POSITION

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CO2 standards for Heavy Duty Vehicles

IRU Position on CO2 standards for heavy-duty vehicles

I. IRU POSITION

IRU recognises the upcoming revision of the heavy duty vehicles (HDVs) CO_2 emissions reduction standards as an important measure to green transport on EU roads. Further decarbonising road goods transport is crucial given that transport by road represents over 75% of the EU's overland goods transport with realistically no chance of a massive shift to other modes, even in the distant future. Therefore road transport will remain a central player in the logistics chain. Collective passenger transport is a decarbonisation tool in its own right as it groups people and moves them away from private cars. However, it would bring even further benefits if cleaner vehicles and fuels were readily available across the EU. While road transport operators are committed to decarbonise, EU measures are paramount promoting the reduction of fuel consumption, cleaner fuels and vehicles running on clean technologies.

To support the decarbonisation of road transport further, the revision of the HDV CO_2 standards should be based on the following principles:

- **Support the long-term use of three technological pillars for heavy-duty vehicles: hydrogen fuel cell, battery-electric, and combustion engine based on carbon-neutral renewable transport fuels**. All options that can contribute to decarbonisation should be part of the solution. Both the zero-emission tailpipe vehicles (fuel-cell hydrogen and battery-electric) and vehicles using carbon-neutral sustainable fuels can ensure carbon neutrality for road transport on a well-to-wheel approach. Given the limited resources for the large-scale deployment of any of the three options on its own, it is imperative to keep all options open to ensure the smooth continuity of collective mobility and of EU logistics chains.
- **Encourage the use of renewable and low-carbon fuels during the transition to zero emission technologies would allow for a swifter decarbonisation of the existing fleets.** As the development and production on a large scale of zero-emission vehicles (ZEV) and of carbon neutral sustainable fuels will take considerable time, low carbon fuels should provide the possibility to ripe immediate benefits and take important steps in decarbonising road transport. The "All or nothing" approach will make road transport captive to a polluting pattern for an extensive time and should be avoided. A crediting system that accounts for the use of such fuels would allow transport operators to choose from a broader range of technologies to reduce emissions, depending on their operational needs while still promoting lower carbon emissions and, eventually, carbon neutrality.
- **Setting realistic CO_2 reduction targets.** The availability of other elements needs to be considered to roll out alternative fuel vehicles effectively, such as alternative fuels infrastructure, power in the grid and hydrogen. Continued use of internal combustion engine technology must be included in these targets in parallel with the revision of the fuels legislation. Banning the combustion engine

should not be an option to consider for HDVs. Given the early stage of technological development of alternative fuelled HDVs, no 100% target to reduce emissions should be set at this stage. The targets and concurrent conditions necessary for the uptake of the vehicles should be re-evaluated every 2 to 3 years to check progress.

- **Including more vehicle categories in the scope of the regulation**. To foster innovation and new technological solutions, the regulation should include buses, coaches, semi-trailers and trailers, not only motor vehicle tractor units. In addition, the vehicle energy consumption calculation tool (VECTO) should be continuously developed and updated to include new fuel-efficient technologies and stimulate innovation and technological solutions.
- **Exemptions from specific ZEV targets for special types and small series of heavy-duty vehicles**. In some cases, the production of ZEV may be difficult due to sector-specific characteristics and/or vehicle specific characteristics, as already recognised by the existing legislation. The upcoming legislation should carefully take into account the necessity to continue applying exemptions from targets.
- **Incentives for the uptake of alternative fuel HDVs**. To boost further investment by operators, the revised CO_2 standards regulation should address demand-side barriers and consider incentives for the uptake of ZEV. Consideration should be given as to how certain best practices at national level could be scaled up in order to encourage EU-wide uptake.
- **Keep close connection and consistency with related legislation**. To discourage multi-taxation and charging mechanisms that would put additional pressure on the competitiveness of goods and passenger transport, it is necessary to align the legal framework, in particular regarding the Fit for 55 package. For instance, the implementation of the alternative fuels infrastructure regulation is a pre-condition for operators to be able to switch to alternative fuel vehicles and new technologies.

II. ANALYSIS

1. General

The current CO_2 standards for HDVs (adopted in August 2019) were set to reduce the average CO_2 emissions of the highest-emitting HDV segments by 15% in 2025 and by 30% in 2030, compared to a baseline determined from 2019 and 2020 data. The baseline value was calculated using the certified CO_2 emissions of new HDVs collected under a separate monitoring and reporting regulation, which entered into force in January 2019.

