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IMPACT ASSESSMENT

Accompanying the document

**Proposal for a Directive of the European Parliament and of the Council
amending Directive 92/106/EEC on the establishment of common rules for certain types
of combined transport of goods between Member States**

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GLOSSARY OF DEFINITIONS, ACRONYMS AND ABBREVIATIONS

Multimodal transport ¹	carriage of goods or passengers by at least two different modes of transport
Intermodal transport ²	movement of goods (in one and the same loading unit or a vehicle) by successive modes of transport without handling of the goods themselves when changing modes. It is hence a type of multimodal transport
Combined transport	According to OECD glossary : "intermodal transport where the major part of the journey is by rail, inland waterways or sea and any initial and/or final leg carried out by road are as short as possible"; however "combined transport" through the text is defined by the Combined Transport Directive
CMR	" Convention relative au contrat de transport international de m archandises par r oute" - Convention on the Contract for the International Carriage of Goods by Road
e-CMR	electronic-CMR ³
CIM	"Convention I nternationale concernant le Transport des M archandises par Chemins de Fer" - Uniform Rules Concerning the Contract of International Carriage of Goods by Rail
CT	combined transport
HGV	heavy duty vehicle
CJEU	Court of Justice of European Union
EU	European Union
GDP	Gross domestic product
GHG	Greenhouse gas
IWW	inland waterways
SSS	short sea shipping

¹ OECD Glossary of Statistical Terminology, referring to original definition by European Conference of Transport Ministers, <https://stats.oecd.org/glossary/detail.asp?ID=4303>

² OECD Glossary of Statistical Terminology – see above

³ <https://www.unece.org/fileadmin/DAM/trans/conventn/e-CMRe.pdf>

tkm	tonne-kilometres
bn	billion
ro-ro	Roll-on / roll-off
lo-lo	Lift on / Lift off

1. INTRODUCTION AND CONTEXT

The reduction of the negative impact of transport activities remains one of the main goals of EU transport policy supported by a range of different EU actions aimed at optimising the transport system and improving its efficiency, at scaling up the use of low-emission alternative energy for transport and moving towards zero-emission vehicles⁴. Incentivising a shift towards lower emission transport modes such as inland waterways, short-sea shipping and rail is one of those actions and the 2011 White Paper⁵ on transport already defined, as part of its general strategy for more sustainable transport, a target for shifting 30% of the projected volumes of road freight transport above 300 km to other modes of transport by 2030.

For such a modal shift in the freight sector, the main alternative to road transport for non-bulk items is constituted by **intermodal transport**, where load units such as containers are transhipped between the modes as opposed to manual un- and reloading of goods. Despite the potential of intermodal transport especially over longer distance journeys, road only transport however remains the first choice of shippers even over longer distances above 300km : 56% of road freight transport still takes place on long distances. Under the right conditions (i.e. available infrastructure for intermodal transport, sufficient level of services and competitiveness of intermodal transport) this volume could be shifted away to other modes of transport leaving only the last mile for road transport. Unfortunately, this is not the case today

While other complementary measures at EU or Member States level aim at improving specific aspects of negative externalities through regulation, obligations and taxation, the current initiative is about updating the Combined Transport Directive⁶, the only legal instrument directly supporting intermodal transport: adopted in 1992 it focuses on a portion of intermodal transport with limited road legs, and specifically defines it with the term **combined transport (CT)**. The Directive originally aimed at removing certain regulatory obstacles and making intermodal freight transport more attractive compared to road transport in a situation where the market is not providing price signals that correspond to socially desirable outcomes⁷. While the Directive does not create any obligations on economic operators, it provides since 1992 a framework and the conditions for authorities to simulate the uptake of combined transport. However some of these conditions, e.g. the use of paper transport documents and stamps as a proof of eligibility for Combined Transport, and the freight market environment have evolved quite substantially in the last 25 years : some of the provisions of the Directive can no longer be applied and need to be updated.

1.1. Policy context

The priorities of the current Commission reiterate the importance of sustainable growth. Transport activities continue to generate large negative side effects such as local air pollution, greenhouse gas emissions, accidents, noise and congestion. These are largely ‘external costs’ or ‘negative externalities’ since they cause considerable costs for society, estimated at 4% of

⁴ COM(2016) 501 final (Low-Emission Mobility Strategy)

⁵ COM(2011) 144 final (2011 White Paper)

⁶ Council Directive 92/106/EEC

⁷ Indeed, many of the negative impacts that are generated by road transport can be qualified as ‘negative externalities’, which gives road-only transport an undue advantage over more sustainable choices

EU GDP in 2008⁸, but only in part are borne by the users. The large majority of these externalities⁹ are caused by the road sector which dominates the freight transport market (49% of overall freight volume in the EU and 75% of inland freight transport are carried on road).

As already underlined in the 2011 White Paper, and reminded in the EU Low-Emission Mobility Strategy, reducing the negative impact of transport activities requires a mix of complementary measures and joint efforts and support by all stakeholders. Existing EU policies for sustainable transport were notably adopted in the context of the 2020 Energy and Climate Policy Framework (e.g. the revised Directive on the European Emissions Trading System) and the 2011 Transport White Paper. They cover mainly the following three areas:

(1) "low emission vehicles": with European Regulations setting CO₂ targets for new passenger cars and vans¹⁰, with the Car Labelling Directive¹¹, the Clean Vehicles Directive¹² or the Weights and Dimensions Directive¹³,

(2) "switching towards low emission alternative energy for transport" : with legal instruments such as the Renewable Energy Directive (RED)¹⁴; the Fuel Quality Directive (FQD)¹⁵, the Directive on the deployment of alternative fuels infrastructure¹⁶ or the Electricity Market Directive¹⁷; and

(3) "efficiency of the transport system": with legal instruments notably addressing the internalisation of external costs, such as the Eurovignette Directive¹⁸, or aiming to optimise the traffic management and traffic flows such as the ITS Directive¹⁹, or directly supporting the shift from road freight transport to other modes of transport such as the **Combined Transport Directive**²⁰ or the Marco Polo Programme²¹.

