

## COMBINED EVALUATION ROADMAP / INCEPTION IMPACT ASSESSMENT

This combined evaluation roadmap / Inception Impact Assessment aims to inform citizens and stakeholders about the Commission's work in order to allow them to provide feedback on the intended initiative and to participate effectively in future consultation activities. Citizens and stakeholders are, in particular, invited to provide views on the Commission's understanding of the current situation, problem and possible solutions and to make available any relevant information that they may have, including on possible impacts of the different options.

<b>TITLE OF THE INITIATIVE</b>	Development of post-Euro 6/VI emission standards for cars, vans, lorries and buses
<b>LEAD DG – RESPONSIBLE UNIT</b>	GROW.C4 Automotive and Mobility Industries
<b>LIKELY TYPE OF INITIATIVE</b>	Legislative
<b>INDICATIVE PLANNING</b>	Adoption in Q4 2021
<b>ADDITIONAL INFORMATION</b>	<a href="https://ec.europa.eu/growth/sectors/automotive/environment-protection/emissions">https://ec.europa.eu/growth/sectors/automotive/environment-protection/emissions</a>

### A. Context, evaluation, problem definition and subsidiarity check

#### Context

The European Green Deal<sup>1</sup> is a new growth strategy that will foster the transition to a climate-neutral, resource-efficient and competitive economy and the move towards zero-pollution in Europe. To accelerate the shift to sustainable and smart mobility, transport should become significantly less polluting, especially in cities. The EU automotive industry must lead the global transition to zero-emission vehicles, rather than follow the lead of others. This will allow the industry to take advantage of the business opportunities offered. Significant efforts have been made over the last 4 years to reduce emissions of air pollutants, in particular in the wake of the [Dieselgate](#). In parallel, new power trains – battery electric and hydrogen – are emerging as an alternative to the combustion engine. However, although the roll out of such technologies is accelerating, it is still slow. In the meantime, more needs to be done to “clean” the combustion engine to ensure protection of human health in urban areas and to prevent the internal market from fragmenting due to individual national initiatives (e.g. diesel bans, petrol bans). The European Green Deal roadmap therefore includes a proposal for more stringent air pollutant emissions standards for combustion-engine vehicles by 2021. Given the overall ambition of the European Green Deal, any possible policy action on stricter air pollutant emission limits must also consider the EU's objective of achieving climate neutrality by 2050.

#### Evaluation

The Commission will carry out an evaluation of the current Euro 6/VI vehicle emission standards to assess their impact<sup>2</sup>. The evaluation will assess to what extent the Euro 6/VI vehicle emission standards have achieved their objectives of harmonising the rules on pollutant emissions from vehicles and improving air quality by reducing pollutants emitted by road transport.

The evaluation will analyse in detail the effectiveness, efficiency, relevance, coherence and EU-added value of the Euro 6/VI vehicle emission standards. Among other things, the analysis will cover issues such as the impact of Euro 6/VI on making vehicles on EU roads cleaner, the benefits of Euro 6/VI for the environment, citizens and industry, and the proportionality of the costs and burden of Euro 6/VI to its benefits.

The evaluation baseline will cover the period of application of the Euro 6/VI emissions standards up to 2019, which is different for cars/vans and lorries/buses. That means there will be two baselines: one for cars and vans (2014-2019) and one for lorries and buses (2012-2019). The evaluation will cover EU-28 Member States. The

<sup>1</sup> The European Green Deal, COM(2019) 640 final

<sup>2</sup> Regulation (EC) No 715/2007 on type approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and its implementing Regulation (EU) 2017/1151 as well as Regulation (EC) No 595/2009 on type-approval of motor vehicles and engines with respect to emissions from heavy-duty vehicles (Euro VI) and its implementing Regulation (EU) No 582/2011

evaluation conclusion will feed into the impact assessment of the post-Euro 6/VI initiative.

#### Problem the initiative aims to tackle

Since the evaluation has not yet been conducted, the problem definition is preliminary and will be refined once the results of the evaluation are available.

