess emissions driver warning systems;

   (f) low-reagent driver warning systems;

   (g) devices communicating vehicle generated data used for compliance with this regulation and OBFCM data, for the purpose of periodic roadworthiness tests and technical roadside inspection over the air, and for the purposes of communicating with recharging infrastructure and stationary power systems capable of supporting smart and bidirectional charging functionalities.

7. Manufacturers shall design, construct and assemble vehicles of categories M_1, M_2, M_3, N_1, N_2 and N_3 in such a way to minimise vulnerabilities, arising in all phases of their life-cycle, that may lead to tampering with the following:

   (a) fuel and reagent injection system,

   (b) engine and engine control units

   (c) traction batteries,

   (d) odometer and

   (e) pollution control systems.

8. The manufacturer shall prevent the possibility of exploiting vulnerabilities referred to in paragraph 7. When such a vulnerability is found, the manufacturer shall remove the vulnerability, by software update or any other appropriate means.

9. The manufacturers shall ensure the secure transmission of data related to emissions and battery durability by taking cybersecurity measures in accordance with UN Regulation 155[54].

[54] UN Regulation No 155 – Uniform provisions concerning the approval of vehicles with regards to cybersecurity and cybersecurity management system (OJ L 82, 9.3.2021, p. 30).

10. The Commission shall adopt, by means of implementing acts, detailed rules on the procedures, tests and methodologies to verify compliance with the requirements laid down in paragraphs 1 to 9. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 5

Options of the manufacturers concerning the construction and designation of vehicles

1. Manufacturers may designate the vehicles they manufacture as "Euro 7+ vehicle" where those vehicles comply with the following:

   (a) for ICEV and NOVC-HEV by declaring compliance with at least 20 % lower emission limits than those set out in Annex I for gaseous pollutants and one order of magnitude lower emission limits for particle number emissions;

   (b) for OVC-HEV by declaring compliance with at least 20 % lower emission limits than those set out in Annex I for gaseous pollutants, one order of magnitude lower emission limits for particle number emissions and battery durability that is at least 10 percentage points higher than the requirements set out in Annex II;

   (c) for PEV by declaring battery durability that is at least 10 percentage points higher than the requirements set out in Annex II.

2. Compliance of these vehicles with the requirements under paragraph 1 shall be checked against the declared values.

3. Manufacturers may designate vehicles as "Euro 7A vehicle" where those vehicles are equipped with adaptive control functions. The use of adaptive control functions shall be demonstrated to the type-approval authorities during type-approval and verified during the lifetime of the vehicle as set out in table 1, Annex IV.

4. Manufacturers may designate vehicles as "Euro 7G vehicle" where those vehicles are equipped with internal combustion engines with geofencing technologies. The manufacturer shall install a driver warning system on those vehicles to inform the user when the traction batteries are nearly empty and to stop the vehicle if not charged within 5 km from the first warning while on zero-emission mode. The application of such geofencing technologies may be verified during the lifetime of the vehicle.

5. Manufacturers may construct vehicles combining two or more of the characteristics referred to in paragraphs 1, 2 or 3 and designate them using a combination of symbols and letters such as "Euro 7+A", "Euro 7+G", "Euro 7+AG" or "Euro 7AG" vehicles.

6. At the manufacturer's request, for N_2 vehicles between 3.5 and 4.0 tonnes maximum mass originating from an N_1 vehicle type, the type-approval authority may grant an emission type-approval for N_1 vehicle type. Such vehicles shall be designated as "Euro 7ext vehicle".

7. The Commission shall adopt, by means of implementing acts, detailed rules on the procedures, tests and methodologies to verify compliance with the requirements laid down in paragraphs 1 to 6. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 6

Durability requirements for vehicles, systems, components and separate technical units

1. Manufacturers shall ensure that the vehicles they manufacture, which are sold, registered or put into service in the Union, comply with the emission limits set out in Annex I when driven under the normal and extended driving conditions as set out in Annex III, for the lifetime of the vehicle as set out in table 1 of Annex IV, and comply with the minimum performance requirements on battery durability as set out in Annex II.

2. Manufacturers shall ensure that these vehicles comply with the values regarding CO_2 emissions, fuel and energy consumption and energy efficiency declared under the provisions of this Regulation for the lifetime of the vehicle as set out in Annex IV, Table 1.

3. Manufacturers shall ensure that OBFCM, OBD and OBM devices and anti-tampering measures installed in these vehicles comply with the provisions of this Regulation as long as the vehicle is in use.

4. The requirements referred to in points 1 to 3 shall apply to vehicles for all types of fuels or energy sources by which they are powered. The same requirements shall also apply to all separate technical units and components intended for such vehicles.

5. In order to verify compliance with the requirements referred to in the first paragraph during the additional lifetime of a vehicle, the gaseous pollutant emission limits set out in Annex I shall be adjusted by using the durability multipliers, set out in table 2 of Annex IV.

6. The OBM systems installed by the manufacturer in these vehicles shall be capable of all of the following:

   (a) registering the magnitude and duration of all emission exceedances;

   (b) communicating the data of the emission behaviour of the vehicle, including pollutant sensor and exhaust flow data, via the OBD port and over the air, including for the purpose of roadworthiness tests and technical roadside inspections[55], [56];

   (c) triggering repair of the vehicle when the driver warning system notifies significantly excess emissions.

7. The OBFCM devices installed by the manufacturer in these vehicles shall be capable of communicating the vehicle data they record via the OBD port and over the air.

8. For vehicles, systems, components and separate technical units presenting a serious risk or non-compliance with the requirements laid down in this regulation, manufacturers shall immediately take the necessary corrective measures, including repairs or modifications of those vehicles, systems, components and separate technical units as appropriate, to ensure compliance with this regulation. Manufacturers or any other economic operator shall withdraw it from the market or

[55] Directive 2014/47/ EU of the European Parliament and of the Council of 3 April 2014 on the technical roadside inspection of the roadworthiness of commercial vehicles circulating in the Union and repealing Directive 2000/30/EC (OJ L 127, 29.4.2014, p. 134).

[56] Directive 2014/45/EU of the European Parliament and of the Council of 3 April 2014 on periodic roadworthiness tests for motor vehicles and their trailers and repealing Directive 2009/40/EC (OJ L 127, 29.4.2014, p. 129)

recall it, as appropriate. The manufacturer shall immediately inform the type approval authority that granted the type-approval of the non-conformity with appropriate details.

9. The Commission shall adopt, by means of implementing acts, detailed rules on requirements, tests, methods and corrective measures related to the obligations referred to in paragraphs 1 to 8. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 7

Obligations of the manufacturers concerning emission type-approval

1. In order to demonstrate compliance with the emission type-approval rules during emission type-approval, the manufacturer shall perform the tests specified in tables 1, 3, 5 7 and 9 of Annex V. For the purpose of verifying the conformity of production with the requirements of this Regulation vehicles, components and separate technical units shall be selected at the premises of the manufacturer by the type approval authority or the manufacturer. In-service conformity shall be checked for the periods prescribed in table 1 of Annex IV.

2. The manufacturer shall provide the type-approval authority with a signed declaration of conformity as regards the RDE, CO_2 ambient temperature correction, OBD, OBM, emission and battery durability, continuous or periodic regeneration, anti-tampering and crankcase requirements as specified in Annex V. The manufacturer shall provide to the type-approval authority a signed declaration of conformity on the use of adaptive controls and geofencing options when the manufacturer selects these options.

3. The national authorities may test the vehicle type to verify its conformity during conformity of production, in-service conformity or market surveillance as specified in Annex V.

4. Manufacturers shall issue the environmental vehicle passport (EVP) for each vehicle and deliver that passport to the purchaser of the vehicle together with the vehicle, extracting the relevant data from sources such as the certificate of conformity and the type-approval documentation. The manufacturer shall ensure that EVP data are available for display in the vehicle electronic systems and can be transmitted from on- to off- board.

5. The Commission shall adopt implementing acts laying down the testing and compliance verifications as well as procedures, related to emission type-approval, conformity of production, in-service conformity, declaration of conformity and EVP under paragraphs 1to 4. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 8

Special rules for small volume manufacturers

1. As regards pollutant emissions, small volume manufacturers may substitute tests set out in tables 1, 3, 5, 7 and 9 of Annex V with declarations of conformity. The compliance of vehicles constructed and put into the market by small volume manufacturers may be tested for in service conformity and market surveillance in accordance with tables 2, 4, 6, 8 and 10 of Annex V. Conformity of production tests

set out in Annex V shall not be required. Article 4(4) point (b) shall not apply to small volume manufacturers.