Other existing policies and measures aiming at building a Single European Transport Area and completing a competitive and resource efficient European transport system have important co-benefits in terms of reduction of externalities, and most notably to promote the shift to more sustainable modes of transport. These include notably the Regulations²² providing for the market access to the international road freight and passenger market; the

⁸ CE Delft et al. (2011), External Costs of Transport in Europe – Update Study for 2008, available at http://www.cedelft.eu/publicatie/external_costs_of_transport_in_europe/1259

⁹ 72% of GHG emissions, 97% of accidents

¹⁰ Regulation (EC) 443/2009 and Regulation (EU) 510/2011

¹¹ Directive 1999/94/EC

¹² Directive 2009/33/EC

¹³ Directive 96/53/EC amended by Directive 2015/719/EU

¹⁴ Directive 2009/28/EC

¹⁵ Directive 2009/30/EC

¹⁶ Directive 2014/94/EU

¹⁷ Directive 2009/72/EC

¹⁸ Directive 2011/76/EU amending Directive 1999/62/EC

¹⁹ Directive 2010/40/EU

²⁰ Directive 92/106/EEC

²¹ Regulation (EC) No 1692/2006

²² Regulations (EC) No 1072/2009 and (EC) No 1073/2009

Regulation for the establishment and organization of international Rail Freight Corridors²³ and the Directive on the Single European Rail Area²⁴; the River Information Service (RIS) Directive²⁵ aiming to support inland waterway transport and to facilitate interfaces with other transport modes; the Regulation²⁶ setting Union guidelines for the development of the trans-European transport network setting Trans-European Transport Network (TEN-T) policy implementation.

Finally EU financing and related instruments such as the Connecting Europe Facilities (CEF)²⁷, the European Structural and Investment Funds (ESIF), or the European Investment Bank (EIB) play an important role in for the development of the European transport infrastructure.

In this context, while technology and all these EU policies and legislation on transport, energy and climate have achieved a reduction of emissions per tonne-kilometre, the road externalities remain higher than in other modes and congestion continues to increase and a greater use of alternatives to road transport is therefore also necessary.

A specific target for such modal shift has been set in the 2011 White Paper on Transport: to shift by 2030 30% of long distance road freight (over 300 km) to rail or waterborne transport, and more than 50% by 2050. This would inter alia contribute to the achievement of the target aiming at reducing greenhouse gas emissions from transport by mid-century to a level 60% lower than that in 1990, reconfirmed recently in the EU Low-Emission Mobility Strategy²⁸. The latter also concluded that the reduction of air pollution from the transport sector is an important factor for achieving the commitments under the Paris Agreement on climate change²⁹ and in line with the 2030 Agenda on Sustainable Development³⁰.

More recently, the "Europe on the Move Communication"³¹ presented the road contribution for "a socially fair transition towards clean, competitive and connected mobility for all". It was accompanied by a series of measures and proposals (e.g. revision of Eurovignette Directive, recast of the Directive on interoperability of electronic toll system, revision of regulations on market access and on working conditions for the road haulage sector, as well as steps to lay the ground for cooperative, connected and automated mobility) and will be complemented by other proposals, including the amendment of the **Combined Transport Directive**.

The Combined Transport Directive is not considered as a standalone instrument that supports modal shift in freight transport through the promotion and development of combined transport. As explained above, it is one of the key elements in a package of EU measures

²³ Regulation (EU) No 913/2010

²⁴ Directive 2012/34/EU

²⁵ Directive 2005/44/EC

²⁶ Union guidelines for the development of the trans-European transport network

²⁷ Regulation (EU) No 1316/2013

²⁸ A European Strategy for Low-Emission Mobility, COM(2016) 501, available at https://ec.europa.eu/transport/sites/transport/files/themes/strategies/news/doc/2016-07-20-decarbonisation/com%282016%29501_en.pdf

²⁹ http://unfccc.int/paris_agreement/items/9485.php

³⁰ <https://sustainabledevelopment.un.org/post2015/transformingourworld>

³¹ COM(2017) 283 final

aimed at the development of multimodal transport and hence contributes to the reduction of externalities, in particular reduction of GHG emissions, air pollution, energy consumption and congestion.

From a road transport regulation viewpoint, and as reminded above, it is worth noting the direct interaction of the Combined Transport Directive with the Weight & Dimension Directive and with the Regulation (EC) 1072/2009 on access to international road transport market:

- the Weights and Dimension Directive complements the Combined Transport Directive by allowing heavier loads for combined transport to counterbalance the disadvantage of the weight of the transferrable load unit
- the Combined Transport Directive includes an exemption from the cabotage restrictions provided for in Regulation (EC) 1072/2009. .

In addition, when considering financing investment in transport infrastructure, it is important to remind that the EU Competition rules and most notably State Aid rules remain of application, especially when Member States decide to support unilaterally, through national programmes, combined transport, in the absence of dedicated regulatory framework for support.

1.2. Legal context: rationale for the Combined Transport Directive

The Council Directive 92/106/EEC on the establishment of common rules for certain types of combined transport (known as the Combined Transport Directive) was adopted on 7 December with the original intention to improve the sustainability of the EU transport system through modal shift from road to rail and waterborne transport. It was meant to do so by lifting existing regulatory obstacles and increasing the competitiveness of international intermodal (and more specifically "combined") transport vis-à-vis road only freight transport.

As the only EU legal instrument in place that directly supports intermodal freight transport, the Directive did not impose obligations on economic operators but rather introduced support measures for strictly defined ("combined") intermodal transport operations³². Those measures were split between:

- "regulatory" support measures : measures a) safeguarding the freedom to provide the cross-border service, i.e. preserving combined transport from possible national protectionist restrictions (authorisation schemes, regulated tariffs and quotas), b) exempting the road legs of international combined transport from the road cabotage limitations under Regulation (EU) and c) allowing, through cross-reference with the Weights and Dimensions Directive (53/96/EC), heavier loads for vehicles used in intermodal transport road legs to compensate for the tare weight of the load unit as well as use of 45 foot containers;

³² The non-road legs have to be at least 100km, while the road legs are limited to distances to nearest suitable station when connecting to rail or 150 km when connecting to waterborne transport. It also includes a closed list of eligible load units and conditions on proof of eligibility (transport documents).

- "economic" support measures: providing selected fiscal incentives and an extension of the definition of the own-account transport. These were meant to partially correct the unbalance between combined transport and road-only transport caused by the existence of negative externalities not fully reflected in the price of road freight.

Historically the 1992 Combined Transport Directive built on, and extended to road/waterborne the original 1975 road/rail combined transport legal instrument³³. In 1998, and building on report by the Commission, the Commission adopted a proposal³⁴ to amend the Combined Transport Directive and the Weights & Dimension Directive. The proposal focused, already at that time, on the need to simplify the Directive, and most notably the definition of Combined Transport and related conditions for eligibility. Despite the relevance of the proposal, it was withdrawn³⁵ in December 2001 due to a negative opinion of the European Parliament, mainly concerning the proposal to amend the Weights & Dimension one. Since then however, the European transport policy has evolved notably fuelled by the 2011 White paper, and notably a specific target for modal shift of road freight transport above 300 km. In parallel, and notably under the Paris Climate agenda, environmental considerations have pushed a drive towards even more low emission mobility. Finally with the advent of new technologies, notably the growing pervasiveness of modern ICT tools and the digitalisation of business processes, some of the provisions of the 1992 (e.g. the use of paper and stamps to certify transport documents) have become outdated and need to be reviewed.

