

HISTORY AND FUTURE OF EU HDV WEIGHTS AND DIMENSIONS POLICY: INSIGHTS IN POLICY PREPARATION



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Abstract

The Weights and Dimensions Directive (96/53/EC), which governs the weights and dimensions of heavy commercial vehicles in the European Union, has been in place for 25 years. It is currently being reviewed by the European Commission with the aim of updating it to reflect the current needs of the freight transport market. This paper will describe the steps in the review and update process.

The starting point is an evaluation of what the current Directive has achieved since its entry into force some 25 years ago, in light of the objectives set at its inception and how these have changed and impacted amendments to the Directive over its lifetime.

Based on the results of the evaluation, the new policy priorities and related legislation, a set of new policy measures are developed and assessed on its economic, social and environmental impacts. This includes measures to decarbonize the sector, achieve further harmonization of rules among Member States, and strengthen the enforcement of rules.

Keywords: Heavy Duty Vehicles, Legislation, Policy, European Union, Impact Assessment, Zero Emission Vehicles, Weight and Dimensions

1. Introduction

The European Union (formerly the European Community) has among its main goals the creation of a Single Market for goods and services, providing a level playing field for parties from all Member States to compete under fair conditions. Directive 85/3/EEC was the first policy action taken, aiming to harmonise rules on heavy vehicle weights and dimensions in order to protect the infrastructure while preserving road safety. Ten years later, after no less than 7 amendments and with an expansion of the Union from 12 to 15 members, a thorough revision was needed, resulting in the current Directive 96/53/EC, which expanded the scope of the Directive by including more vehicles and setting clearer conditions for the application of common rules in international transport on the one hand (the primary scope of the Directive), and the possibility for national derogations in domestic transport on the other hand, respecting the principle of subsidiarity. It reflected a balance between the rational and economical use of commercial road vehicles and the requirements of infrastructure maintenance, road safety and the protection of the environment. Since its entry into force, this Directive too has been amended four times.

In this paper, we discuss first the results the Directive has achieved between 1996 and 2021, following the formalized European procedure of an Evaluation, covering the criteria of efficiency, effectiveness, relevance, coherence, and EU added value.

The paper then looks at the future: in light of advances in technology and new policy priorities (mainly in the field of environmental and safety performance), a recast of the Directive is needed, with the aim of finding the ever more difficult balance between those priorities while still striving for the achievement of the Single Market.

The study that forms the basis of this paper consisted of literature review, a consultation of available quantitative data sources (Eurostat primarily) as well as surveys and interviews with stakeholders.

2. Evaluation of the current Directive (Breemersch, et al., Support Study for the Ex-Post Evaluation of Directive 96/53/EC on Weights and Dimensions - Final Report, 2023)

2.1. Objectives & Instruments

The current Directive, which entered into force in 1996, had as its main goals: 1) to strengthen the single market; 2) to protect the infrastructure; and 3) to improve road safety. Later amendments (in 2002, 2015 and 2019) added provisions that supported 2 more goals: 4) to facilitate energy efficiency and reduction of GHG emissions; and 5) to improve the working conditions of HDV drivers.

This resulted in a text that set rules for vehicle dimensions, vehicle component dimensions, axle weights, and other technical requirements for trucks, buses and (semi-)trailers active in national and international transport. The Directive contains numerous derogations and exemptions. This includes the ability for Member states to have different rules applying in their national territories, derogations for road vehicles active in intermodal transport, and specific exemptions for alternatively fueled and zero emission vehicles, and for vehicles with

aerodynamic cabs or other aerodynamic devices. Finally, the Directive also includes rules for the enforcement of these standards vis-à-vis member states.

2.2. Impact on the internal market and transport demand

By harmonising maximum authorised limits for weights and dimensions of HDVs used in cross-border operations, the Directive provided a level playing field among operators, removed technical barriers to conducting cabotage operations and facilitated transport operations. However, the analysis indicates that the Directive has not contributed to effectively removing obstacles between Member States, at least not to the maximum extent possible. While the limits for international transport are the same for all countries, more than half of EU Member States have derogations in place allowing higher mass and/or length limits for national transport or are conducting trials with these – though these derogations cannot be applied in international transport (except for a few cases¹), which is an important limitation of the Directive. In some markets, this has led to an imbalance in the competitive position of domestic versus international operators. Trials did allow Member States to make use of technological advances to improve the efficiency of freight transport, for example through the use of EMS (European Modular System, i.e. vehicles of 25.25m, 60 tonnes). The current rules for maximum Weights and Dimensions in each Member State are summarized in Table 1.