2. Ultra-small volume manufacturers shall comply with the emission limits set out in Annex I in laboratory tests based on random real-driving cycles for in-service conformity and market surveillance purposes.

Article 9

Special rules for multistage vehicles

1. In multistage type-approvals, manufacturers of the second or subsequent stages shall be responsible for the emission type-approval where they modify any part of the vehicle that, according to the data provided by the manufacturers of the previous stage, might affect emissions or battery durability.

2. The Commission shall adopt implementing acts laying down the administrative requirements and data to be provided by manufacturers of the previous stage in accordance with paragraph 1 and procedures for the determination of CO_2 emissions of such vehicles. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Chapter III – Obligations of Member States for emission type-approval and market surveillance

Article 10

Emission type-approval, conformity of production, in-service conformity and market surveillance

1. National approval authorities shall put in place measures to grant emission type-approvals to vehicle types, components and separate technical units and to perform tests, checks and inspections for verifying whether the manufacturers comply with the requirements for conformity of production and in-service conformity in accordance with Annex V.

2. National market surveillance authorities shall perform market surveillance checks in accordance with Article 8 of Regulation (EU) 2018/858 and tables 2, 4, 6, 8 and 10 of Annex V.

3. With effect from … [*OP please insert the date = the date of entry into force of this Regulation*], where a manufacturer so requests, the national approval authorities shall not refuse to grant EU emission type-approval or national emission type-approval for a new type of vehicle or engine, or prohibit the registration, sale or entry into service of a new vehicle complying with this regulation.

4. With effect from 1 July 2025, national authorities shall, in the case of new M_1, N_1 vehicles which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and energy consumption or battery durability, prohibit the registration, sale or entry into service of such vehicles.

5. With effect from 1 July 2027, national authorities shall, in the case of new M_2, M_3, N_2, N_3 vehicles and new O_3, O_4 trailers, which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and

energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

6. With effect from 1 July 2030, national authorities shall, in the case of new M_1, N_1 vehicles constructed by small volume manufacturers which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

7. With effect from 1 July 2031, national authorities shall, in the case of new M_2, M_3, N_2, N_3 vehicles constructed by small volume manufacturers, which do not comply with this Regulation consider certificates of conformity to be no longer valid for the purposes of registration and shall, on grounds relating to CO_2 and pollutant emissions, fuel and energy consumption, energy efficiency or battery durability, prohibit the registration, sale or entry into service of such vehicles.

8. The Commission shall adopt implementing acts laying down the administrative and technical elements required for performing tests, checks and inspections for the purposes of verifying compliance with paragraph 1, as well as the technical elements required for market surveillance checks under paragraph 2. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 11

Specific obligations of Member States concerning the emission type-approval of systems, components and separate technical units

1. With effect from 1 July 2025, the sale or installation of a system, component or separate technical unit intended to be fitted on an M_1, N_1 vehicle approved under this Regulation, shall be prohibited if the system, component and separate technical unit is not of type approved in compliance with this Regulation.

2. With effect from 1 July 2027, the sale or installation of a system, component or separate technical unit intended to be fitted on an M_2, M_3, N_2, N_3 vehicle approved under this Regulation, shall be prohibited if the system, component and separate technical unit is not type approved in compliance with this Regulation.

3. National approval authorities may continue to grant extensions, to EU emission type-approvals of replacement pollution control systems granted before this regulation applies under the terms which applied at the time of the initial emission type-approval. National authorities shall prohibit the sale or installation on a vehicle of such replacement pollution control systems unless they are type approved.

Article 12

Correct operation of systems using a consumable reagent and pollution control systems

1. Economic operators and independent operators shall not tamper with the vehicle and its systems.

2. National authorities shall, during in-service conformity or market surveillance checks, verify whether manufacturers of vehicles have correctly installed excess

emissions driver warning systems, low-reagent driver warning systems and whether vehicles can be tampered.

Chapter IV

Role of the Commission and third parties for in-service conformity and market surveillance

Article 13

Application of test requirements for Commission and third parties

1. The Commission or third parties, in accordance with Article 9 and 13(10) of Regulation (EU) 2018/858, may perform in-service conformity and market surveillance checks set out in Tables 2, 4, 6, 8, and 10 of Annex V, to verify compliance of vehicles, components and separate technical units with this Regulation.

2. Manufacturers shall make available the data required to perform such checks to the Commission and third parties in accordance with Articles 9(5) and 13(10) of Regulation (EU) 2018/858.

Chapter V

Tests and declarations

Article 14

Procedures and tests

1. Procedures for the emission type-approval shall include tests and checks as well as the application of all administrative procedures and documentation requirements as specified in Annex V. For the requirements specified in Annex V, where applicable the manufacturer shall provide a declaration of conformity to the type-approval authority.

2. Tests to prove compliance with the requirements of Article 4 shall be applied by manufacturers and national authorities as specified in Annex V. Tests to prove compliance with the requirements of Article 4 may be applied by the Commission and third parties also as specified in Annex V.

3. The Commission shall adopt implementing acts for all the phases of emission type-approval, including conformity of production, in-service conformity and market surveillance, addressing procedures and tests for emission type-approval, testing methodologies, administrative provisions, amending and extending emission type-approvals, data access, documentation requirements and templates for all of the following:

   (a) M_1, N_1 vehicle types;

   (b) M_2, M_3, N_2, N_3 vehicle types;

   (c) engines used in M_2, M_3, N_2, N_3 vehicle types;

   (d) OBM/OBD systems;

(e) anti-tampering, security and cybersecurity systems;

(f) replacement pollution control systems types and their parts;

(g) brake system types and their replacement parts;

(h) tyre types in respect to tyre abrasion;

(i) other component types and their replacement parts;

(j) CO_2, fuel and energy consumption, electric range and engine power determination for M_1, N_1 vehicles, provisions for OBFCM;

(k) CO_2, fuel and energy consumption, zero-emission range, electric range and engine power determination for M_2, M_3, N_2, N_3 vehicles, energy efficiency of O_3, O_4 trailers, provisions for OBFCM.

4. The Commission shall be empowered to adopt implementing acts for all phases of the emission type-approval, including in-service conformity, conformity of production and market surveillance, to lay down the following:

(a) the methods to measure exhaust emissions in the lab and on the road, including random and worst-case RDE test cycles, the use of portable emissions measurement systems for verifying real driving emissions, and idle emissions;

(b) the methods to determine the CO_2 emissions, fuel and energy consumption, zero-emission range, electric range and engine power of a motor vehicle;

(c) the methods, requirements and technical specifications for gear shift indicators;

(d) the methods to determine the energy efficiency of O_3, O_4 trailers;

(e) the methods to measure crankcase emissions;

(f) the methods to measure evaporative emissions;

(g) the methods to measure brake particle emissions, including methods for HDV, real driving brake particle emissions and regenerative braking;

(h) the methods to measure tyre abrasion in order to monitor tyre abrasion rates;

(i) the methods to evaluate compliance with minimum performance requirements of battery durability;

(j) OBFCM device, OBD and OBM systems, including compliance thresholds, performance requirements and tests, methods to ensure performance of sensors and over the air communication of data recorded by these devices and systems;

(k) characteristics and performance of driver warning systems and inducement methods and method to assess their correct operation;

(l) the methods to assess the correct operation, effectiveness, regeneration and durability of original and replacement pollution control systems;

(m) methods to ensure and assess security measures referred to in Article 4(5), including the methodology for the vulnerability analysis and tampering protection;

(n) the criteria for emission type-approvals and implementation of special rules for small and ultra-small volume manufacturers set out in Article 8;

(o) the methods to assess the correct functioning of vehicle types approved under the designations in Article 5

(p) checks for compliance with the provisions of Article 9 (1) and test procedures for multistage vehicles;

(q) performance requirements for test equipment;

(r) specifications of reference fuels for testing;

(s) methods for establishing the absence of defeat devices and defeat strategies;

(t) methods to measure tyre abrasion;

(u) format and data and over the air communication methods for the EVP;

(v) administrative requirements and documentation for emission type-approval;

(w) reporting obligations where appropriate.

Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 17(2).

Article 15

Adaptation to technical progress

1. The Commission shall be empowered to adopt delegated acts in accordance with Article 16 in order to take into account technical progress to amend the following:

   (a) Annex III, as regards the test conditions for M_2, M_3, N_2, N_3 vehicles, based on data collected when testing Euro 7 vehicles;

   (b) Annex III, as regards the test conditions, based on data collected when testing Euro 7 brakes or tyres;

   (c) Annex V, as regards the application of test requirements and declarations, based on technical progress;

   (d) Article 5 by introducing options and designations based on innovative technologies for manufacturers.

2. The Commission shall be empowered to adopt delegated acts to supplement this Regulation in accordance with Article 16 in order to take into account technical progress by:

   (a) setting out brake particle emission limits in Annex I referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29);

   (b) setting out abrasion limits for tyre types in Annex I referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29);

   (c) setting out the minimum performance requirements of batteries laid down in Annex II, referring to the work performed in the UN World Forum for Harmonisation of Vehicle Regulations (WP29);

   (d) setting out durability multipliers in Annex IV based on data collected when testing Euro 7 M_2, M_3, N_2, N_3 vehicles and a report on the durability of heavy duty vehicles submitted to the European Parliament and Council;

   (e) setting out definitions and special rules for small volume manufacturers for vehicle categories M_2, M_3, N_2, N_3 under Article 3 and Article 8 of this Regulation.

Chapter VI- General Provisions

Article 16
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 in Article 15 shall be conferred on the Commission for a period of five years from... *[OP please insert the date = the date of entry into force of this Regulation]*. The Commission shall draw up a report in respect of the delegation of power not later than nine months before the end of the five-year period. The delegation of power shall be tacitly extended for periods of an identical duration, unless the European Parliament or the Council opposes such extension not later than three months before the end of each period.

3. The delegation of power referred to in Article 15 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 acts 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 to the Council.

6. A delegated act adopted pursuant to Article 15 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 by two months at the initiative of the European Parliament or of the Council.

Article 17
Committee Procedure

1. The Commission shall be assisted by the Technical Committee –Motor Vehicles. 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.

Article 18
Reporting

1. By 1 September 2030, Member States shall inform the Commission of the application of this Regulation.

2. By 1 September 2031, on the basis of the information supplied in accordance with paragraph 1, the Commission shall submit to the European Parliament and to the Council an evaluation report on the application of this Regulation.

Chapter VI- Final Provisions

Article 19

Repeal of Regulation (EC) 715/2007 and Regulation (EC) 595/2009

Regulation (EC) 715/2007 is repealed with effect from 1 July 2025.

Regulation (EC) 595/2009 is repealed with effect from 1 July 2027.

References to Regulations (EC) 715/2007 and 595/2009 shall be construed as references to this Regulation and shall be read in accordance with the correlation table set out in Annex VI to this Regulation.

Article 20

Entry into force and application

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

It shall apply from 1 July 2025 for M_1, N_1 vehicles and components and separate technical units for those vehicles and from 1 July 2027 for M_2, M_3, N_2, N_3 vehicles and components and separate technical units for those vehicles and O_3, O_4 trailers.

It shall apply from 1 July 2030 for M_1, N_1 vehicles constructed by small volume manufacturers.

Notwithstanding paragraph 2, Article 11(3) shall apply from the entry into force of this regulation.

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

Done at Brussels,

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

LEGISLATIVE FINANCIAL STATEMENT

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

1.1. Title of the proposal/initiative

1.2. Policy area(s) concerned

1.3. The proposal/initiative relates to:

1.4. Objective(s)

1.4.1. General objective(s)

1.4.2. Specific objective(s)

1.4.3. Expected result(s) and impact

1.4.4. Indicators of performance

1.5. Grounds for the proposal/initiative

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

1.5.2. Added value of Union involvement.

1.5.3. Lessons learned from similar experiences in the past

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

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

1.6. Duration and financial impact of the proposal/initiative

1.7. Management mode(s) planned

2. MANAGEMENT MEASURES

2.1. Monitoring and reporting rules

2.2. Management and control system(s)

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

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

2.2.3. Estimation and justification of the cost-effectiveness of the controls and assessment of the expected levels of risk of error

2.3. Measures to prevent fraud and irregularities

3. ESTIMATED FINANCIAL IMPACT OF THE PROPOSAL/INITIATIVE

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

3.2. Estimated financial impact of the proposal on appropriations

3.2.1. Summary of estimated impact on operational appropriations

3.2.2. Estimated output funded with operational appropriations

3.2.3. Summary of estimated impact on administrative appropriations

3.2.4. Compatibility with the current multiannual financial framework

3.2.5. Third-party contributions

3.3. Estimated impact on revenue

LEGISLATIVE FINANCIAL STATEMENT

1. FRAMEWORK OF THE PROPOSAL/INITIATIVE

1.1. Title of the proposal/initiative

Proposal for a Regulation of the European Parliament and of the Council on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulation (EC) No 715/2007 and Regulation (EC) No 595/2009

1.2. Policy area(s) concerned

Policy area: Internal market for goods

Climate Action: Natural resources and Environment

1.3. The proposal/initiative relates to:

☒ **a new action**

☐ **a new action following a pilot project/preparatory action**[57]

☐ **the extension of an existing action**

☐ **a merger or redirection of one or more actions towards another/a new action**

1.4. Objective(s)

1.4.1. General objective(s)

The proposal aims at contributing to a general objective, which is twofold: (1) to ensure the proper functioning of the single market by setting more adequate, cost-effective and future-proof rules for vehicle emissions; and (2) to ensure a high level of environmental and health protection in the EU by further reducing air pollutant emissions from road transport towards zero-pollution, as required by the Zero Pollution Action Plan, as rapidly as possible.

1.4.2. Specific objective(s)

Specific objective No 1: to reduce complexity of the current Euro emission standards to curb administrative costs and facilitate successful implementation;

Specific objective No 2: to provide up-to-date limits for all relevant air pollutants;

Specific objective No 3: to improve the control of real-world emissions.

1.4.3. Expected result(s) and impact

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

The proposal is placed under the framework Regulation (EU) 2018/858 of the European Parliament and of the Council regarding type-approval and market surveillance system for motor vehicles, trailers, and for systems, components and separate technical units intended for such vehicles aims at harmonising technical requirements with regard to emissions. It is key for the proper functioning of the Single Market from this perspective.

[57] As referred to in Article 58(2)(a) or (b) of the Financial Regulation.

The proposal will ensure that pollutant emission performance from light duty and heavy vehicles are improved and provide benefits to consumers in term of air quality, thus contributing to reducing health and environmental damages. It will also strengthen the technological positioning and competitiveness of the EU automotive value chain. Additional co-benefits are a strengthened consumer trust in good environmental performance of their vehicles. Positive impact on up- and re-skilling of the workforce can also be expected, as future-proof clean technologies develop and are increasingly used.

1.4.4. Indicators of performance

Specify the indicators for monitoring progress and achievements.

The following indicators have been identified:

1. Number of emission type-approvals under Euro 7 per vehicle type;

2. Costs during implementation phase and administrative costs per emission type-approval

3. Proof of improved control of emissions under all conditions of use for all regulated pollutants;

4. Enforcement costs, including costs for infringements and penalties in case of non compliance and monitoring costs;

5. Evolution of emissions over the lifetime of vehicles as evidenced by appropriate testing campaigns and continuous emission monitoring;

6. Annual number of registered vehicles and share of powertrain technologies on EU roads as reported by the Member States to the European Alternative Fuels Observatory;

7. Annual development of impacts of air pollution on health (i.e. premature deaths related to exposure of certain pollutants) as included in the annual report on air quality in Europe;

8. Annual share of road transport to the pollutant emissions of certain pollutants as reported by the Member States to the EEA under the NECD;

9. Annual number of notifications received from Member States for barriers of internal EU trade of cars, vans, lorries/buses caused by technical prescriptions imposed by national, regional or local authorities (i.e. bans of any kind) under the notification procedure of Directive 2015/153.