Not all categories of HDV goods and passenger transport vehicles are currently covered by the regulation. For example, buses, coaches, semi-trailers and trailers are currently excluded from its scope.

The EU's objective to reduce road transport emissions is part of the long-term goal of achieving a zero-emission automotive sector. IRU welcomes the European Commission's intention to develop a harmonised methodology for measuring and reporting CO_2 emissions of the life cycle of such vehicles and the energy consumption. In article 15.5) of Council Regulation (EU) 2019/1242, the Commission commits to such an approach in order to obtain an overview and, thus, ensure consistency with the Union's climate objectives. This approach will confirm the opportunity, and even necessity, to rely not only on ZEVs as a solution to reach decarbonisation goals, but also on combustion engines based on carbon-neutral fuels.

CO_2 standards should help to push for zero- and low-carbon solutions. At the same time they should allow for investment in technologies or vehicles that meet the needs of transport operators in terms of pricing and operational suitability.

CO_2 standards are only one tool to contribute to the target of further decarbonisation. With the Fit for 55 Package (FF55) published in July 2021, the European Commission is proposing a set of initiatives aiming to decarbonise the transport sector. Because FF55 files are interconnected, it is necessary to consider them in a joint approach.

2. Technology neutrality

Every technological solution that has the potential to contribute to decarbonising road transport needs to be considered.

IRU is concerned that by basing the standards on a tank-to-wheel approach with ambitious targets and short deadlines for ZEV vehicles, manufacturers are being encouraged to invest exclusively in this type of technology. While a push to invest in ZEV is necessary, this should not be the only solution sought, in particular since large-size ZEV HDVs will not scale up rapidly even under the most optimistic approaches.

In the short term, achieving immediate improvements of the internal combustion engine, including in hybrid vehicles and plug-in hybrid vehicles (PHEV), would be a missed opportunity. In fact, these could contribute to reducing emissions in the short and medium term by using blended renewable liquid and gaseous fuels. Commercial road goods and passenger transport will require a wide range of cost-efficient alternative fuels, and a sufficient number of vehicles available to choose from for different types of road goods and passenger transport operations.

Blended renewable liquid and gaseous fuels play an important role in decarbonising road transport. These energy sources should not be excluded from any decarbonisation scenario as this could limit the opportunities to speed up the sector's decarbonisation. Large-scale use of combustion engine based on lower-carbon fuels to make progress in the short run will be necessary. The large-scale deployment of ZEV will take a long time due to higher vehicle prices, delivery times, technological progress and safety issues that remain unsolved. These may involve issues related to risks, for example in relation to transport and storage, as well as limitations regarding multi-modal transport, such as restrictions in shipping legislation.

The approach to decarbonising road transport must be technology neutral and based, at least on a well-to-wheel analysis, and ideally on a life cycle approach. Although the EU has not developed specific methodologies yet, the revision of the CO_2 standards for HDVs should not eclipse the obvious, namely that the sector's carbon neutrality goes beyond vehicles and can also be achieved by using combustion engines based on special types of fuels. The revision should also provide the right framework to remain open to any options allowing operators to fully embrace the transition and reduce emissions. Operators are likely to remain dependent on combustion engine technology over a long transition period.

A target aiming for "zero emissions" should be flexible and should vary for different vehicle categories. It should also consider what is already technically feasible for the short and medium term. Targets should be achievable in all Member States in order to avoid distortions of competition and facilitate the cross-border use of alternative fuel vehicles.

The voluntary crediting system is an additional option for vehicle manufacturers to meet the targets of the CO_2 standards with additional volumes of renewable fuels. In this system, vehicle manufacturers finance the production of additional renewable fuels and receive respective credits by subtracting the corresponding emission reductions from their fleet targets. This gives transport operators more options to reduce emissions. Sustainable renewable fuels fulfilling the sustainability criteria of the Renewable Energy Directive (EU) 2018/2001 would qualify for such a crediting system. A voluntary crediting system would provide a safety net for the massive transformation that transport operators are already undergoing towards net-zero emission mobility.