1.3. Outcome of REFIT evaluation

A REFIT evaluation³⁶ of the Directive was carried out in 2014-2016 and concluded that the Directive continues to be a relevant instrument for supporting combined transport. It was established that without EU action, cross-border Combined Transport services would likely be faced with barriers resulting from different legal systems, making Combined Transport services less attractive and possibly unfeasible. The evaluation underlined that Combined Transport helps to reduce negative externalities through modal shift: as illustrated in table below³⁷ it was estimated that the shift from road to intermodal transport induced by the Combined Transport Directive has brought along an annual saving of up to €2.1 billion in external costs. More specifically the evaluation reported that the shift from road to rail/road combined transport saved in 2011 (compared to road only) 7.3 Mt of CO₂, while the shift to inland waterways saved 0.96 Mt of CO₂ in the same year.

Heavy goods vehicles	
External costs	Inter-urban
Accidents	410
Noise	73
Congestion	661
Air Pollution	607

³³ Directive 75/130/EEC

³⁴ COM(1998) 0414/1 and COM(1998) 0414/2

³⁵ COM(2001) 763 final/2

³⁶ SWD(2016) 140

³⁷ From REFIT evaluation Report (see above)

Climate change	366
Total external costs	2118

Table 1. Total external cost savings for CT non-road legs otherwise being carried out by HGV (million EUR, in 2010 constant prices - *Source: REFIT evaluation – based on PRIMES-TREMOVE Transport Model*)

As pointed out in the evaluation, the freight transport market has evolved significantly since 1992 with the globalisation of the world economy and in particular the spread of global supply chains which has generated a considerable increase in freight transport volumes in the world and in the EU. The enlargement of the EU from 12 to 28 Member States has also further influenced the trade flows and therefore the transport market of the EU. These trends have supported the continuous growth of the transport volumes in the EU, including growth of Combined Transport. In addition some technical developments during the last 25 years can be assumed to have influenced multimodal transport more than single modal transport. In particular the widespread use of containerized transport can be seen as having supported intermodal transport, while the greater use of ICT have made it easier to plan and execute multimodal journeys.

Considering the benefits of the Combined Transport Directive and the freight transport market development since 1992, the evaluation showed that there is significant margin for further improving the effectiveness of the Directive, owing to the fact that some of its **provisions are outdated, its language is sometimes ambiguous, and its scope is limited**. The shortcomings relate in particular to the definition of Combined Transport, the limitations of fiscal incentives and the outdated provisions relating to transport documents.

In addition, the transposition and implementation of the Directive has been somewhat problematic. While the Directive has been transposed into national legislation by most Member States, the **quality of transposition is not homogenous**. Both the analysis by the Combined Transport Study as well as the public consultation highlighted that considerable differences exist in the implementation of the Combined Transport Directive. Some Member States' legislation seems to miss parts of the measures, while in others the chosen language is not in full conformity with the Combined Transport Directive or allows contradictory or misleading interpretation. The Commission has started several EU-Pilots and one infringement case, both where complaints have been launched by industry as well as to clarify the state of play of the transposition.

2. WHAT IS THE PROBLEM AND WHY IS IT A PROBLEM

2.1. The general problem: limited and slow uptake of intermodal transport

The White Paper on Transport in 2011 set a clear target for modal shift of long distance road freight with an aim to reduce effectively the negative externalities of the transport sector. It also concluded, similar to the conclusions of the 1992 White Paper on Transport, that adequate interventions are needed to create conditions in which the industry could and would use intermodal transport instead of road only transport : investment into intermodal networks, regulatory intervention to ensure the internalisation of external costs as well as fair treatment of intermodal transport, and direct support to intermodal transport to counterbalance the inherent cost disadvantages of the complex intermodal transport chain.

As explained in the REFIT Evaluation Report³⁸, intermodal freight transport has grown significantly between 1990 and 2011, with a doubling of volumes in TEU, and a significant increase (55%) between 1990 and 1994, notably due to the adoption and implementation of the Combined Transport Directive. In the recent "CT Update Study"³⁹, the figures on the evolution of intermodal freight transport from 2011 and 2015, calculated based on an updated methodology, seem to demonstrate a higher share of intermodal transport as compared to the 2015 CT Study⁴⁰ used for REFIT, but nonetheless confirm the estimated annual growth rate of intermodal freight transport of 3.5% provided in the REFIT Evaluation report. Table 2 below illustrates the relative importance of the various intermodal transport types, i.e. road/rail Vs road/IWW and road/SSS as provided in that same study.

However, despite this evolution, the modal shift observed in European freight transport does not seem to evolve fast enough in the desired direction, i.e. towards most environmental friendly modes, as illustrated in the recent EUROSTAT figure for the years 2011 to 2015. This evolution seems to be confirmed by the projections of the transport reference scenario⁴¹ which show that the modal shift target set in the 2011 White Paper will not be met by 2030 (see more detail in Section 3.1. Baseline).

2015	Intermodal Transport		CT in EU as covered by directive 92/106/EEC	
	t moved (bn tkm)		t moved (bn tkm)	
	Total	%	Total	%
Rail/Road CT (a)	163	26%	98	38%
IWW/Road CT	16	3%	11	4%
Shortsea/Road CT	436	71%	147	58%
Total	614	100%	256	100%
CT involving more than two modes	44	7%	15	6%

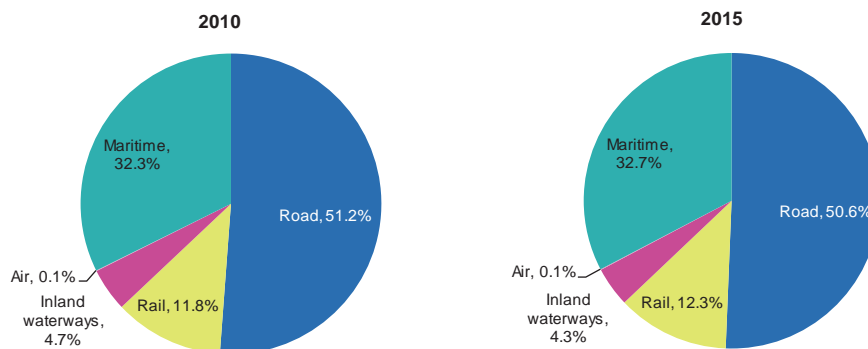
Table 2. Split, per modes) of Intermodal Transport and of CT as covered by the CT Directive in 2015 - *Source: CT Update Study 2017*

³⁸ SWD(2016) 140 final, section 4.2, Figure 4 and Annex V and VI

³⁹ ISL+KombiConsult (2017), Updating EU combined transport data – Final Report)

⁴⁰ KombiConsult et al (2015), Analysis of EU Combined Transport market, <http://ec.europa.eu/transport/sites/transport/files/themes/strategies/studies/doc/2015-01-freight-logistics-lot2-combined-transport.pdf>

⁴¹ EU Reference Scenario 2016, Energy, Transport and GHG emissions, Trends to 2050, https://ec.europa.eu/energy/sites/ener/files/documents/20160713%20draft_publication_REF2016_v13.pdf



Note: Air and maritime cover only intra-EU transport (transport to/from countries of the EU) and exclude extra-EU transport

Source: Eurostat (online data codes: rail_go_typeall (rail), iww_go_atygo (inland waterways), road_go_ta_tott (national road transport), road_go_ca_c (road cabotage transport); Eurostat computations (international road transport, air and maritime transport).