1.5. Grounds for the proposal/initiative

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

All new vehicles, engines or replacement parts of the M1 and N1 categories to be put in the EU market should be type approved according to this Regulation starting from 1 July 2025, except for vehicles of the M2, M3, N2, N3 categories, for which the implementation date will be 1 July 2027. Added value of Union involvement (it may result from different factors, e.g. coordination gains, legal certainty, greater effectiveness or complementarities). For the purposes of this point 'added value of Union involvement' is the value resulting from Union intervention which is additional to the value that would have been otherwise created by Member States alone.

Reasons for action at European level (ex-ante)

There is a need to address pollutant emission performance and air quality in order to ensure the proper functioning of the Single Market.

Indeed, air quality and pollutant emission performance constitute a trans-boundary problem, which cannot be solved by national or local action alone. Coordination of emission reduction and improvement of emission performances must be taken at European level and EU action is justified on grounds of subsidiarity. Although initiatives at the national, regional and local level can create synergies, alone they will not be sufficient. Lack of coordinated EU action via the strengthening of pollutant emission standards would translate into a risk of market fragmentation due to the diversity of national schemes, differing ambition levels and design parameters.

Expected generated Union added value (ex-post)

On their own, individual Member States would also represent too small a market to achieve the same level of results, therefore, an EU wide approach is needed to drive industry level changes and to create economies of scale.

1.5.2. Lessons learned from similar experiences in the past

The proposal builds on existing legislation which has ensured continuous reductions in the pollutant emission and improvement of emission performances of vehicles and engines over the past decades in the Union.

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

This proposal is compatible with the objectives of the Next Generation EU and the Multiannual Financial Framework for 2021-2027 which will help achieving the twin green and digital transitions that Europe is aiming for. The combination of these frameworks will address the economic crisis and accelerate the shift to a clean and sustainable economy, linking more stringent environmental and air quality requirements and economic growth.

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

The human resources required will be met by the staff from the DGs who are assigned to the action (i.e. DG GROW with support of DG CLIMA) and/or have been redeployed within the DGs. If additional allocation is necessary it may be granted to the relevant DGs under the annual allocation procedure and in the light of budgetary constraints.

1.6. Duration and financial impact of the proposal/initiative

☐ **limited duration**

– ☐ in effect from [DD/MM]YYYY to [DD/MM]YYYY

– ☐ Financial impact from YYYY to YYYY for commitment appropriations and from YYYY to YYYY for payment appropriations.

☒ **unlimited duration**

– Implementation with a start-up period from 2025,

– followed by full-scale operation.

1.7. Management mode(s) planned[58]

☒ **Direct management** by the Commission

– ☒ by its departments, including by its staff in the Union delegations;

– ☐ by the executive agencies

☐ **Shared management** with the Member States

☐ **Indirect management** by entrusting budget implementation tasks to:

– ☐ third countries or the bodies they have designated;

– ☐ international organisations and their agencies (to be specified);

– ☐ the EIB and the European Investment Fund;

– ☐ bodies referred to in Articles 70 and 71 of the Financial Regulation;

– ☐ public law bodies;

– ☐ bodies governed by private law with a public service mission to the extent that they are provided with 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 are provided with 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

The Commission intends to ensure the implementation of the measures concerned via centralised direct management through its own services, in particular via the JRC for the technical and scientific support necessary for the development of implementing regulations and the performing of market surveillance, as already foreseen in Regulation (EC) 2018/858. The part of market surveillance is already regulated through appropriate administrative arrangements foreseen and accounted for in the Regulation (EC) 2018/858, while for the work on the implementing regulations a separate administrative arrangement is foreseen.

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

2. MANAGEMENT MEASURES

2.1. Monitoring and reporting rules

Specify frequency and conditions.

In order to monitor the effectiveness of the proposed emission reduction requirements, extensive data collection is required from different possible sources, including from Member States, automotive manufacturers and national approval authorities.

The Technical Committee Motor Vehicles (TCMV) and the Forum set up under Regulation (EU) 2018/858 will be the platforms to regularly discuss issues related to the implementation of the Euro 7.

Member states will have to report to the Commission on the penalties they have implemented according to Regulation (EU) 2018/858.

By 2030 Member States shall inform the Commission of the application of the type-approval procedures laid down in this Regulation. Based on this information, the Commission shall report to the European Parliament and to the Council about the implementation of the new Regulation.

2.2. Management and control system(s)

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

The proposal is implemented under the Single Market and Climate Action programmes.

Management mode, funding implementation mechanisms, payment modalities and control strategy are fall under these programmes.

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

This proposal is implemented under the Single Market and Climate Action programmes. Controls/risks and mitigation measures are covered under the existing internal control framework.

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

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

2.3. Measures to prevent fraud and irregularities

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

In addition to the application of the Financial Regulation to prevent fraud and irregularities, the strengthened emission standard requirements provided for in this proposal will be accompanied by enhanced monitoring or emissions throughout the lifetime of a vehicle.

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 Heading 1	Diff./Non-diff.[59]	from EFTA countries [60]	from candidate countries[61]	from third countries	within the meaning of Article 21(2)(b) of the Financial Regulation
1	[03 02 01 01] Single Market Programme (SMP) – Operation and development of the internal market of goods and services	Diff.	YES	NO	NO	NO
3	[09 02 03] Natural Resource and the Environment	Diff.	YES	NO	NO	NO

[59] Diff. = Differentiated appropriations / Non-diff. = Non-differentiated appropriations.
[60] EFTA: European Free Trade Association.
[61] Candidate countries and, where applicable, potential candidates from the Western Balkans.

3.2. Estimated financial impact of the proposal on appropriations

3.2.1. Summary of estimated impact on operational appropriations

– ☐ The proposal/initiative does not require the use of operational appropriations

– ☒ The proposal/initiative requires the use of operational appropriations, as explained below:

EUR million (to three decimal places)

Heading of multiannual financial framework	Number	1.

DG: GROW			Year **2022**	Year **2023**	Year **2024**	Year **2025**	**TOTAL of years 2022-2025**	Following Years
○ Operational appropriations								
Budget line 03.020101[62]	Commitments	(1a)	1.230	1.030			**2.260**	**0.300**
	Payments	(2a)	0.630	1.030	0.600		**2.260**	
Budget line	Commitments	(1b)						
	Payments	(2b)						
Appropriations of an administrative nature financed from the envelope of specific programmes[63]								
Budget line		(3)						
TOTAL appropriations for DG GROW	Commitments	=1a+1b +3	1.230	1.030			**2.260**	**0.300**
	Payments	=2a+2b +3	0.630	1.030	0.600		**2.260**	

62 According to the official budget nomenclature.

63 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)	1.230	1.030			**2.260**	**0.300**
	Payments	(5)	0.630	1.030	0.600		**2.260**	
○ TOTAL appropriations of an administrative nature financed from the envelope for specific programmes		(6)						
TOTAL appropriations under HEADING 1 of the multiannual financial framework	Commitments	=4+ 6	1.230	1.030			**2.260**	**0.300**
	Payments	=5+ 6	0.630	1.030	0.600		**2.260**	

○ TOTAL operational appropriations (all operational headings)	Commitments	(4)						
	Payments	(5)						
TOTAL appropriations of an administrative nature financed from the envelope for specific programmes (all operational headings)		(6)						
TOTAL appropriations under HEADINGS 1 to 6 of the multiannual financial framework (Reference amount)	Commitments	=4+ 6	1.230	1.030			**2.260**	**0.200**
	Payments	=5+ 6	0.630	1.030	0.600		**2.260**	

Heading of multiannual financial framework	7	'Administrative expenditure'

This section should be filled in using the 'budget data of an administrative nature' to be firstly introduced in the Annex to the Legislative Financial Statement (Annex V to the internal rules), which is uploaded to DECIDE for interservice consultation purposes.