The existing vehicle emission standards (Euro 6/VI) include real-driving emissions (RDE) testing for cars and vans and portable emission measurement systems (PEMS) testing for lorries and buses. This is widely recognised as an important step towards ensuring that emissions from new vehicles remain below the air pollutant limits for a wide range of conditions of use. As a result, the emission performance of cars, vans, lorries and buses has improved significantly. However, road transport continues to represent one of the main causes of air pollution in European cities. There are also other factors affecting the emissions of air pollutants from road transport (e.g. increases in vehicle fleet numbers, overall kilometres driven, driving behaviour, poor maintenance). However, the current standards do not sufficiently contribute to the decrease in air pollutant emissions emerging from road transport, required for the move towards zero-pollution in Europe and the protection of human health from air pollutant emissions, with particular emphasis to urban settings.

The following three issues have preliminarily been identified as stumbling blocks that prevent Euro 6/VI from effectively limiting all harmful air pollutant emissions from new vehicles: Firstly, current vehicle emission standards are hampered by their complexity. In particular, there are separate regulatory frameworks for cars/vans and lorries/buses, different dates of entry into force for Euro 6/VI steps, a great many different emission tests, all of which are complex, and differences in emission standards based on fuel and technology. This complexity does not guarantee the best environmental and health protection. The complexity in the standards, especially the need to certify vehicles in various steps, requires time and significant resources for both manufacturers and national authorities. This has led to a high testing and administrative burden, as well as a risk of misinterpretations in the application of the standards. Secondly, because the current emission limits were adopted over a decade ago, they no longer represent the state of the art in emission reduction. Notably, several pollutants that are of concern today were not included in the past for various reasons. Lastly, real-world emissions are still not measured under all conditions of use in Euro 6/VI. In addition, air pollutant emissions are still not monitored throughout the entire lifetime of vehicles on EU roads. Since on-board diagnostics (OBD) has not proven to be an efficient tool for limiting tampering of vehicles, it is important to measure real-world emissions to prevent disproportionately high emissions.

#### Basis for EU intervention (legal basis and subsidiarity check)

The legal basis for the EU intervention is Article 114 of the Treaty on the Functioning of the EU. The European Parliament and Council should adopt measures, which have as their object the establishment and functioning of the internal market. At the same time, the EU should act only if the objectives of the proposed action cannot be sufficiently achieved at national level, as set out under the principle of subsidiarity in Article 5 of the Treaty. Thus, the EU may adopt vehicle emission standards in accordance with the principle of subsidiarity. However, the setting of post-Euro 6/VI emission standards should not go beyond what is necessary to achieve the above-mentioned objectives, which cannot be met by regulatory actions at Member State, regional or local level.

### B. Objectives and policy options

The **general objective** of the post-Euro 6/VI initiative is to improve the current Euro 6/VI standards on air pollutant emissions from cars, vans, lorries and buses. This is to ensure a high level of environmental and health protection in the European Union and the proper functioning of the internal market. The **specific objectives** are to improve air quality, with a particular emphasis on urban areas, by reducing air pollutant emissions from road transport and setting harmonised rules for vehicles. The **operational objectives** are to reduce the complexity and compliance costs of the existing Euro 6/VI vehicle emission standards, to provide appropriate and up-to-date limits for all air pollutant emissions and to ensure that new vehicles keep their air pollutant emissions under control throughout their entire lifetime and in all conditions of use.

The Commission has identified the following preliminary set of policy options to achieve the specified objectives. They will be revised once all the results of the evaluations/studies are available. These options were designed using input from the Advisory Group on Vehicle Emission Standards (AGVES).

The **baseline scenario** will consider no legislative changes to Euro 6/VI.

**Option 1** will consider a narrow revision of Euro 6/VI and addresses key simplification and coherence challenges

in an increasingly complex environment. This option would involve setting up a single air pollutant emissions standard for cars, vans, lorries and buses. It would also involve simplifying the existing emission tests while keeping a focus on real-world testing.

**Option 2** will consider a wider revision of Euro 6/VI by including, in addition to the measures in option 1, more stringent air pollutant emission limits for all vehicles. This would involve stricter emission limits for regulated air pollutants<sup>3</sup> and/or new emission limits for currently non-regulated air pollutants<sup>4</sup>, including non-CO<sub>2</sub> greenhouse gas emissions.

**Option 3** will consider a comprehensive revision of Euro 6/VI by introducing, in addition to the measures in option 2, real-world emission monitoring over the entire lifetime of a vehicle. Data on air pollutant emissions collected through on-board monitoring (OBM) would subsequently support market surveillance and in-service conformity testing. These data may also be used for roadworthiness tests (i.e. periodic technical inspections and technical roadside inspections), and/or for automatically enabling a zero-emission mode depending on the location of a vehicle (“geo-fencing”).