Table 1: Current W&D rules in EU27

Country	W&D limits	Remark
Austria	18.75m, 40t/44t	
Belgium	18.75m, 44t	50t on 6 axles, trials with 25.25m, 60t
Bulgaria	18.75m, 40t	
Croatia	18.75m, 40t/44t	
Cyprus		
Czechia	18.75m, 48t	Trials with 25.25m, 48t
Denmark	18.75m, 44t/56t	General combinations with 5 axles: 44t. Six-axle: 50t, seven-axle or more: 56t. Trials with 25.25m, 60t.
Estonia	18.75m, 40t/44t	Timber transport with 25.25m, 52t
Finland	34.5m, 76t (main network)	General use 18-28 m; 5-axle 44 t, 6-axle 53 t; 4,4 m. EMS between Finland and Sweden 25,25 m; 8-axle 64-68 t 9-axle 68-74 t; 4,4 m EMS national 28 m 9-axle twin tyre 76 t; 4,4 m; EMS2 34,5 m 11-axle 76 t;4,4m Pilots with different type of heavy trucks for forest industry needs 25-34 m 84-100 t 4,4 m
France	18.75m, 44t	
Germany	18.75m, 40t/44t	Trials with 25.25m, 44t Extended semitrailers (+1.28m) allowed
Greece	18.75m, 42t/44t	
Hungary	18.75m, 40t/44t	24m for lorries with 2 trailers
Ireland	18.75m, 44t	Under specific conditions, up to 22m and up to 46t is allowed

¹ Benelux, Finland & Sweden

Italy	18.75m, 40/44t	
Latvia	18.75m, 40t/44t	
Lithuania	18.75m, 40t/44t	
Luxembourg	18.75m, 44t	
Malta	18.75m, 40t/44t	
Netherlands	18.75m, 50t	EMS with 25.25m, 60t permitted
Poland	18.75m, 40t	
Portugal	18.75m, 44t	44 t is applicable for two 20 ft or one 40 ft ISO containers. 60 t is allowed under specific conditions: transportation of woody material, paper, wood paper and ceramic products.
Romania	18.75m, 40t/44t	
Slovakia	18.75m,40t	
Slovenia	18.75m, 40t/44t	
Spain	18.75m,42t/44t	Trials with 25.25m, 60t and 32m
Sweden	25.25m, 44t	Sweden is currently testing longer and heavier HDVs (not only timber transports) - Max length: up to 34,5 metres; Max weight: up to 100 tonnes- Max height: Unregulated

Broadly speaking, three categories of countries can be distinguished:

- **CATEGORY A:** countries following limits as set in the Directive for national and international transport. These include Austria, Bulgaria, Greece, Croatia, Latvia, Lithuania, Hungary, Poland, Romania, Slovenia, Slovakia, Malta and Cyprus (**13/27**)
- **CATEGORY B:** countries accepting higher limits nationally up to 44 tonnes, without EMS. These include Estonia, Ireland, France, Italy, and Luxembourg (**5/27**)
- **CATEGORY C:** countries permitting EMS (at least in trials) and/or standard-length vehicles with a GVW in excess of 40 tonnes. These include Belgium, Netherlands, Sweden, Finland, Czech Republic, Germany, Spain, Portugal, and Denmark (**9/27**)

The figures below show the evolution in transport volume (tkm) between the three groups of countries, split by vehicle cargo capacity. There is a distinct difference in the evolution between the groups, clearly driven by the different rules. Whereas standard 40t vehicles (the norm set by the Directive) are the most common in A countries, heavier vehicles, as allowed by the national rules set in each countries, show the largest share of activity in B and C countries. This shows that, where derogations are in place, they are being used, leading to a difference in the competitive position of transport operators and of transport users between Member States, which is in contradiction with the Directive's objectives.

The growth of transport volumes as a whole did not reveal an apparent correlation with the weight rules in place, but rather with the economic development of the Member States in question. Most countries in group A joined the EU in 2004 or later and experienced higher economic growth around that time, while transport volumes mostly followed this trend, whereas growth has been more moderate in B and C countries. Still, it is worth mentioning that since 2012 (the end of the economic crisis), domestic freight activity has grown by 16.7% in category C countries, but only 12.9% in category A countries – though this is not statistical evidence that W&D limits have contributed to this.