EUR million (to three decimal places)

		Year **2022**	Year **2023**	Year **2024**	Year **2025**	**TOTAL**
DG: GROW						
○ Human resources		1.498	1.498	1.256	1.256	**5.508**
○ Other administrative expenditure		0.090	0.090	0.090	0.040	**0.310**
TOTAL DG GROW	1.588	1.588	1.346	1.296	**5.818**	**1.970**

TOTAL appropriations under HEADING 7 of the multiannual financial framework	(Total commitments = Total payments)	1.588	1.588	1.346	1.296	**5.818**

EUR million (to three decimal places)

		Year **2022**	Year **2023**	Year **2024**	Year **2025**	**TOTAL**
TOTAL appropriations under HEADINGS 1 to 7 of the multiannual financial framework	Commitments	2.818	2.618	1.346	1.296	**8.078**
	Payments	2.218	2.618	1.946	1.296	**8.078**

3.2.2. Estimated output funded with operational appropriations

Commitment appropriations in EUR million (to three decimal places)

Indicate objectives and outputs ⇩			Year **2022**		Year **2023**		Year **2024**		Year **2025**		Enter as many years as necessary to show the duration of the impact (see point 1.6)						**TOTAL**	
	OUTPUTS																	
	Type[64]	Average cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	No	Cost	Total No	Total cost
SPECIFIC OBJECTIVE No 1…																		
- Output																		
Subtotal for specific objective No 1																		
TOTALS																		

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

3.2.3. Summary of estimated impact on administrative appropriations

– ☐ The proposal/initiative does not require the use of appropriations of an administrative nature

– ☒ The proposal/initiative requires the use of appropriations of an administrative nature, as explained below:

– EUR million (to three decimal places)

	Year **2022**	Year **2023**	Year **2024**	Year **2025**	Enter as many years as necessary to show the duration of the impact (see point 1.6)			TOTAL
–								
HEADING 7 of the multiannual financial framework								
Human resources	1.734	1.969	1.727	1.727				7.157
Other administrative expenditure	0.090	0.090	0.090	0.040				0.310
Subtotal HEADING 7 of the multiannual financial framework	1.824	2.059	1.817	1.767				**7.467**

Outside HEADING 7[65] of the multiannual financial framework								
Human resources								
Other expenditure of an administrative nature								
Subtotal outside HEADING 7 of the multiannual financial framework								

TOTAL	1.824	2.059	1.817	1.767				**7.467**

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

65 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.

DG, together if necessary with any additional allocation which may be granted to the managing DG under the annual allocation procedure and in the light of budgetary constraints.

3.2.3.1. Estimated requirements of human resources of DG GROW and DG CLIMA

– ☐ The proposal/initiative does not require the use of human resources.

– ☒ The proposal/initiative requires the use of human resources, as explained below:

	Year **2022**	Year **2023**	Year **2024**	Year **2025**	Following years		
O Establishment plan posts (officials and temporary staff)							
20 01 02 01 (Headquarters and Commission's Representation Offices)	11.5	13	11	11	6.5	6.5	6.5
20 01 02 03 (Delegations)							
01 01 01 01 (Indirect research)							
01 01 01 11 (Direct research)							
Other budget lines (specify)							
O External staff (in Full Time Equivalent unit: FTE)[66]							
20 02 01 (AC, END, INT from the 'global envelope')							
TOTAL	**11.5**	**13**	**11**	**11**	**6.5**	**6.5**	**6.5**

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	Negotiation of Regulation, development of delegated and implementing acts, organisation and supervision of market surveillance for emissions, review and update according to technical developments
External staff	Conducting analysis and providing support and technical input to the organisation and supervision of market surveillance for emissions, review and update according to technical developments

66 AC= Contract Staff; AL = Local Staff; END= Seconded National Expert; INT = agency staff; JPD= Junior Professionals in Delegations.

3.2.4. Compatibility with the current multiannual financial framework

The proposal/initiative:

– ☒ can be fully financed through redeployment within the relevant heading of the Multiannual Financial Framework (MFF).

The relevant funding has already been foreseen for year 2022 and will enter into the planned amount allocated also for year 2023. Internal redeployment of staff is needed from the relevant tasks in the Euro 6/VI regulations.

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

Explain what is required, specifying the headings and budget lines concerned, the corresponding amounts, and the instruments proposed to be used.

– ☐ requires a revision of the MFF.

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

– ☐ provides for the co-financing by third parties estimated below:

Appropriations in EUR million (to three decimal places)

	Year **2022**	Year **2023**	Year **2024**	Year **2025**	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 other revenue

– please indicate, if the revenue is assigned to expenditure lines ☐

EUR million (to three decimal places)

Budget revenue line:	Appropriations available for the current financial year	Impact of the proposal/initiative[67]						
		Year **2022**	Year **2023**	Year **2024**	Year **2025**	Enter as many years as necessary to show the duration of the impact (see point 1.6)		
Article …….								

[67] As regards traditional own resources (customs duties, sugar levies), the amounts indicated must be net amounts, i.e. gross amounts after deduction of 20 % for collection costs.

ANNEX
to the LEGISLATIVE FINANCIAL STATEMENT

Name of the proposal/initiative:

Regulation of the European Parliament and of the Council on type-approval of motor vehicles and engines with respect to emissions from motor vehicles (Euro 7) and repealing Regulation (EC) No 715/2007 and Regulation (EC) No. 595/2009

7. Cost of human resources considered necessary for DG GROW and DG CLIMA

☐ The proposal/initiative does not require the use of human resources

☒ The proposal/initiative requires the use of human resources, as explained below:

EUR million (to three decimal places)

HEADING 7 of the multiannual financial framework		2022		2023		2024		2025		2026		2027		2028		TOTAL	
		FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations
○ Establishment plan posts (officials and temporary staff)																	
20 01 02 01 - Headquarters and Representation offices	AD	10.5	1.649	12	1.884	11	1.727	11c	1.727	6.5	1.021	6.5	1.021	6.5	.1.021	64	10.048
	AST																
20 01 02 03 - Union Delegations	AD																
	AST																
○ External staff [68]																	
20 02 01 and 20 02 02 – External personnel – Headquarters and Representation offices	AC	1	0.085	1	0.085											2	0.170
	END																
	INT																
20 02 03 – External personnel - Union Delegations	AC																
	AL																

[68] AC = Contract Staff; AL = Local Staff; END = Seconded National Expert; INT= agency staff; JPD= Junior Professionals in Delegations.

	END																
	INT																
	JPD																
Other HR related budget lines (*specify*)																	
Subtotal HR – HEADING 7		11.5	1.734	13	1.969	11	1.727	11	1.727	6.5	1.021	6.5	1.021	6.5	.1.021	66	10.218

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.

Outside HEADING 7 of the multiannual financial framework		2022		2023		2024		2025		2026		2027		2028		TOTAL	
		FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations	FTE	Appropriations
○ Establishment plan posts (officials and temporary staff)																	
01 01 01 01 Indirect Research[69]	AD																
01 01 01 11 Direct Research Other (please specify)	AST																
○ External staff [70]																	
External staff - at	AC																

[69] Please choose the relevant budget line, or specify another if necessary; in case more budget lines are concerned, staff should be differentiated by each budget line concerned

[70] AC = Contract Staff; AL = Local Staff; END = Seconded National Expert; INT= agency staff; JPD= Junior Professionals in Delegations.

from operational appropriations (former 'BA' lines).	Headquarters	END																
		INT																
	- in Union delegations	AC																
		AL																
		END																
		INT																
		JPD																
01 01 01 02 Indirect Research		AC																
01 01 01 12 Direct research		END																
Other (please specify)[71]		INT																
Other budget lines HR related (*specify*)																		
Subtotal HR – Outside HEADING 7																		
Total HR (all MFF Headings)			11.5	1.734	13	1.969	11	1.727	11	1.727	6.5	1.021	6.5	1.021	6.5	.1.021	66	10.218

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.