IRU calls for:

- An adequate transition and flexibility in the choice of fuels, which are essential for the sector, given the wide operational scope of the commercial heavy-duty vehicle sector. A transparent EU legal framework that encourages the switch to alternative fuel technologies in commercial road transport while allowing technology neutrality is paramount for further decarbonising in a cost-effective manner. Any technologies, fuels and operational practices which can contribute to decarbonisation should play a role.
- A crediting system that offers manufacturers flexibility in meeting the targets and incentivises investment into new innovative technologies. This will enable transport operators to choose from a broader range of technologies, depending on their mobility needs. This system is more appropriate than a ZEV mandate, which would be too constrictive in terms of vehicle choice.

3. Scope

Widening the scope of the CO_2 standard regulation may lead to more innovation in fuel application and technology. Buses, coaches, trailers and semi-trailers should be included in the scope. It must also be ensured that the VECTO tool is continually developed and updated to take up new fuel efficient technologies. Including the most recent technologies in VECTO will ensure that it does not act as a market barrier to innovation. VECTO and CO_2 standards need to be applied to a wider scope of vehicles.

In HDV goods transport, the CO_2 emissions and fuel consumption of vehicle combinations are not only determined by the engine performance of the tractor or motor vehicle unit. The type of trailer or semi-trailer towed contributes to determining this performance. They should therefore be included in the scope of the regulation. Bringing new trailers and semi-trailers on the market that contribute to a better overall CO_2 and fuel consumption performance of the vehicle combinations should be encouraged. New technologies are needed to improve the environmental performance of unloaded or partially loaded vehicles. Examples of such technological improvements would be removable roofs, trailers that adapt easily to different freight categories, or vehicle combinations that automatically adjust to the actual driving environment (i.e. traffic situation, topology and payload). In addition to this, transport operators should also receive guidance on how they can reduce the emissions and fuel consumption of their existing trailer/semi-trailer fleet.

However, some categories of HDVs (heavy trailers, long-distance trucks, coaches) are more difficult to electrify than others. Incentives to foster innovation should be encouraged.

It could be technically impossible or unviable to adapt certain types of specialised HDVs, such as exceptional load vehicles, to electricity or hydrogen in a short to medium time frame. This is also due to the fact that ongoing research is still focusing on the development of standard HDVs. Therefore, exemptions will be necessary during a transition period until zero-emission technology is usable on this type of vehicles as well. In addition to exceptional load transport, Eco-trucks, also known as the European Modular Concept (EMC) as defined in Directive 96/53/EC Article 4 §4(b), are also a category of HDVs which cannot shift to zero-emission technologies at the moment. This is due to the specific characteristics of the zero-emission technology that such vehicles will require. In addition, Eco-trucks are a tool for decarbonisation in its own right as they can reduce commercial road freight emissions by up to 40% compared to standard combinations.

IRU calls for:

- The inclusion of more vehicle categories (namely buses and coaches) in the scope of the regulation in order to foster innovation and new technological solutions. Similarly, VECTO needs to be continually developed and updated to

include new fuel-efficient technologies and to stimulate innovation and technological solutions.

- Support to new technologies improving the environmental performance of trailers and semi-trailers. Transport operators should also receive guidance on how they can reduce the emissions and fuel consumption of their existing trailer/semi-trailer fleet.
- The consideration of sector-specific characteristics regarding autonomy, carrying and loading capacity. Small series vehicles, exceptional load vehicles and high-capacity vehicles, such as the European Modular Concept (EMC), should be exempted from the scope of the regulation on CO_2 standards for HDVs.

4. Incentives for Market Uptake

The push towards HDVs with lower CO_2 emissions represents an opportunity for operators to ensure that their business models are aligned with the transport systems of the future, and that their fuel consumption and related costs can be reduced. At the same time, the need to reduce CO_2 emissions further represents a challenge for the commercial road transport industry in terms of costs and operational technicalities. Many barriers still exist for operators looking to invest in more expensive vehicles and technologies. Rising fuel prices add to the issue and reduce the operators' financial resources for investments.

For a sector that is dominated by small and medium-sized enterprises with low profit margins, difficulties in financing the more expensive technologies and vehicles are a major constraint. Uncertainty over return on investment is another reason for their reluctance to invest. Operators have also expressed concern about the appropriateness of certain technologies for operational use, for example, due to weight and payload trade-offs.