Figure 1 : Freight transport in the EU-28: modal split based on five transport modes (% of total tonne-kilometres)

A fundamental reason for the relatively limited uptake of intermodal transport, and hence slower than expected modal shift, is that the framework conditions for intermodal transport are and remain considerably less advantageous than those for road-alone transport (see problem tree in figure 2 and Section 2.1.1). This makes intermodal transport less competitive than road only transport, especially on shorter distances, as explained in the REFIT report.⁴² The main challenge, as regards cost competitiveness, is, for each types of intermodal transport, to bring down that "break-even" minimal distance.

The low uptake of intermodal transport is also due to the insufficient density and capacity of the needed intermodal infrastructure . The effects of the Combined Transport Directive have been modest and could be improved.

⁴² SWD(2016) 140 final – Section 5.3 "According to the CT Study, the minimal transport distance in order to be able to compete with road transport (without support measures) is: inland navigation 50 km, rail 250 km and short sea 350 km"

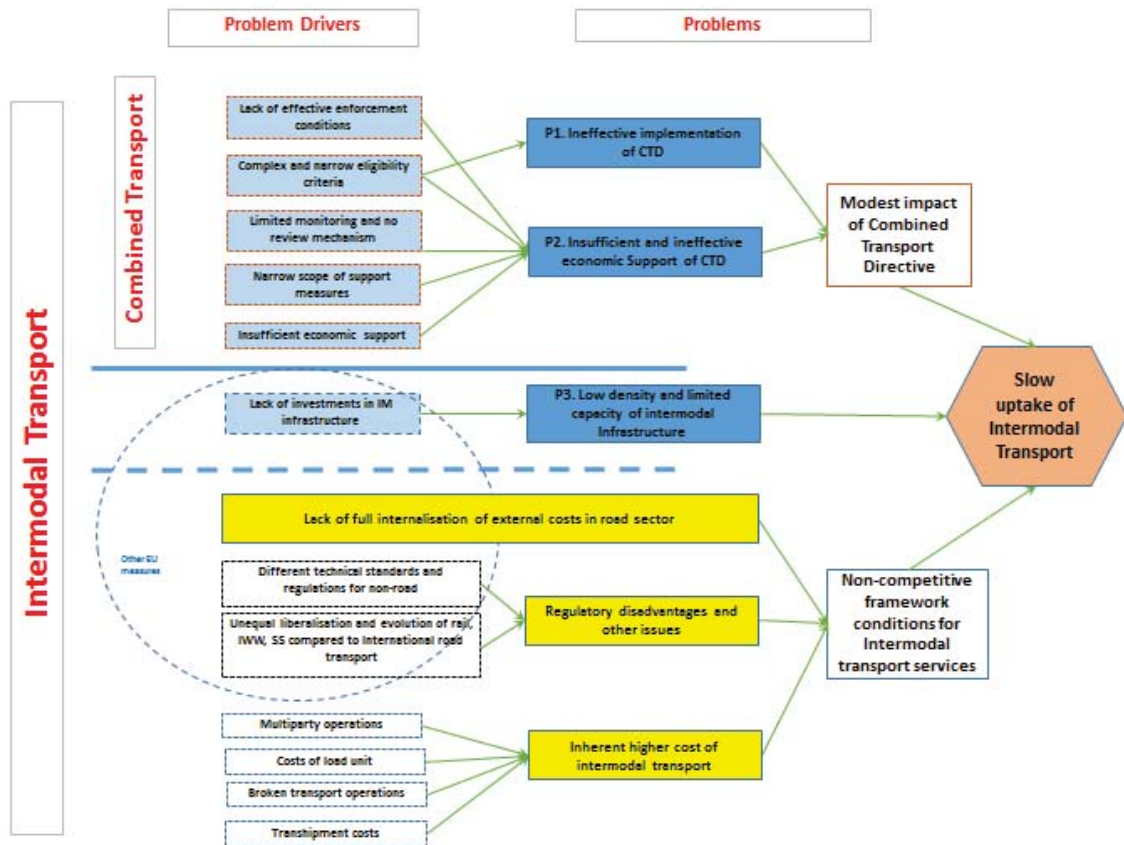


Figure 2: Problem tree

As further explained below, and despite the TEN-T Guidelines and related CEF funding for the European transport infrastructure, the required level of interventions has been insufficient so far for achieving equal footing for intermodal transport with unimodal road transport and thus for ensuring sufficient modal shift.

After 25 years, the infrastructure considered necessary to ensure intermodal transport is lacking in many parts of Europe, or does not have sufficient capacity; intermodal transport services remain non-competitive with road only transport due to inherent disadvantages of intermodal transport, limits in the full internalisation of external costs, and there are still barriers hindering operations between Member States for non-road transport legs that reduce efficiency of intermodal transport. In short, the conditions for intermodal transport in the EU do not support modal shift.

2.1.1. *Non-competitive framework conditions for Intermodal transport services*

Intermodal transport services often remain non-competitive, in terms of price, efficient operation or reliability compared to road transport despite the measures taken through both the Combined Transport Directive and other EU legislations (e.g. Eurovignette Directive) to support the needed modal shift and address other causes discussed in detail below. These measures have not always been as effective as they could have been due to their technical complexity or because of political sensitivities.

2.1.1.1. Higher inherent cost of Intermodal Transport

There are several factors inherent to intermodal transport that can be translated into additional costs for the operators and users, or other disadvantages for intermodal transport in terms of e.g. delivery times or reliability. These disadvantages are addressed partly through the Combined Transport Directive's economic support (that is currently ineffective, see section 2.2.2.) and partly through other EU measures as described below.

Thus the majority of root causes of uncompetitive intermodal transport, discussed in detail below, continue to aggravate the problem resulting in intermodal transport being considerably more expensive for the shippers. Figure 3 below illustrates, based on cost figures from the 2017 Survey study⁴³, the costs incurred by shippers when choosing for intermodal (rail-road) transport (without the benefits from Combined Transport Directive) (i.e. respective parts of cost from road part, non-road part, transshipment, reduced load capacity, cabotage restrictions and additional costs) compared to road transport only.