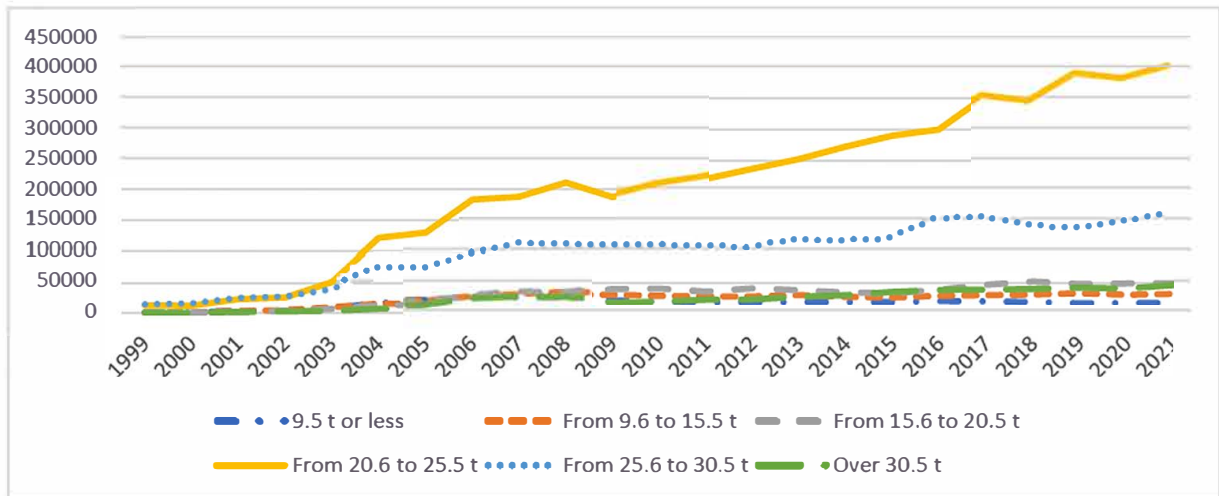


Figure 1: Transport activity (tkm) in category A countries, split by cargo capacity

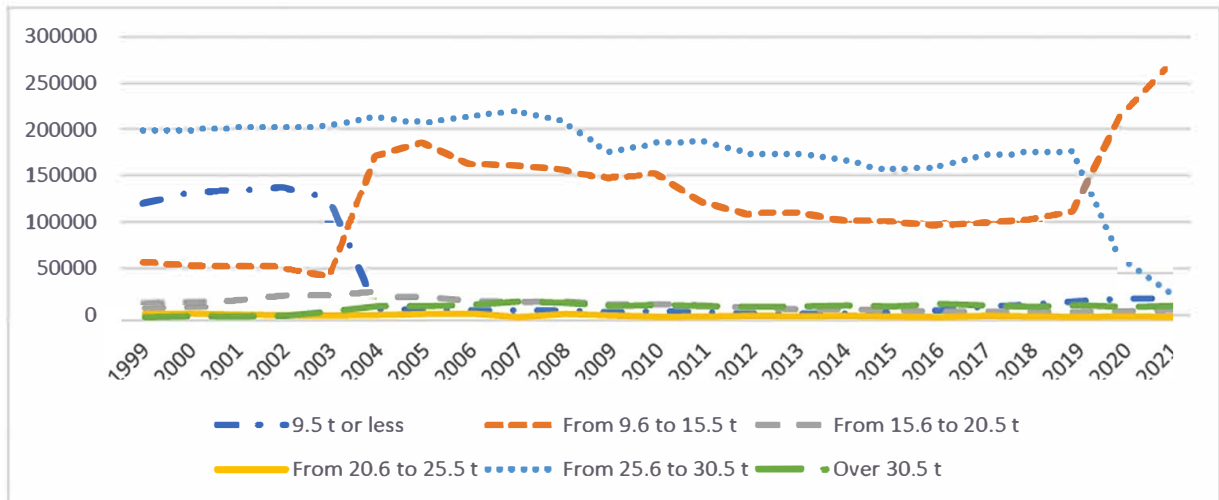


Figure 2: Transport activity (tkm) in category B countries, split by cargo capacity