[71] Please choose the relevant budget line, or specify another if necessary; in case more budget lines are concerned, staff should be differentiated by each budget line concerned

8. Cost of other administrative expenditure for DG GROW and DG CLIMA

☐ The proposal/initiative does not require the use of administrative appropriations
☒ The proposal/initiative requires the use of administrative appropriations, as explained below:

EUR million (to three decimal places)

HEADING 7 of the multiannual financial framework	2022	2023	2024	2025	2026	2027	2028	Total
At headquarters or within EU territory:								
20 02 06 01 - Mission and representation expenses	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.280
20 02 06 02 - Conference and meeting costs								
20 02 06 03 - Committees[72]	0.050	0.050	0.050					0.150
20 02 06 04 Studies and consultations								
20 04 – IT expenditure (corporate)[73]								
Other budget lines non-HR related (*specify where necessary*)								
In Union delegations								
20 02 07 01 - Missions, conferences and representation expenses								
20 02 07 02 - Further training of staff								

[72] Specify the type of committee and the group to which it belongs.
[73] The opinion of DG DIGIT – IT Investments Team is required (see the Guidelines on Financing of IT, C(2020)6126 final of 10.9.2020, page 7)

20 03 05 – Infrastructure and logistics								
Other budget lines non-HR related (*specify where necessary*)								
Subtotal Other - HEADING 7 of the multiannual financial framework	0.090	0.090	0.090	0.040	0.040	0.040	0.040	0.430

EUR million (to three decimal places)

Outside HEADING 7 of the multiannual financial framework	2022	2023	2024	2025	2026	2027	2028	Total
Expenditure on technical and administrative assistance (not including external staff) from operational appropriations (former 'BA' lines):								
- at Headquarters								
- in Union delegations								
Other management expenditure for research								
Policy IT expenditure on operational programmes[74]								
Corporate IT expenditure on operational programmes[75]								
Other budget lines non-HR related (*specify where necessary*)								

[74] The opinion of DG DIGIT – IT Investments Team is required (see the Guidelines on Financing of IT, C(2020)6126 final of 10.9.2020, page 7)

[75] This item includes local administrative systems and contributions to the co-financing of corporate IT systems (see the Guidelines on Financing of IT, C(2020)6126 final of 10.9.2020)

Sub-total Other – Outside HEADING 7 of the multiannual financial framework								
Total Other admin expenditure (all MFFHeadings)	0.090	0.090	0.090	0.040	0.040	0.040	0.040	0.430

9. Total administrative costs for DG GROW and DG CLIMA (all Headings MFF)

EUR million (to three decimal places)

Summary	2022	2023	2024	2025	2026	2027	2028	Total
Heading 7 - Human Resources	1.734	1.969	1.727	1.727	1.021	1.021	1.021	10.218
Heading 7 – Other administrative expenditure	0.090	0.090	0.090	0.040	0.040	0.040	0.040	0.430
Sub-total Heading 7	1.824	2.059	1.817	1.767	1.061	1.061	1.061	10.648
Outside Heading 7 – Human Resources								
Outside Heading 7 – Other administrative expenditure								
Sub-total Other Headings								
TOTAL HEADING 7 and Outside HEADING 7	1.824	2.059	1.817	1.767	1.061	1.061	1.061	10,648

The administrative appropriations required will be met by the appropriations which are already assigned to management of the action and/or which have been redeployed, 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 existing budgetary constraints.

10. Methods of calculation used to estimate costs

10.1. Human resources

This part sets out the method of calculation used to estimate the human resources considered necessary (workload assumptions, including specific jobs (Sysper 2 work profiles), staff categories and the corresponding average costs)

HEADING 7 of the multiannual financial framework
NB: The average costs for each category of staff at Headquarters are available on BudgWeb: https://myintracomm.ec.europa.eu/budgweb/EN/pre/legalbasis/Pages/pre-040-020_preparation.aspx
○ Officials and temporary staff 10.5 FTE in 2022 for the preparation of delegated and implementing acts, organisation and supervision of market surveillance for emissions, review, reporting and update 12 FTE in 2023 for the preparation of delegated and implementing acts, organisation and supervision of market surveillance for emissions, review, reporting and update 11 FTE in 2024-2025 for the follow-up of delegated and implementing acts, organisation and supervision of market surveillance for emissions, review, reporting and update 6.5 FTE in 2026-2028 for the follow-up of delegated and implementing acts, organisation and supervision of market surveillance for emissions, review, reporting and update
○ External staff 1 FTE in 2022-2023 for support to the preparation delegated and implementing acts, organisation and supervision of market surveillance for emissions, review, reporting and update

Outside HEADING 7 of the multiannual financial framework
○ Only posts financed from the research budget

O External staff

10.2. Other administrative expenditure

Give details of the method of calculation used for each budget line

and in particular the underlying assumptions (e.g. number of meetings per year, average costs, etc.)

HEADING 7 of the multiannual financial framework
Around 12 missions in Member States in 2022-2028 Around 3 meeting days per year over 2022-2024 (TCMV and Forum meetings)

Outside HEADING 7 of the multiannual financial framework

EUROPEAN
COMMISSION

Brussels, 10.11.2022
COM(2022) 586 final

ANNEXES 1 to 6

ANNEXES

to the

Proposal for a Regulation of the European Parliament and the Council

on type-approval of motor vehicles and engines and of systems, components and separate technical units intended for such vehicles, with respect to their emissions and battery durability (Euro 7) and repealing Regulations (EC) No 715/2007 and (EC) No 595/2009

{SEC(2022) 397 final} - {SWD(2022) 358 final} - {SWD(2022) 359 final} -
{SWD(2022) 360 final}

ANNEX I

EURO 7 EMISSION LIMITS

Table 1: Euro 7 exhaust emission limits for M_1, N_1 vehicles with internal combustion engine

Pollutant emissions	**M_1, N_1 vehicles**	**Only for N_1 vehicles with power to mass ratio[1] less than 35 kW/t**	**Emission budget for all trips less than 10 km for M_1, N_1 vehicles**	**Emission budget for all trips less than 10 km only for N_1 vehicles with power to mass ratio less than 35 kW/t**
	per km	***per km***	***per trip***	***per trip***
NO_x in mg	60	75	600	750
PM in mg	4.5	4.5	45	45
PN_{10} in #	6×10^{11}	6×10^{11}	6×10^{12}	6×10^{12}
CO in mg	500	630	5000	6300
THC in mg	100	130	1000	1300
NMHC in mg	68	90	680	900
NH_3 in mg	20	20	200	200

[1] Measured in accordance with paragraph 5.3.2. of UN/ECE Regulation No 85 in the case of ICEVs and PEVs, or, in all other cases, measured in accordance with one of the test procedures laid down in paragraph 6 of UN Global Technical Regulation 21

Table 2: Euro 7 exhaust emission limits for M_2, M_3, N_2 and N_3 vehicles with internal combustion engine and internal combustion engines used in those vehicles

Pollutant emissions	**Cold emissions[2]**	**Hot emissions[3]**	**Emission budget for all trips less than 3*WHTC long**	**Optional idle emission limits[4]**
	per kWh	***per kWh***	***per kWh***	***per hour***
NO_x in mg	350	90	150	5000
PM in mg	12	8	10	
PN_{10} in #	$5x10^{11}$	$2x10^{11}$	$3x10^{11}$	
CO in mg	3500	200	2700	
NMOG in mg	200	50	75	
NH_3 in mg	65	65	70	
CH_4 in mg	500	350	500	
N_2O in mg	160	100	140	

2 Cold emissions refers to the 100th percentile of moving windows (MW) of 1 WHTC for vehicles, or $WHTC_{cold}$ for engines

3 Hot emission refers to the 90th percentile of moving windows (MW) of 1 WHTC for vehicles or $WHTC_{hot}$ for engines

4 Applicable only if a system is not present that automatically shuts down the engine after 300 seconds of continuous idling operation (once the vehicle is stopped and brakes applied)

HCHO in mg	30	30		

Table 3: Euro 7 evaporative emission limits for petrol fuelled M_1, N_1 vehicles

Pollutant emissions	M_1, N_1 with maximum mass up to 2650 kg	N_1 with maximum mass equal or more than 2650 kg
Evaporative emissions (in hot soak + 2 day diurnal test)	0.50 g at worst day + hot soak	0.70 g at worst day + hot soak
Refuelling emissions	0.05 g/L of fuel	0.05 g/L of fuel

Table 4: Euro 7 brake particle emission limits in standard driving cycle applying until 31/12/2034

Emission limits in mg/km per vehicle	M_1, N_1 vehicles	M_2, M_3 vehicles	N_2, N_3 vehicles
Brake particle emissions (PM_{10})	7		
Brake particle emissions (PN)			

Table 5: Euro 7 brake particle emission limits in applying from 1/1/2035

Emission limits in mg/km per vehicle	M_1, N_1 vehicles	M_2, M_3 vehicles	N_2, N_3 vehicles
Brake particle emissions (PM_{10})	3		
Brake particle emissions (PN)			

Table 6: Euro 7 tyre abrasion rate limits

Tyre mass lost in g/1000 km	**C1 tyres**	**C2 tyres**	**C3 tyres**
Normal tyres			
Snow tyres			
Special use tyres			

ANNEX II

EURO 7 MINIMUM PERFORMANCE REQUIREMENTS FOR BATTERY DURABILITY

Table 1: Euro 7 Minimum performance requirements (MPR) for battery durability for M_1 vehicles