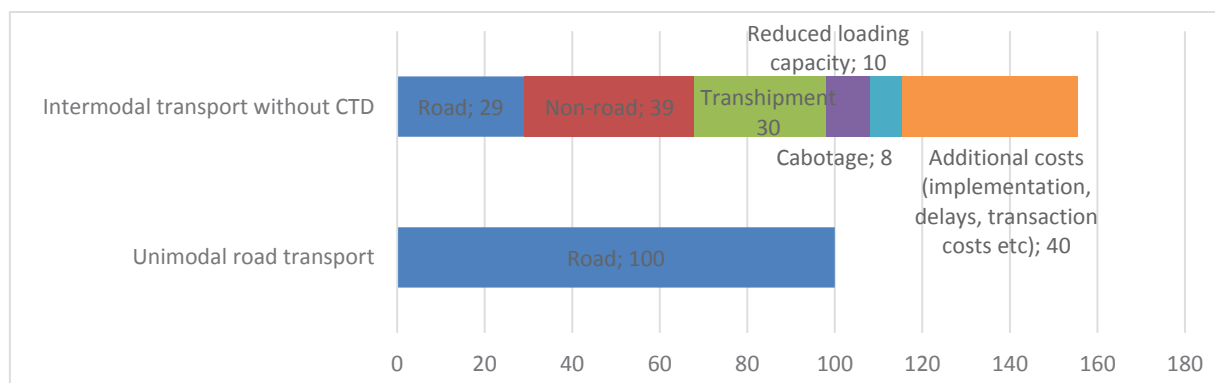


Figure 3. Cost comparison of road only and intermodal transport, percentage of cost components (without CT Directive, based on medium to long rail-road transport)

Transshipment

In an intermodal transport operation, the load unit needs to change the transport modes and thus necessitates transshipment. In 2015, there were estimated 66.8 million transshipments in the EU with an average 2.2 transshipments during rail-road intermodal transport operations, 1.7 transshipments during inland waterways-road intermodal transport operations and 2 transshipments during short-sea-shipping intermodal transport operations (excluding transshipments to and from ocean going vessels and Combined Transport operations). The transshipment costs vary considerably between Member States and modes of transport with the average cost being around 50€ per lift⁴⁴. However, an additional important element to remember is the fact that, for transshipment to be possible there is an underlying high fixed cost due to required initial transshipment equipment in the intermodal terminal. This high fixed cost of transshipment will have to be compensated by lower costs per ton-km. This in effect explains the limitations of the modal shift potential for long haulage transport: as illustrated on table 4 below, the average non-road leg of e.g. rail/road intermodal transport is 615 km.

Additional costs and delays due to multiparty operation

⁴³ TRT (2017) – Gathering additional data on EU combined transport – Final report

⁴⁴ TRT (2107) - Gathering additional data on EU combined transport – Final Report – NOTE : all cost figures in this section come from this study

An intermodal operation includes by definition a considerably more complex transport chain than any single mode transport operation. The disadvantages deriving from a complex operation include contractual and transaction costs for organising and carrying out multiparty operations (estimated at 85€/shipment), costs of delays resulting from the need to transfer the load units between modes, difficulties in tracking and tracing the shipment between the various modes and responsible operators (estimated at 10€/shipment) and costs from other external factors⁴⁵. The main cost factor for shippers and Combined Transport organisers (logistics companies, freight forwarders, Combined Transport operators etc.) is the longer delivery times (caused by longer routes, transshipment related delays and other delays caused by multiparty operations, average 150€/shipment) followed by transshipment costs (average 100€/shipment)⁴⁶. *The industry stakeholders responding to the targeted consultation*⁴⁷ also identified journey time and price as two of the top-three impediments for the use of intermodal transport, with no suitable services (connection or terminal) as the most crucial of the three.

Cost and weight of the load unit

An additional disadvantage and cost factor for intermodal transport is the fact that a separate load unit is used. First, the load units itself require either an investment or involve leasing costs. Secondly, as the maximum weights and dimensions are regulated in the EU for the road leg and a load unit has its own empty weight on top of that of the lorry and goods, the load capacity of intermodal transport is ca 10% lower. This problem is partly addressed through the higher weights allowed for containerised intermodal transport in the Directive 96/53/EEC (Weights and Dimensions)⁴⁸ allowing additional 2 or 4 tonnes depending on the vehicle. This extra weight does not create a real benefit as for most load units the additional allowance does not cover or barely covers the weight of the empty load unit and no extra weight is allowed for other intermodal load units. Thus this benefit rather compensates for the weight of the load unit allowing comparable loading capacity, while not creating the damage to infrastructure connected to mega-trucks as on short road leg distances the 10% additional weight creates little problems.

The definition used in the Weights and Dimensions Directive refers directly to Combined Transport Directive and thus any change in the definition of combined transport in the Combined Transport Directive will also change the eligibility of operations as regards the increased weights and dimensions. Similarly, a new restrictive definition in the Combined Transport Directive would exclude large parts of intermodal transport from this compensatory additional weight. The industry stakeholders raised the latter as their major concern in regard to the currently planned amendment of the initiative.

Broken transport operation with different regulation applying to different parts

An intermodal transport operation is subject to different modal rules on different parts of the operation. In particular, for international "combined" transport, the Directive also ensures that no additional layer of authorisation or quantitative restrictions is applied as such. A particular

⁴⁵ Such as terminal capacity, transshipment time, frequency of trains or sailings (depending on non-road operators preferences) etc.

⁴⁶ TRT (2017) – Gathering additional data on EU combined transport – Final report

⁴⁷ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

⁴⁸ Directive (EU) 2015/719

problem relates to the existing cabotage restrictions⁴⁹ for national road transport: some stakeholders perceive the road legs of intermodal transport, though parts of an international operation, as being national operation. However the Combined Transport Directive establishes that the road legs of an international Combined Transport operation can be carried out by non-resident hauliers even when the road legs do not cross a border, setting it at bar with international road transport that is the competitor for this type of operation. This has been confirmed several times by CJEU rulings⁵⁰. According to the open public consultation, in case of removal of this *expressis verbis* confirmation from the Directive, large parts of combined transport would reverse back to road only international transport as the inability to use the subcontractor freely would increase the cost by 3-15%.

Figure 4 below further details, based on the cost figures of the referred 2017 study⁵¹, the split of average additional cost incurred when operating intermodal transport because of organisational issues, longer delivery times, transshipment costs, traceability difficulties, or lack of harmonisation of procedures or documents.