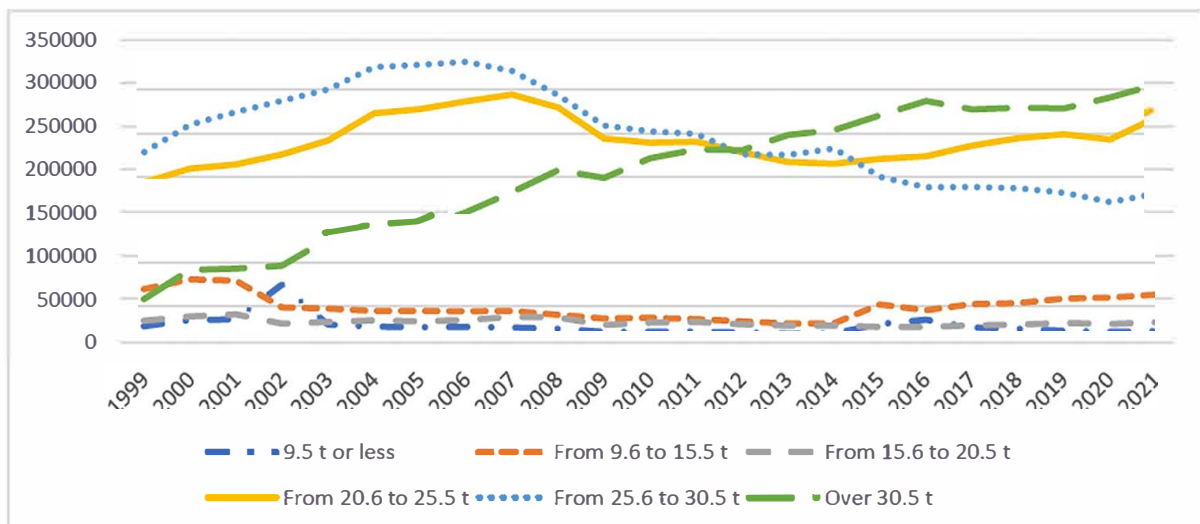


Figure 3: Transport activity (tkm) in category C countries, split by cargo capacity

2.3. Impact on infrastructure

Limited available data suggest that the Directive has not significantly impacted road infrastructure. Where maintenance costs have increased, this is mainly driven by transport activity.

2.4. Impact on road safety and other social aspects

Regarding safety, since the introduction of the Directive, the total number of fatalities and the fatality risk per vehicle and tonne kilometre from collisions involving Heavy Goods Vehicles (HGVs) in the EU27 has declined substantially and generally consistently across nearly all countries. The Directive has been effective at improving road safety, although this effect will have been small in comparison with that of other policies. HGV driver fatalities have reduced over the evaluation period, in line with other safety improvements.

2.5. Impact on uptake of AFV, ZEV and other environmental aspects

Regarding the greening of the fleet, the 2015 and 2019 amendments of the W&D Directive allowed extra weight for Alternatively Fuelled Vehicles (AFV, +1 tonne) and Zero Emission Vehicles (ZEV, +2 tonnes). The current uptake of ZEV for freight transport is still rather limited, but for buses and coaches, sales of new AFV and ZEV currently each represent around 10% of the total market, though this is mainly driven by other policy actions (Clean Vehicles Directive). Operational circumstances, economic costs (TCO) and an insufficient recharging infrastructure currently limit the market potential of ZEV in the road freight market. Similarly, the Directive has not led to a substantial market uptake of trucks with aerodynamic cabs or rear flaps.

However, these provisions are quite recent, and manufacturers indicate that the market uptake is likely to change substantially in the coming years. It is also clear that in terms of improving energy efficiency of transport operations and reducing greenhouse gas emissions and air pollution by encouraging the use of more fuel-efficient and environmentally friendly vehicles, further improvements can, and will have to, be made by the road transport sector and the Directive should contribute to this more.

The Directive facilitated the use of road vehicles in intermodal transport which increased slightly in the evaluation period, but the positive effects of the relevant provision (allowing extra weight of up to 4 t to compensate the tare weight of the loading unit) have been partially annulled by the uncoordinated national measures allowing for the general circulation of 44t HDVs in road-only operations (as is the case in most B and C countries).

2.6. Other considerations

- Enforcement practices differ widely among Member States. Some report a few 100 weight checks per year, others a few million.
- Stakeholders indicate that efficiency of the Directive could have been improved through simplification of administrative procedures and more harmonisation between Member States. Largest benefits were experienced in countries where longer/heavier vehicles were permitted.
- The Directive is and has always been considered relevant, but a revision would need to address the newest challenges faced by the transport sector more strongly (decarbonization, multimodality, automation, digitalization).