Battery energy based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV	80%	70%	
PEV	80%	70%	

Range based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV			
PEV			

Table 2: Euro 7 Minimum performance requirements (MPR) for battery durability for N_1 vehicles

Battery energy based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV	75%	65%	

PEV	75%	65%	

Range based MPR	Start of life to 5 years or 100 000 km whichever comes first	Vehicles more than 5 years or 100 000 km, and up to whichever comes first of 8 years or 160 000 km	Vehicles up to additional lifetime*
OVC-HEV			
PEV			

Table 3: Euro 7 Minimum performance requirements (MPR) for battery durability for M_2, M_3, N_2, N_3 vehicles

Battery Energy based MPR	Vehicles in main lifetime*	Vehicles in additional lifetime*
OVC-HEV		
PEV		

*As specified in Annex IV

ANNEX III

TEST CONDITIONS

Table 1: Conditions for testing compliance of M_1, N_1 vehicles with exhaust emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

Parameter	Normal driving conditions	Extended driving conditions*
Extended driving divider	-	1.6 (applies to measured emissions only during the time when one of the conditions set out in this column applies)
Ambient temperature	0°C to 35°C	-10°C to 0°C or 35°C to 45°C
Maximum altitude	700 m	More than 700 m and below 1 800 m
Maximum speed	Up to 145 km/h	Between 145 and 160 km/h
Towing/aerodynamic modifications	Not allowed	Allowed according to manufacturer specifications and up to the regulated speed.
Auxiliaries	Possible as per normal use	-
Maximum average wheel power during first 2 km after cold start	Lower than 20% of maximum wheel power	Higher than 20% of maximum wheel power
Trip composition	Any	-
Minimum mileage	10 000 km	Between 3 000 and 10 000 km

* The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority.

Table 2: Conditions for testing compliance of M_2, M_3, N_2 and N_3 vehicles with exhaust emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

Parameter	Normal driving conditions	Extended driving conditions*
Extended Driving Divider	-	2 (applies to measured emissions only during the time when one of the conditions set out in this column applies)
Ambient temperature	-7°C to 35°C	-10°C to -7°C or 35°C to 45°C
Maximum altitude	1 600 m	From 1 600 to 1 800 m
Towing/aerodynamic modifications	Not allowed	Allowed according to manufacturer specifications and up to the regulated speed
Vehicle Payload	Higher or equal than 10%	Less than 10%
Auxiliaries	Possible as per normal use	-
Internal Combustion Engine Loading at cold start	Any	-
Trip composition	As per usual use	-
Minimum mileage	5 000 km for <16t TPMLM 10 000 km for > 16t TPMLM	Between 3 000 km and 5 000 km for <16t TPMLM Between 3 000 km and 10 000 km for > 16t TPMLM

*The same emission strategy shall be used when a vehicle is run outside those conditions, unless there is a technical reason approved by the type approval authority.

Table 3: Conditions for testing compliance with evaporative emission limits with any market fuel and lubricant within the specifications issued by the manufacturer of the vehicle

	Testing conditions
Evaporative emission SHED[5] test	• Baking of entire vehicle or of individual components (optional) • Vehicle canister preconditioning and fuel refilling and vehicle precondition drive • Drive temperature and hot soak test 25 and 38°C (38 °C for type approval) • 48-h diurnal test
Refuelling emission test	**Vehicle preconditioning** • Fuel drain and fill to 40% • 6 h min soak at 20-30°C • preconditioning drive **Canister preconditioning** • Fuel drain and fill to 40% • 12-36 h soak • Load canister with hydrocarbon vapours until 2g breakthrough at 40 g/h 50% butane/N2 • Exhaust test: WLTP (recording emissions) • 0-1 h soak at 20-30°C • Canister purge drive at 20-30°C **Refuelling event** • Disconnect canister(s) • Fuel drain and fill to 10% • 6-24h soak at 27°C. • Reconnect canisters • Dispense fuel at 38 l/min until automatic shut-off. If < 85% of total tank capacity is dispensed, continue auto-refuelling until fuel dispensed is ≥ 85%. Authorities may use 15 l/min

[5] SHED: Sealed House for evaporative determination

	• Dispense fuel temperature:19°C

Table 4: Conditions for testing compliance with brake particle emission limits

	M_1, N_1 vehicles	**M_2, M_3, N_2 and N_3 vehicles**
Brake particle emissions test	Testing according to the UN GTR on brake emissions	

Table 5: Conditions for testing compliance with tyre abrasion limits

	M_1, N_1 vehicles	**M_2, M_3, N_2 and N_3 vehicles**
Tyre abrasion limits test	Based on the testing methodologies developed in UN for testing tyre abrasion in real world	Based on the testing methodologies developed in UN for testing tyre abrasion in real world

ANNEX IV

LIFETIME REQUIREMENTS

Table 1: Lifetime of vehicles, engines and pollution control systems

Lifetime of vehicles, engines and replacement pollution control devices	**M_1, N_1 and M_2**	**N_2, N_3<16t, M_3<7.5t:**	**N_3>16t, M_3>7.5t**
Main lifetime	Up to 160 000 km or 8 years, whichever comes first	300 000 km or 8 years, whichever comes first	700 000 km or 15 years, whichever comes first
Additional lifetime	After main lifetime and up to 200 000 km or 10 years whichever comes first	After main lifetime and up to 375 000 km	After main lifetime and up to 875 000 km

Table 2: Applicable durability multipliers for adjusting exhaust emission limits under Annex 1 when testing vehicles, engines and replacement pollution control devices during additional lifetime.

Durability multipliers	**M_1, N_1 and M_2**	**N_2, N_3<16t, M_3<7.5t:**	**N_3>16t, M_3>7.5t**
Durability multiplier for additional lifetime	1.2 for gaseous pollutant emissions		

ANNEX V

APPLICATION OF TEST REQUIREMENTS AND DECLARATIONS

Table 1: Application of test requirements and declarations for M_1, N_1 vehicles for vehicle manufacturers

Test requirements	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants and PN in road testing (RDE)	Required demonstration test for all fuels for which the type approval is granted and declaration of compliance for all fuels, all payloads and all applicable vehicle types	Not required	Optional[6]
Gaseous pollutants, PM and PN in RDE cycles in the laboratory and CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability) (WLTP at 23 °C)	Required where all pollutants cannot be measured on the road	Required	Required where all pollutants cannot be measured on the road
CO_2 ambient temperature correction (WLTP at 14°C)	Declaration[6]	Not required	Optional[6]
Crankcase emissions	Declaration that a closed crankcase system or routing to the tailpipe is installed [6]	Required	Optional[6]

[6] The type-approval authority may request the test to be performed

Evaporative emissions SHED test	Required	Required	Optional[6]
Refuelling emissions	Required	Not required	Not required
Emissions durability	Declaration	Not required	Not required
Battery durability	Declaration	Not required	Not required
Laboratory test of low temperature for emissions and range	Required	Not required	Optional[6]
On-board diagnostics	Declaration	Not required	Optional[6]
On-board monitoring	Declaration and demonstration	Not required	Required
Engine power	Required	Not required	Optional[6]
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
Adaptive controls (where applicable)	Declaration and demonstration	Not required	Not required
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required

Table 2: Application of test requirements and declarations for M_1, N_1 vehicles for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements at initial emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance)**	
Relevant actor	***Type approval authority for issuing the type approval***	***Type approval authority***	***Type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Gaseous pollutants and PN in road testing (RDE)	Required demonstration test for all fuels for which the type approval is granted and declaration of compliance for all fuels, all payloads and all applicable vehicle types	Not required	Required for 5% of the vehicle types approved per year	Optional	Required	Optional
Gaseous pollutants, PM and PN in RDE cycles in the laboratory and CO_2 emissions, fuel consumption (OBFCM), electric energy consumption and electric range (Battery Durability)	Required	Audits or optional testing	Optional	Optional	Optional	Optional