### C. Preliminary assessment of expected impacts

#### Likely economic impacts

This section discusses the likely economic impacts of the policy options. Ongoing studies, complemented by stakeholder consultations and a combined evaluation/impact assessment, will further examine the identified impacts to determine their net economic impact on society.

**Option 1** is expected to have a positive economic impact. There would be a decrease in compliance costs and administrative burden as a result of the simplification of testing procedures for both the automotive industry and the national authorities responsible for approval and market surveillance. This decrease in costs is expected to exceed the limited adjustment costs resulting from simplified testing requirements. Simplification of the Euro vehicle emission standards would most likely result in an increase in consumer trust in the Euro standards.

**Option 2** is expected to entail costs in the short run. However, in the long run the net economic impact is expected to be positive. In the short term, introducing stricter and/or new limits for air pollutants would trigger compliance costs for manufacturers, which might translate into higher prices for consumers. On the positive side, stricter and/or new air pollutant limits would most likely reduce health and environmental costs. In addition, it is expected that the higher levels of health and environmental protection would increase consumer trust.

**Option 3** is expected to entail higher costs in the short term for manufacturers. This would be likely to result in higher prices for consumers. Nevertheless, the relative costs of continuously monitoring real-world emissions are not expected to be great. This is because there would likely be synergies from simplifying or replacing the existing on-board diagnostics (OBD) and introducing on-board fuel consumption meters as set out in the CO<sub>2</sub> emission performance standards<sup>5</sup>. In addition, continuous monitoring would create the potential to further reduce the cost of emissions testing and its related complexity. Despite the higher costs, the monitoring systems would be expected to significantly reduce air pollutant emissions by detecting non-compliance and malfunctions early. This would reduce health and environmental costs and significantly increase consumer trust in the Euro standards.

Trade is generally not expected to be affected by the potential revisions of the vehicle emission standards. In all policy options, both EU and non-EU manufacturers would have to meet the new requirements before their new vehicles could be placed on the EU market. Thus, imported vehicles would not be treated differently to domestic ones. In the post-Euro 6/VI initiative, SMEs are almost exclusively located in the automotive supply chain and in traditional manufacturing sectors. Thus, while some component suppliers might be affected by increasing demand for certain parts and technologies, the effect on SMEs is expected to be minor.

#### Likely social impacts

The revision of the Euro 6/VI vehicle emission standards is expected to contribute to an improvement in public health, in particular in urban areas. Option 1 is expected to result in a moderate improvement in public health. Options 2 and 3 are expected to greatly benefit public health by cutting the mortality and morbidity caused by air

<sup>3</sup> e.g. NO<sub>x</sub>, PM, PN, CO, THC, NMHC and, for lorries and buses, CH<sub>4</sub> and/or NH<sub>3</sub>

<sup>4</sup> e.g. Sub-23 nm and total particles, N<sub>2</sub>O and, for cars and vans, CH<sub>4</sub> and/or NH<sub>3</sub>

<sup>5</sup> Regulation (EU) 2019/631 (cars, vans) and Regulation (EU) 2019/1242 (lorries)

pollution that affects urban populations in particular. Air pollution has become the leading environmental burden on public health, leading to cardiovascular and respiratory impacts. Since the risk group for this type of pollution includes infants and elderly people, these groups would benefit the most from options 2 and 3. However, these forecasts are based on the assumption that the decrease in emissions resulting from more stringent emission standards for new vehicles would be larger than the potential increase in emissions caused by the fleet shifting to older and less clean vehicles. This prospect of a shift in the fleet to older and less clean vehicles may sound counter-intuitive. However, it is because the expected increase in consumer prices in options 2 and 3 would be likely to have some effects on social inclusion, affecting the affordability of new post-Euro 6/VI vehicles for individuals and households with lower incomes. Therefore, these individuals and households might be more likely to keep older, less clean vehicles for a longer time or use alternative modes of transportation.

Employment and jobs in the automotive industry and its supply chain are expected to be positively affected, in varying degrees, by the different policy options. Stricter air quality emission standards would stimulate R&D and innovation in the automotive sector and boost the production of both clean combustion engines and improved emission control systems.

#### **Likely environmental impacts**

All three options are expected to have a positive environmental impact on air quality and also on climate change. However, the scale of the positive environmental impact depends on the specific option - it is expected that the benefits would increase moving from option 1 to option 2, and from option 2 to option 3.