2.7. Conclusion on the current Directive

Overall, this leads to conclude that the Directive has proved significant results in the area of the harmonisation of legal obligations in the road transport sector between the different Member States. It has been in place since the 1990s and has undergone several revisions over the years (i.e. it has expanded its scope of geographical application with EU enlargements) and it has refocused its priorities from the key objective of advancing the internal market for road freight transport to splitting the focus with other objectives such as those related to sustainability and multimodality. The cross-cutting objectives of safeguarding road safety and the protection of infrastructure remained a priority at the same time. Going forward, it becomes clear that the Directive will need to remain flexible and both its higher-level objectives and more precise technical considerations will need to be revisited considering changing political and societal proprieties, especially those related to the further greening and digitalisation of the sector where much still remains to be gained.

3. New policy developments (Breemersch, et al., Study for a Possible Revision of the European Legal Framework for Maximum Authorised Weights and Dimensions of Certain Road Vehicles - Final Report, 2023)

3.1. Setup and conditions

The evaluation revealed that the main challenges for a revised Weights & Dimensions Directive were:

- Fragmentation of the market for heavier and bigger (freight) transport vehicles
- Low uptake of ZE HDV and energy-saving technologies and schemes
- Ineffective and inconsistent enforcement of transport rules for HDV

New policy would need to provide solutions to these problems in a balanced manner, reconciling the interests of the wide range of stakeholders (including road transport users and operators, manufacturers, OEMs, infrastructure managers, enforcement agencies, rail and inland waterway transport stakeholders,...) and fitting within the framework of European transport, energy and climate policies (European Green Deal, Fit for 55, Sustainable & Smart Mobility Strategy, HDV CO2 regulation, TEN-T policy, Strategic Action Plan on Road Safety,...).

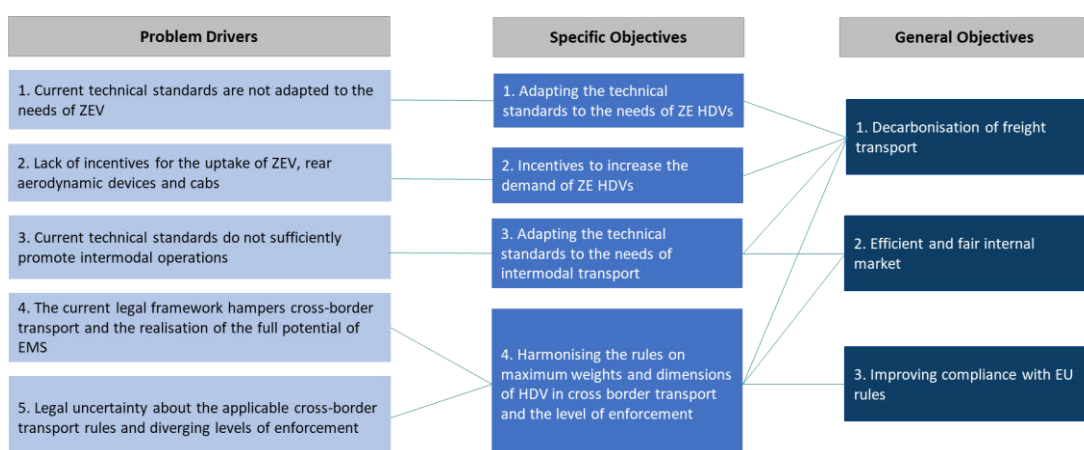


Figure 4: Objectives of new W&D policy

3.2. Policy measures

In this section we list the selected policy measures (numbered PMc1-6, PM1-9) considered as part of the new policy, and discuss their main impacts. Note that some measures are advanced versions of others and do not necessarily combine with all others.