(WLTP at 23 °C)						
CO_2 ambient temperature correction (WLTP at 14°C)	Declaration[6]	Not required	Optional	Optional	Required	Optional
Crankcase emissions	Declaration that a closed crankcase system or routing to the tailpipe is installed[6]	Audits or optional testing	Optional	Optional	Optional	Optional
Evaporative emissions SHED test	Required	Audits or optional testing	Optional	Optional	Required	Optional
Refuelling emissions	Required	Not required	Optional	Optional	Required	Optional
Emissions durability	Declaration	Not required	Required	Optional	Required	Optional
Battery durability	Declaration	Not required	Required	Optional	Required	Optional
Laboratory test of Low temperature for emissions + range	Required	Not required	Optional	Optional	Required	Optional
On-board diagnostics	Declaration	Not required	Optional	Optional	Required	Optional
On-board monitoring	Demonstration +Declaration	Not required	Required	Optional	Required	Optional
Engine power	Required	Not required	Optional	Optional	Optional	Optional

Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required	Not required	Required	Optional
Adaptive controls (where applicable)	Declaration	Not required	Not required	Not required	Optional	Optional
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional

Table 3: Application of tests, declarations and other requirements for type-approval and extensions for M_2, M_3, N_2 and N_3 vehicles for manufacturers

Test requirements	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants, PM and PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3) and low load test (if applicable)	Required demonstration tests for all fuels for which the type approval is granted per vehicle type and a declaration of compliance for all fuels, all payloads and all applicable vehicle types	Conformity of production performed at engine level only	Required test on a vehicle with any fuel and on any vehicle category and any payload for all engine types every two year
CO_2 and fuel/energy consumption, zero emission/electric range determination of a vehicle	VECTO licence	For components	Not required
Energy efficiency of trailers	VECTO licence	For components	Not required
Verification testing procedure	Not required	Required	Not required
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required	Optional[6]
Emissions durability	Declaration	Not required	Not required
Battery durability	Declaration	Not required	Not required
On-board diagnostics (OBD family level)	Declaration	Not required	Optional[6]

On-board monitoring (OBM family level)	Demonstration +Declaration	Not required	Required
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required
Adaptive controls (where applicable)	Declaration	Not required	Not required
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required

Table 4: Application of test requirements and declarations for type-approval and extensions for M_2, M_3, N_2 and N_3 vehicles for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements at initial emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Type approval authority for issuing the type approval***	***Type approval authority***	***Type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Gaseous pollutants, PM and PN in road testing (RDE) for each fuel and for the applicable vehicle categories (M_2, M_3, N_2 and N_3) + low load test (if applicable)	Required demonstration tests for all fuels for which the type approval is granted per vehicle type and a declaration of compliance for all fuels, all payloads and all applicable vehicle types	(see engine requirements)	Required yearly for an adequate number of vehicle types on any fuel and on any vehicle category covered by the emission type approval	Optional	Required/Optional	Optional
CO_2,emissions, fuel/energy consumption, zero-emissions/electric range determination of a vehicle	Issue VECTO licence	For components	Not required	Not required	Optional	Optional
Energy efficiency of	Issue VECTO licence	For components	Not required	Not required	Optional	Optional

trailers						
Verification testing procedure	Not required	Required	Optional	Optional	Optional	Optional
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required	Optional	Optional	Optional	Optional
Emissions durability	Declaration	Not required	Optional	Optional	Required	Optional
Battery durability	Declaration	Not required	Optional	Optional	Optional	Optional
On-board diagnostics (OBD family level)	Declaration	Not required	Optional	Optional	Required	Optional
On-board monitoring (OBM family level)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional
Anti-tampering, security and cybersecurity	Declaration and documentation	Not required	Not required	Not required	Required	Optional
Adaptive controls (where applicable)	Declaration	Not required	Not required	Not required	Optional	Optional
Geofencing technologies (where applicable)	Declaration and demonstration	Not required	Not required	Not required	Required	Optional

Table 5: Application of test requirements and declarations for type-approval and extensions of engines intended for M_2, M_3, N_2 and N_3 vehicles for manufacturers

Test requirements for each fuel	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity
Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC Cold and Hot)	Required on the parent engine of the emission family and declaration for all family members**	Required on an engine out of the family	Performed only with the complete vehicle as in Tables 3 and 4
Engine tests for verifying data required for CO_2 determination	Required	Required	
Continuous/periodic regeneration	Declaration	Not required	
Crankcase emissions	Check installation of closed crankcase system or routing to the tailpipe	Not required	
Emissions Durability	Declaration	Not required	
On-board diagnostics (OBD family level)	Declaration	Not required	
On-board monitoring (OBM family level)	Performed only with the complete vehicle as in Tables 3 and 4	Not required	
Engine power	Required		

*** The type approval authority may request a test to be performed during initial type approval.**

**** Supported by data of engine testing of all power ratings.**

Table 6: Application of test requirements and declarations for type-approval and extensions of engines intended for M_2, M_3, N_2 and N_3 vehicles for Member States and recognised third parties/Commission

<table>
<tr><th>Test requirements for each fuel</th><th>Tests and requirements at initial emission type approval</th><th>Tests at conformity of production</th><th>Tests at in service conformity</th><th>Tests at market surveillance</th></tr>
<tr><td>Relevant actor</td><td>Type approval authority for issuing the type approval</td><td>Type approval authority</td><td>-</td><td>-</td></tr>
<tr><td>Gaseous pollutants, PM and PN and CO_2 emissions, fuel consumption on transient cycle (WHTC Cold and Hot)</td><td>Required on the parent engine and a declaration for all family members**</td><td>Audit or optional testing</td><td rowspan="8">Performed only with the complete vehicle as in Tables 3 and 4</td><td rowspan="8">Performed only with the complete vehicle as in Tables 3 and 4</td></tr>
<tr><td>Engine tests for verifying data required for CO_2 determination</td><td>Required</td><td>Audit or optional testing</td></tr>
<tr><td>Continuous/periodic regeneration</td><td>Declaration</td><td>Not required</td></tr>
<tr><td>Crankcase emissions</td><td>Check installation of closed crankcase system or routing to the tailpipe</td><td>Not required</td></tr>
<tr><td>Emissions durability</td><td>Declaration</td><td>Not required</td></tr>
<tr><td>On-board diagnostics (OBD family level)</td><td>Declaration</td><td>Not required</td></tr>
<tr><td>On-board monitoring (OBM family level)</td><td colspan="2">Performed only with the complete vehicle as in Tables 3 and 4</td></tr>
</table>

Engine power	Required	Not required		

Table 7: Application of test requirements and declarations for type-approval of pollution control systems for manufacturers

Test requirements	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity
Demonstration of performance and durability with aged parts	Required/Declaration	Not required	Optional
Durability requirement check in real life (RDE test with aged vehicles)	Declaration	Not required	Optional

Table 8: Application of test requirements and declarations for type-approval of pollution control systems for Member States and recognised third parties/Commission

Test requirements	**Tests and requirements at initial emission type approval**	**Tests at conformity of production**	**Tests at in-service conformity**		**Tests at market surveillance**	
Relevant actor	***Type approval authority for issuing the type approval***	***Type approval authority***	***Type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Demonstration of performance and durability with aged parts	Required	Optional	Optional/Optional		Optional/Optional	
Durability requirement check in real life (RDE test with aged vehicles)	Declaration	Not required	Optional/Optional		Required/Optional	

Table 9: Application of test requirements for type-approval of brake systems for manufacturers

Test requirements	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity
Brake system emissions test in WLTP brake cycle	Required	Required	Required

Table 10: Application of test requirements for type-approval of brake systems for Member States and recognised third parties/Commission

Test requirements	Tests and requirements at initial emission type approval	Tests at conformity of production	Tests at in-service conformity		Tests at market surveillance	
Relevant actor	***Type approval authority for issuing the type approval***	***Type approval authority***	***Type approval authority***	***Third parties and Commission***	***Market surveillance authorities***	***Third parties and Commission***
Brake system emissions test in WLTP brake cycle	Required	Audit or optional testing	Required/Optional		Optional/Optional	

ANNEX VI

CORRELATION TABLE

1. Regulation (EC) No 715/2007

Regulation (EC) No 715/2007	This Regulation
Article 1(1)	Article 1(1)
Article 1(2)	Article 1(2)
Article 2(1)	Article 2(1)
Article 2(2)	Article 5(6)
Article 3	Article 3
Article 4(1), first subparagraph	Article 4(1), first subparagraph
Article 4(1), second subparagraph	Article 4(1), second subparagraph
Article 4(2)	Article 7(1)
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