It is expected that revising the Euro 6/VI vehicle emission standards through a combination of simplification, setting of new limits and real-world monitoring would decrease air pollutants and non-CO<sub>2</sub> greenhouse gas emissions from vehicles. This reduction would be rather modest in option 1, but significant in options 2 and 3. Lower emissions of air pollutants such as NO<sub>x</sub>, ultra fine particles or NH<sub>3</sub> would also improve air quality in urban areas and reduce total national pollutant emissions. This would also improve human health. The decrease in greenhouse gas emissions such as N<sub>2</sub>O or CH<sub>4</sub> would also benefit the climate. In option 1, simplified emission testing is expected to only moderately decrease emissions caused by road transport. Option 2 would have a more extensive impact since it would include new and stricter limits on regulated and non-regulated emissions with a considerable effect on human health, the environment and the climate. The benefits for air quality and climate change would likely be significantly more extensive in option 3. Option 3 combines the previous options with continuous real-world emission monitoring to ensure compliance, robustness against tampering, and enforcement over the entire lifetime of the vehicle.

#### **Likely impacts on fundamental rights**

The initiative is not expected to have any impact on fundamental rights.

#### **Likely impacts on simplification and/or administrative burden**

All options address the simplification and coherence challenges by putting in place a single and streamlined vehicle emissions standard and optimised testing procedures. The Commission therefore expects significant benefits due to greater legal certainty and less administrative burden. Efforts will be made to quantify the impacts of the different options, in particular the impacts on administrative burden and compliance costs.

Option 2 would not add any further administrative burden, since introducing stricter emission limits for existing pollutants or adding pollutants to be tested (in the same tests) would not increase administrative burden or have any measurable impact on complexity.

In option 3, technologies for continuously monitoring real-world emissions over the lifetime of vehicles might result in a slight increase in administrative burden to ensure monitoring and control functions. Existing OBD could be replaced, and legal information obligations could be reduced, if for example testing shifts further from the laboratory to the road. This may mitigate additional administrative costs.

### **D. Evidence base, data collection and better regulation instruments**

#### **Impact assessment**

An impact assessment will support the development of this initiative and will inform the Commission's decision.

The problem analysis in the impact assessment will depend largely on the evaluation results.
<b>Evidence base and data collection</b>
<p>The collected evidence and data for the evaluation and impact assessment will include the following:</p> <ul style="list-style-type: none"> <li>• A study on post-Euro 6/VI emission standards in Europe. The study will review emission legislation in other parts of the world and emission tests for pollutants. It will provide input for the evaluation and impact assessment;</li> <li>• Stakeholder papers or other evidence provided by the Advisory Group on Vehicle Emission Standards (AGVES) which is available at the <a href="#">AGVES</a> CIRCABC collaborative online platform;</li> <li>• Other relevant sources of information (e.g. peer-reviewed articles, Commission studies);</li> <li>• Desk research, questionnaires and interviews with stakeholders;</li> <li>• Secondary data and primary data gathered during fieldwork.</li> </ul>
<b>Consultation of citizens and stakeholders</b>
<p>Citizen, stakeholders (the automotive industry and its suppliers; environmental NGOs; consumer organisations; others) and Member States will be consulted. A public consultation will address both the evaluation of the existing Euro 6/VI vehicle emission standards and the impact assessment of the post-Euro 6/VI initiative. The consultation will be published in spring 2020 on the <a href="#">public consultation portal</a> of the Europa website for a minimum consultation period of 12 weeks.</p> <p>The Commission will also organise two targeted consultations with the support of a contractor: one focusing on the evaluation of the current Euro 6/VI vehicle emission standards and one looking into the impact assessment of post-Euro 6/VI. The stakeholders will provide their views and opinions through questionnaires and interviews. The third consultation activity will consist of Commission expert groups. The Advisory Group on Vehicle Emission Standards (<a href="#">AGVES</a>) has been set up by joining all the relevant expert groups working on emission legislation. AGVES has already met in May, October 2019 and February 2020, and further AGVES meetings are planned for May, July, September and November 2020.</p>
<b>Will an Implementation plan be established?</b>
<p>An implementation plan is not planned at this time, but one may be considered when the preferred option has been selected. This implementation plan would address the possible implementation challenges that the preferred option will face.</p>