Table 2: policy measures considered for new EU W&D legislation

Specific objective	Policy measure
SO1: Remove barriers for the uptake of ZEV and energy-saving technologies & incentivise intermodal transport	PMc1: Allow for extra length (up to +0.9m) and weight (up to +4t of total GVW and up to +1 tonnes per driven axle) to accommodate ZE technologies without additional payload, including other vehicles such as trailers, dollies and 2-axle rigid buses
	PMc2: Allow for extra height (+0.3m) to accommodate high-cube containers in intermodal transport
	PM1: Allow 4 extra tonnes for HDV which are ZEV regardless the weight of the ZE technology used (to incentivise investment in the newest technologies that will become lighter/smaller, as well indirectly the use of better aerodynamics)
	PM2: Align definition of IT with the Combined Transport Directive (to include semitrailers as intermodal loading units, compatible with rail transport)
SO2: Harmonise the rules on maximum W&D of HDV in cross-border operations	PM3: Allow international (intra-EU) transport of EMS at least in core and comprehensive TEN-T network conditioned to be ZEV or part of an intermodal transport operation
	PMc3: Harmonise maximum permitted weight of 5- and 6-axle HDV in cross-border transport (40t)
	PMc4: Allow cross-border transport of 44t and EMS between "allowing" MS (MS that allow them in national transport)
	PMc5: Harmonise the loaded length of vehicle carriers (20.75m)
	PM4: Set minimum administrative and safety requirements for the transport of indivisible loads (one-stop-shop principle, digitalisation of documents)
SO3: Improve the enforcement of cross-border rules, including for road safety purposes	PM5: Set abnormal transport corridors for indivisible loads up to certain excesses in W&D
	PMc6: Reinforced MS obligation to conduct minimum level of checks of HDV's weight (e.g. minimum % of the overall controls of HDV)
	PM6: Require a minimum amount of Weight-in-Motion (WIM) systems to be deployed in the TEN-T network (every 300Km) for targeting controls
	PM7: Require a minimum amount of "certified" Weight-in-Motion (WIM) systems to be deployed in the TEN-T network (every 300Km) for direct enforcement purposes
	PM8: Set common principles for the voluntary implementation of intelligent access policies (e.g. publicly accessible, non-discriminatory)
	PM9: Require EMS to comply with higher safety standards for HDV than those provided for in the General Safety Regulation (e.g. minimum power engine, sidewarning sensors) and driver's minimum experience or training (e.g. X years of experience driving HDV for which an EC driving licence is required or completing a course according to national requirements)

3.2.1. Decarbonisation

Decarbonisation measures aim to promote the uptake of ZEV by allowing extra cargo capacity. In increasing level of ambition, the range includes

1. A compensation of the extra weight and/or length required by ZEV technology to equalize the payload with fossil fuel vehicles that follow current standards (PMc1)
2. Extra gross vehicle weight (GVW) allowance regardless of the weight and dimensions of ZEV technology (PM1)
3. Permitting high capacity transport (EMS) in international transport for ZEV (and intermodal) only (PM3).

Other measures mostly intend to support intermodal transport, including the use of EMS (PM3 as mentioned above), easier use of high-cube containers in intermodal (PMc2), and the

extension of the weight allowance for intermodal to intermodal semi-trailers (the current directive only allows extra weight to containers and swap bodies, PM2).

Granting equal payload to ZEV by providing an exemption for the weight of the battery or the volume of the H₂ tanks removes the disincentive to use these vehicles, though it is expected that by 2030-2035 technological progress (battery energy density) or other policy (provisions for elongated cabs already remove the length limit) will limit the impact of PMc1, and a major breakthrough of ZEV technology is not expected until that period.

This effect is the opposite in the more advanced PM1, where a weight exemption of 4 tonnes is granted regardless of the weight of the technology, thus providing an extra stimulus to weight reduction (for weight constrained cargo, assumed to be around 40% of the market). Allowing EMS for ZEV, the most ambitious measure, opens the door to a major improvement in productivity to go along with the decarbonization.

An important caveat for measures PMc1 and PM1 is that the extra GVW allowance can only be realized when combined with an increase in the axle weight (of the driven axle). This has a major impact on the costs of road maintenance, which are proportional to the 4th power of the axle weight. In this case, a driven axle of 12.5 tonnes creates 40% higher damage than an 11.5 tonne axle (the current maximum load for a driven axle). Particularly in PM1, which will continue granting the extra axle load when ZEV are expected to form the majority of the vehicle fleet, the costs to road pavement will weigh heavily on the budgets of infrastructure managers.

The measures to promote intermodal transport will make the use of intermodal transport easier and cheaper. While at the level of the individual intermodal trip, the absolute cost savings are moderate, the total cost savings at the EU level can be substantial.