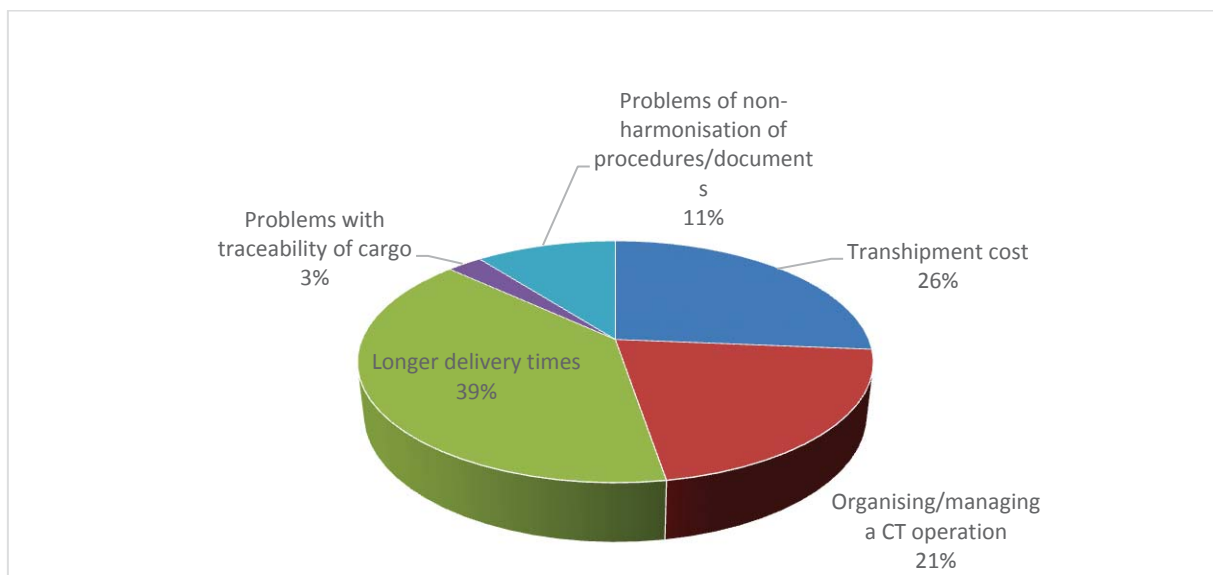


Figure 4: Estimated additional average cost proportion for an intermodal transport per shipment as compared to road only transport

All these costs components vary based on the non-road mode of the intermodal operation, and on its total length as illustrated in Annex 5.

⁴⁹ Regulation (EC) No 1072/2009

⁵⁰ Between 1989 and 1994, the CJEU has ruled in 3 consecutive cases that a Combined Transport operation has to be seen as one single international transport operation and thus the road legs, even if not crossing a border cannot be seen as national transport, and hence cabotage limitations cannot be applied to CT road legs. However, industry faces problems to this date. Several additional CJEU cases deal with additional licensing requirements established on combined transport, with the location of suitable terminal and transit issues etc.

⁵¹ TRT (2017) – Gathering additional data on EU combined transport – Final report

2.1.1.2. Lack of full internalisation of external costs in the road sector

The competitive position of intermodal transport is further jeopardized by the fact that transport prices today do not reflect the full extent of external costs and thus road transport can offer low prices with high cost to society.

A detailed inventory on internalisation of external costs in the transport sector established that the costs of the road sector are covered to 38% by different internalisation measures (not including congestion costs). The level is very different in different Member States (see Figure 5).

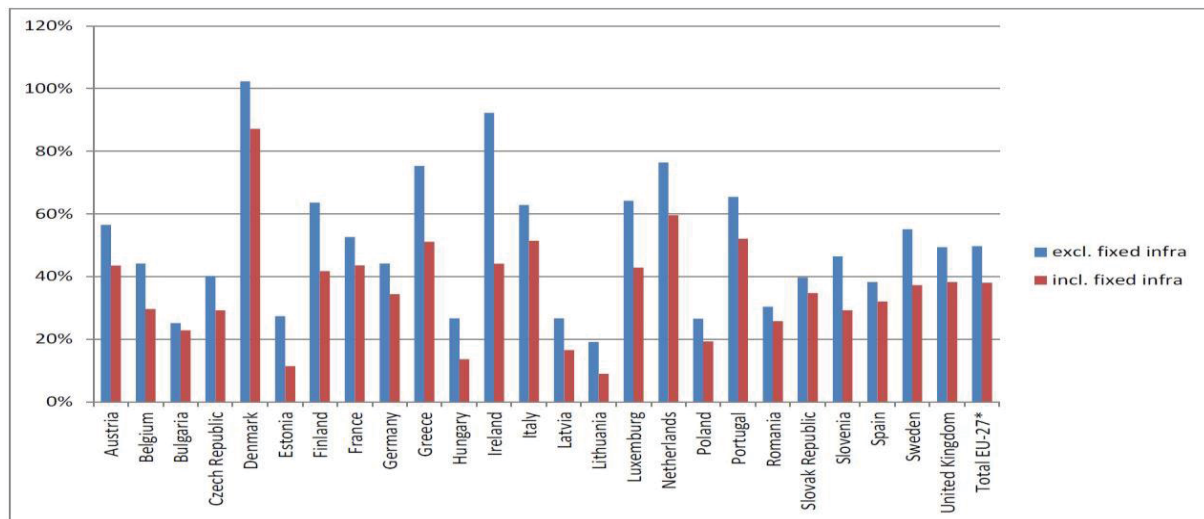


Figure 5: Indicative cost coverage ratios for road transport⁵²

The EU has supported the implementation of the "polluter pays" principle for a while. It is argued that if the prices of different modes would reflect the external cost to society, the competitive position of road against the other modes would change and it would become more economical to use rail, inland waterways or short sea shipping transport instead.

The main instrument is the so-called "Eurovignette" Directive 1999/62/EC, as last amended by Directive 2011/76/EU⁵³. It provides a legal framework for road charging systems for heavy goods vehicles (HGV) and contains specific provisions on the calculation and allocation of infrastructure and environmental costs. However, the current Eurovignette Directive provides only a possibility for and not an obligation to introduce such charging schemes and furthermore does not foresee charging for congestion and accident costs. As part of the "Europe on the Move" communication adopted in May 2017, the Commission adopted a proposal⁵⁴ for amending the Eurovignette Directive which includes ambitious measures. However, according to the impact assessment, it is expected to mostly influence the choice of vehicles and not so much the choice of transport mode and the actual modal shift from road to

⁵² An inventory of measures for internalising external costs in transport, 2012, Transport & Mobility, TNO, CE Delft and TRT, available at <http://ec.europa.eu/transport/sites/transport/files/themes/sustainable/studies/doc/2012-11-inventory-measures-internalising-external-costs.pdf>

⁵³ Directive 1999/62/EC of the European Parliament and of the Council of 17 June 1999 on the charging of heavy goods vehicles for the use of certain infrastructures

⁵⁴ COM(2017) 275 final - Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures

other modes is expected to be limited to 0.1-0.2 percentage points by 2030 relative to the baseline scenario⁵⁵.