Therefore, market uptake may depend, to some extent, to the level and type of incentives offered for certain technologies and fuels. These challenges must be addressed if policymakers want to ensure faster uptake of technologies and fuels with a better CO_2 performance. Incentives should be developed to ensure that alternative fuel, low- and zero-emission vehicles become available for all main market segments in commercial goods and passenger road transport. Carrying capacity and range categories should be important elements to use in setting targets and determining incentives.

Some EU member states have made an effort at the national level in order to encourage the faster deployment of cleaner vehicles, alongside action at regional and local level. Examples include:

- Schemes offering subsidies to operators to purchase low- and zero-emission vehicles
- Bank agreements foreseeing reduced interest rates to operators investing in cleaner vehicles, or in measures aimed at reducing energy consumption
- Bonus systems for the purchase or leasing of low- and zero-emission vehicles
- Assistance to transport operators including bonuses, such as exemption from registration taxes
- Exemptions from road user charging for low- and zero-emission vehicles
- Permission to drive light goods vehicles above 3,5 tonnes with a B-license
- Introduction of scrappage schemes to help shift investment
- Public private partnerships

IRU calls for:

- A revised CO_2 standards regulation which addresses demand-side barriers to the market uptake of low- and zero-emission vehicles. An appropriate legal environment and incentive schemes are needed to foster investment in new technologies. Consideration should be given as to how certain best practices at national level could be scaled up in order to encourage EU-wide uptake.

5. Alignment of the Legal Framework

Alignment of the legal framework, in particular with regard to the Fit for 55 package including synchronisation with alternative fuels roll out and the taxation and charging legislation), is necessary to ensure that the new CO_2 standards can serve as a positive incentive for an increased uptake of alternative fuels and new technologies.

The implementation of the alternative fuels infrastructure regulation is a pre-condition for commercial road transport to progressively switch to alternative fuel vehicles and contribute to meeting stricter CO_2 standards. It is therefore essential to put in place an adequate network of alternative fuelling/charging stations for HDVs across the EU to encourage transport operators to invest in and actively use such vehicles. A confidence-building approach is needed that provides certainty about the grid capacity for electric commercial vehicles. Looking at the expected growth in goods and passenger transport, and at the role that hydrogen-electric propulsion may play in the coming decades, the energy demand for heavy-duty vehicles will be roughly five times higher by 2050 compared to today's energy demand.

In addition to the charging infrastructure, transport operators need a guarantee that there is sufficient electricity in the grid and sufficient hydrogen for recharging/refuelling. It is important to ensure that the electricity grid, hydrogen availability and charging infrastructure will not become a bottleneck for the switch to battery electric commercial vehicles.

Further to the interconnectivity between CO_2 standards and the alternative fuel infrastructure regulation, other legislative initiatives also need to be considered in the context of CO_2 standards.

- The European Commission is currently developing the EURO VII standards, introducing new standards for the exhaust emissions of new vehicles sold in the EU. Among other elements, these new standards will set stricter targets for CO_2 emissions.
- The proposal to include road transport in a new emission trading system for transport and building also aims to lower CO_2 emissions in road transport.
- The new Eurovignette Directive will introduce a set of new provisions to reduce CO_2 emissions, including a variation rate based on the vehicles fuel consumption performance.

All of these measures will add up and lead to higher costs for transport operators. Higher energy prices are expected after the implementation of the new energy taxation directive currently discussed at the EU level. This will also increase the additional charges. As a rule, multiple charging and taxation should be avoided.

The European legal framework must be aligned, and provide long-term certainty and reliable guidance for long-term investment. It needs to guarantee the necessary pre-conditions that enable transport operators to switch to carbon-neutral fuels and technologies, so that legislative initiatives can actually serve as positive incentives, without penalising the market. In addition, the European legal framework should build on a long-term strategy and support the investment already made in alternative fuel technologies in recent years, based on the incentives set out at the time.

IRU calls for:

- The alignment of the legal framework, in particular with regard to the Fit for 55 package, to ensure that the new CO_2 standards can serve as an incentive for

an increased uptake of alternative fuels and new technologies. The implementation of the alternative fuels infrastructure regulation is a pre-condition for operators to switch to alternative fuels and new technologies. In addition, multi-taxation and charging would put the competitiveness of the goods and passenger transport sector at risk. ETS, ETD, Euro VII and also the Eurovignette should not add excessive costs for operators who are already facing higher costs for new vehicles due to the stricter CO_2 standards, and higher fuel and energy prices.

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