3.2.2. Harmonisation

Under this topic, a number of measures are included that mainly intend to rationalize and streamline current rules, though the practical application is not always straightforward. One of the most requested changes was the option to allow international transport at higher levels than the current directive allows, when both countries allow such transport, following the rules of the strictest application (PMc4). For example, this measure would allow the transport of 44t vehicles between Belgium and France, whereas this is currently restricted to 40 tonnes. It would also allow the use of 25.25m EMS throughout all Scandinavian countries (including Denmark) and e.g. between the Netherlands and Germany, albeit limited to 40 tonnes in this case (as this is the maximum permitted weight of EMS in Germany).

Similarly, the rules for vehicle carriers (PMc5), which are in most Member States granted extra length (in the form of front and/or rear overhangs) in national transport, would be harmonized at the most common application (20.75m), which theoretically allows them to carry up to 28% more cargo (9 cars instead of 7). In practice, most countries do not penalize cross border vehicle transport at this length, but this measure would improve legal certainty most of all.

Another seemingly logical measure is the harmonization of GVW for all vehicles of 5 or 6 axles at 40 tonnes (PMc3). Currently this is only the case for articulated vehicles, so this

measure would extend that rule to rigid vehicles. However, an important complication is that rigid vehicles are typically shorter than articulated vehicles (in this case 12m rigids vs 16.5 articulated vehicles), which has a major impact on the wear and tear of bridges, many of which would need to be reinforced to allow passage of these heavy rigids, at a cost that is estimated at around EUR 7 billion (for the entire EU, over a 25 year horizon). Measures that grant extra weight to ZEV (PMc1, PM1, PM3) would also generate bridge reinforcement costs, but the costs for PMc3 would be the highest.

Other harmonization measures are mainly aimed at streamline the rules and procedures for abnormal transport. A very important precondition for these measures is that infrastructure managers develop and maintain a detailed inventory of the access limitations for the entire network (including weight, length, height, manoeuvrability), as this is not unlike an intelligent access policy, granting easier access to the network provided that the vehicle is suitable.

3.2.3. Enforcement

Current rules on enforcement were found to be unclear, only mandating a certain percentage of total vehicle checks to also include weight, while not setting minimum levels for the percentage or the number of checks – both considered to be at the discretion of the individual Member States. This lead to a major divergence between enforcement levels (number of weight checks) and enforcement practices (manual checks only, Weigh-In-Motion (WIM) for preselection only, WIM for direct enforcement) in different countries.

For a recast of the Directive, three types of measures were assessed, of increasing level of ambition:

1. Reinforcing the obligation for MS to conduct a minimum level of checks, possibly based on a more representative parameter than total number of checks (e.g. a minimum number of checks per tonne km or vehicle km) (PMc6).
2. Mandating the use of WIM for preselection, to be installed on the TEN-T network² every 300 km (PM6)
3. Mandating the use of WIM for direct enforcement, to be installed on the TEN-T network every 300 km (PM7)

Better enforcement should reduce the cost to infrastructure of overloaded vehicles, and improve road safety conditions. By preselecting or directly enforcing with WIM, further benefits can be generated for compliant operators, who no longer use time on unnecessary manual checks. The costs of installing WIM systems (expressed as a net present value for the period 2025-2050) for detection are estimated at around EUR 75 million (EUR 300 000 per system) plus another EUR 70 million in maintenance costs. WIM systems for direct enforcement are estimated to be around 1/3 more expensive, i.e. around EUR 400 000. In principle, as the ambition level increases, so would the share of compliant vehicles, with lower infrastructure costs as a result, though it was not possible to estimate the magnitude of this effect.

Developing a set of common principles for Intelligent Access Policies (IAP) at the European level (PM8) is the first step to the implementation of such policies and potentially towards a

² TEN-T: Trans-European Transport network: primary network throughout EU; road length is around 106 000km, on which 2/3 of freight transport activity takes place.

W&D system using Performance Based Standards (PBS). However, further development of such a system will need to be investigated for the next revision/amendment of the Directive. Allowing EMS on an international scale, as PM3 sets out, would be accompanied by stricter safety measures for these vehicles in PM9. All countries that currently allow EMS in fact already have specific safety rules for these vehicles, but this measure would harmonise them and extend this to all EU countries.