The internalisation of external environmental costs of transport is also supported by fuel taxation. The Energy Taxation Directive 2003/96/EC⁵⁶ lays down the rules on the taxation of electricity and energy products. The minimum tax rates set in the Directive are aimed at supporting the reduction of negative externalities of the transport sector. However, in its current form, the Directive does not create sufficient incentives for energy efficiency and reductions of CO₂ emissions. The Commission adopted a proposal to review the Directive on 13 April 2011⁵⁷ aiming at aligning energy taxation policies to reflect the environmental impact of fuels and other energy products. Due to lack of agreement in the Council, the Commission withdrew the proposal in March 2015.

Taking into account the widespread use of road transport, the internalisation of the external costs of road transport – partial or full - is politically and economically difficult as it would impact a large category of operators and citizens. In the short term it will not be possible to achieve full internalisation of external costs and partial internalisation is unlikely to achieve the desired modal shift results alone.

The latter is supported by the data from Member States who have introduced road charging with an aim to support modal shift. In Germany, no significant evidence was found on effects on modal shift from road charging. At the same time, in Austria, where the distance based tolls on HGVs were complemented by a handful of other policy measures (notably fiscal, financial and regulatory measures in support of rail and combined transport), a clear modal shift has been noted since 2004 when the tolls were introduced.

2.1.1.3. Regulatory disadvantages and other issues hindering Intermodal Operations

Road sector

As already explained above, despite the specific extension to 45' long containers for combined transport, the Weight & Dimension Directive limits the size and weight of the load unit that can be used in road freight transport, de facto also limiting the capacity that can be transported in an intermodal operation.

Unequal liberalisation and evolution of rail, IWW, SS compared to international road transport

As underlined in the REFIT evaluation Report, the liberalisation of road and rail transport, the improvement of interoperability of modes and state aid rules have had an impact on the intermodal transport in the EU. Because it was liberalised in 1990s, road transport enjoyed

⁵⁵ SWD(2017) 180 final - COMMISSION STAFF WORKING DOCUMENT - IMPACT ASSESSMENT -Accompanying the document Proposal for a Directive of the European Parliament and of the Council amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures and Proposal for a Council Directive amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures, as regards certain provisions on vehicle taxation

⁵⁶ Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity

⁵⁷ COM(2011) 169/3, Proposal for a Council Directive amending Directive 2003/96/EC restructuring the Community framework for the taxation of energy products and electricity

greater competitiveness than other modes of transport, while e.g. railways continued to be protected from competition for many years. This can be seen as having negatively influenced the comparative advantage of intermodal transport. The complete liberalisation of the rail freight operations occurred only on 1 January 2007 with the Second Railway Package⁵⁸, for both national and international services. Despite the increased competition and new operators entering the market, there are still issues and the effects of full liberalisation will take time to fully manifest themselves. For waterborne transport, there have number of initiatives to open up the market and facilitate inland waterway transport and short sea shipping, but additional legal instruments are needed to complement the existing ones (e.g. revision of the Reporting Formalities Directive⁵⁹).

Different standards and regulations in non-road modes

There are also specific technical issues or regulatory obstacles affecting the non-road modes, and in particular the rail sector, the original non-road mode affected by the Combined Transport Directive. Infrastructure requirements for the rail freight lines to complete the TEN-T rail freight core network by 2030 have been defined in the TEN-T Guidelines⁶⁰ : "at least 22,5 t axle load, 100 km/h line speed and the possibility of running trains with a length of 740 m". This has been complemented by the Regulation⁶¹ on rail freight corridors aimed to develop coordinated capacity for rail freight along the corridors. This has contributed to ensure that overall, less than 1% of the total rail network was congested in 2014, as explained in the 5th Rail Market Monitoring Report⁶². However, despite those objectives and advances, the present lack of connections, infrastructure and problems relating to technical harmonisation, including gauge differences between different part of the Europe (Eastern Europe and Central and Western Europe) continue to negatively influence the functioning of the EU rail market and through that the development of Combined Transport and other multimodal services. Furthermore, the European Court of Auditors noted in its report⁶³ 'Rail freight transport in the EU: still not on the right track' that the performance of rail freight transport in the EU remains unsatisfactory. Finally it should also be noted that in the European rail system, with few exceptions, passenger traffic has priority over freight and international over domestic; this can have an impact on delivery and reliability of freight transport. Similar consequences in terms of speed and reliability are even more important and even inherent of waterborne transport operations and infrastructure.

2.1.2. Low density and limited capacity of Intermodal Infrastructure (including terminals)

The way transport infrastructure is shaped has a decisive impact on the achievement of the modal shift and decarbonisation objectives of transport. The White Papers on Transport both

⁵⁸ Including, among others, Directive [2004/49/EC](#)

⁵⁹ Directive [2010/65/EU](#)

⁶⁰ Regulation (EU) No [1315/2013](#)

⁶¹ Regulation (EU) No [913/2010](#)

⁶² https://ec.europa.eu/transport/modes/rail/market/market_monitoring_en

⁶³ <http://www.eca.europa.eu/en/Pages/NewsItem.aspx?nid=6971>

from 2001⁶⁴ as well as from 2011⁶⁵ acknowledged insufficient availability of multimodal infrastructure to be the main problem for achieving modal shift. This was also underlined in the European Parliament resolution⁶⁶ of 9 September 2015 on the implementation of the 2011 White Paper on Transport which pointed that "the modal shift policy has not so far delivered satisfactory results" and which highlighted that appropriate transport infrastructure was a precondition for a sustainable multimodal transport system and also stressed the need to prioritise investment on notably the completion of missing links and the development of multimodal terminals.

Looking at the EU transport infrastructure, the completion of the TEN-T Core and Comprehensive Networks, especially as regards the non-road modes, is critical. The revised TEN-T Guidelines⁶⁷ set a range of binding standards for infrastructure development and multimodal infrastructure, and a second generation of TEN-T corridors work plans is being prepared, under the supervision of Coordinators, further refining the initial analysis of the infrastructure needs and relevant projects, in particular to remove bottlenecks and complete cross-border section. The efficient completion of this network may however be impacted by complex regulatory and administrative arrangements, which may contribute to increased costs, delay and uncertainty for infrastructure projects.