3.3. Combination of measures into policy options

Measures are combined into policy options, with the aim of generating synergies and come to better results than if the measures would be applied separately. 3 policy options (A, B, C) were compiled by the principal of the study, the European Commission's DG MOVE, in increasing order of ambition:

Table 3: Policy options

Specific objective	Num	Policy measure	PO A	PO B	PO C
Common policy measures (PMc) to all policy options					
SO1: Remove barriers for the uptake of ZEV and energy-saving technologies & incentivise intermodal transport	PMc1	Allow for extra length (up to +0.9m) and weight (up to +4t of total GVW and up to +1 tonnes per driven axle) to accommodate ZE technologies without additional payload, including other vehicles such as trailers, dollies and 2-axle rigid buses	X	X	X
	PMc2	Allow for extra height (+0.3m) to accommodate high-cube containers in intermodal transport	X	X	X
SO2: Harmonise the rules on maximum W&D of HDV in cross-border operations	PMc3	Harmonise maximum permitted weight of 5- and 6-axle HDV in cross-border transport (40t)	X	X	X
	PMc4	Allow cross-border transport of 44t and EMS between "allowing" MS (MS that allow them in national transport)	X	X	X
	PMc5	Harmonise the loaded length of vehicle carriers (20.75m)	X	X	X
SO3: Improve the enforcement of cross-border rules, including for road safety purposes	PMc6	Reinforced MS obligation to conduct minimum level of checks of HDV's weight (e.g. minimum % of the overall controls of HDV)	X	X	X
Policy measures (PM) assigned to one or two different policy options (PO)					
SO1	PM1	Allow 4 extra tonnes for HDV which are ZEV regardless the weight of the ZE technology used (to incentivise investment in the newest technologies that will become lighter/smaller, as well indirectly the use of better aerodynamics)		X	
	PM2	Align definition of IT with the Combined Transport Directive (to include semitrailers as intermodal loading units, compatible with rail transport)		X	X
	PM3	Allow international (intra-EU) transport of EMS1 at least in core and comprehensive TEN-T network conditioned to be ZEV or part of an intermodal transport operation			X
SO2	PM4	Set minimum administrative and safety requirements for the transport of indivisible loads (one-stop-shop principle, digitalisation of documents)		X	X
	PM5	Set abnormal transport corridors for indivisible loads up to certain excesses in W&D			X
SO3	PM6	Require a minimum amount of Weight-in-Motion (WIM) systems to be deployed in the TEN-T network (every 300Km) for targeting controls		X	
	PM7	Require a minimum amount of "certified" Weight-in-Motion (WIM) systems to be deployed in the TEN-T network (every 300Km) for direct enforcement purposes			X
	PM8	Set common principles for the voluntary implementation of intelligent access policies (e.g. publicly accessible, non-discriminatory)		X	X

PM9	Require EMS to comply with higher safety standards for HDV than those provided for in the General Safety Regulation (e.g. minimum power engine, sidewarning sensors) and driver's minimum experience or training (e.g. X years of experience driving HDV for which an EC driving licence is required or completing a course according to national requirements)	X
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The analysis of all options considered 10 criteria as part of a multi-criteria analysis, supported by a thorough quantitative analysis of all economic, social and environmental aspects. Each was scored on a scale of -2 to +2. In the end, policy B option was found to provide the best balance between the economic, social and environmental benefits and the costs/investments required to achieve them.

Table 4: comparison of policy options

Criteria	Policy option A	Policy option B	Policy option C
Legal feasibility	1	1	1
Technical feasibility	0	0	0
Political feasibility	1	1	1
Economic impacts	1	2	2
Environmental impacts	1	2	2
Social impacts	1	2	2
Effectiveness	1	2	2
Efficiency	1	1	-1
Proportionality	1	2	-1
Coherence	1	2	2
Total scores	9	15	10

4. Conclusion

European road freight policy on vehicles weights and dimensions is constantly evolving as priorities change, or, more correctly, as more priorities emerge. The objective of harmonization to support the Single Market has always been the primary driver of legislation, but current rules have led to many different national versions of rules, in addition to a lack of incentives to support the green transition.

A recast of the Directive is needed to reconcile all of the various objectives: hamonisation decarbonization, and better enforcement, while improving productivity, preserving the infrastructure and guaranteeing road safety. It remains to be seen whether the newly proposed rules will be able to meet all those demands, as the practical consequences of certain measures go in opposite directions, e.g. promoting the use of zero-emission emission vehicles by increasing their payloads could negatively impact safety and infrastructure.

5. References

Breemersch, T., Knight, I., Rodrigues, M., Daniëls, S., Maerivoet, S., Kiel, J., . . . Schlemmer, L. (2023). *Support Study for the Ex-Post Evaluation of Directive 96/53/EC on Weights and Dimensions - Final Report.*

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