From a network capacity viewpoint, rail, inland waterways and short seas shipping have today the theoretical necessary capacity to absorb freight traffic shifted from road:

- for rail, capacity limits vary significantly between various parts of the rail network, but, as explained above, capacity is and will be coordinated in the context of the implementation of Regulation (EU) No 913/2010 and the Rail Freight Corridors;

- for short-sea-shipping, the EU has large available capacity in terms of sea-ports in 22 EU maritime Member States and there are 329 key seaports which belong to the trans-European transport network and that are key nodal points for handling both international freight trade and intra-EU freight flows;

- for inland waterways, the EU inland waterway network spans 20 Member States with about 37000 kilometres and has ample capacity availability to absorb heavy freight traffic across main industrial areas, in particular over the cross-border regions linked by the Rhine, the Danube and other important waterways connections (e.g. Seine-Scheldt, Rhone, Po, Elbe, etc.).

The main infrastructure bottleneck hampering the shift from road freight to other modes transport is at the terminal level: on the one hand, a minimum density of transshipment terminals is required to facilitate the shift from road to other modes in different areas of the EU; on the other hand, the capacity of existing transshipment terminal needs to cope with overall freight traffic growth. These issues affect primarily the road/rail intermodal transport and the situation is different from one country to the other:

⁶⁴ COM(2001) 370 final

⁶⁵ "Investments to modernise the rail network and the transshipment facilities have been insufficient to address the bottlenecks in multimodal transport." - SEC(2011) 358 final – Impact Assessment of the 2011 White Paper

⁶⁶ <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2015-0310+0+DOC+PDF+V0//EN>

⁶⁷ REGULATION (EU) No 1315/2013

- from a density of terminal viewpoint, and as illustrated in Annex 6⁶⁸, the distances between rail/road terminals on the EU TEN-T Core and Comprehensive networks are still well above 300km in many regions; limiting the possibility of short (> 150km) road legs in case intermodal transport would be selected by a shipper or freight forwarder. As can be observed on the map, the density of terminals is quite high and currently sufficient in Benelux, Germany, Austria and Northern Italy; it is also the case in Czech Republic and Slovakia; however, in certain specific regions (North of Sweden or Finland) cases, the low terminal density is such that it is not possible to use intermodal transport; as indicated by the International Union for Road-Rail Combined Transport (UIRR)⁶⁹ *some countries have an appropriate overall capacity but inadequate capacity e.g. Hungary, where there are 4 terminals in Budapest, but none in the countryside, or France where certain regions are better covered than others, or Romania, where only Western Transylvania is well supplied.* In addition, a recent study⁷⁰ on last mile in rail infrastructure identified that, while last-mile infrastructure and rail freight production systems will undergo further concentration and the total number of rail access points in Europe will decrease, under three different scenarios regarding rail freight traffic evolution from 2015 to 2030 (minus, trend, plus), the current number of road/rail intermodal terminals (~730 in 2015) would need to increase between 2% and 10 %, **with the 5%** value for the trend scenario.

NOTE: It should be noted that the network density of non-road modes is unlikely to ever be comparable to that of road. In some countries with low population density, the volumes of freight transport are not enough to make investments in intermodal terminals profitable for private sector. In some areas the problem is not lack of terminals but lack of non-road alternative in general.

- from a terminal capacity viewpoint, there are also differences between regions: there are countries with appropriate density, but insufficient capacity already today (e.g. Germany, Austria, and Northern Italy). However, looking at the 2030 time horizon, the above mentioned "last-mile" study also indicated that *"In order to cope with the forecasted volume growth of intermodal transport, the capacity of the existing terminals shall be increased"*.

Insufficient investment in Intermodal Infrastructure

Investment into terminals and connections to provide efficient alternatives to road transport is cost intensive and it is not always considered a priority even when supporting instruments, e.g. TEN-T, exist. The expected investment needs for building new and increasing the capacity of old intermodal terminals for rail connections alone is assessed to be 4.5 billion EUR until 2030, according to the pre-cited last-mile Study⁷¹. The investment needs are heavier in some Member States; in particular those who joined the EU after 2004 and have hence had shorter time to implement previous EU initiatives on multimodal transport.

⁶⁸ According to TENtec interactive maps - <http://ec.europa.eu/transport/infrastructure/tentec/tentec-portal/map/maps.html>

⁶⁹ <http://www.uirr.com/>

⁷⁰ Design features for support programmes for investments in last-mile infrastructure (2016), PWC, CER, HaCon, Panteia, available at <http://ec.europa.eu/transport/sites/transport/files/2016-06-rail-final-report-design-features-for-lm-investments.pdf>

⁷¹ Design features for support programmes for investments in last-mile infrastructure (2016), PWC, CER, HaCon, Panteia, available at <http://ec.europa.eu/transport/sites/transport/files/2016-06-rail-final-report-design-features-for-lm-investments.pdf>

Public support from EU and Member States funding mechanisms, to drive investment into sustainable transport modes remains nonetheless essential, and the interaction within such funding mechanism between infrastructure policies objectives and EU climate goals needs to be clearly recognised⁷².

As further detailed in the REFIT report⁷³, the EU has supported the investment into rail and waterborne transport and multimodal terminals through several EU programs including some dedicated ones (such as the Pilot Action for Combined Transport/PACT, 1997-2001, the Marco Polo programmes, 2003-2013) and TEN-T. Such support is currently made possible through general multipurpose programmes such as the Multiannual Financial Framework, the European Fund for Strategic Investment and the Connecting Europe Facility, although not dedicated to the development of multimodal infrastructure.

Some Member States have introduced or renewed national support programs for different modes of supply as well as for terminal building in accordance with EU competition law. However, investing in intermodal transport does not feature prominently among the priorities of (all) Member States and may not be sufficiently prioritised for MFF, EFSI or CEF funds, nor are all Member States willing to go through the state-aid notification procedure for national programs.

AT	Support for construction of terminals and rail sidings	2013-2017
CZ	Aid scheme for the modernisation and construction of CT terminals	2015-2020
DE	Support for construction of terminals	2017-2021
SK	Investment support for equipment	not limited
UK	Freight facilities grant, Waterborne freight facilities grant	2013-2017

Table 3. Dedicated national support schemes for intermodal terminals

The previously referred "last mile" study⁷⁴ compared the effectiveness of dedicated programmes and non-dedicated programmes and concluded that dedicated programmes are more suitable for the development of terminals both in terms of effectiveness and efficiency and ensure greater impact. The study notably pointed at the positive results of the German funding programme for intermodal transport : based on the finding that terminals, which have been financed completely privately, are not competitive to road transport, the programme provided a relatively high funding rate (up to 80%) for intermodal terminals, in order to cope with the high initial construction costs required for the terminals, obliging the private terminal operators to charge high transshipment fees, and in turn endangering the competitiveness of intermodal services, especially in transport distances below 400 km. Thanks to the investment support, a significant reduction of transshipment costs in inland facilities up to 22 € per loading unit could be observed.

⁷² EU Strategy for Low-Carbon Mobility, COM (2016) 501 final

⁷³ SWD(2016) 140 final

⁷⁴ Design features for support programmes for investments in last-mile infrastructure (2016), PWC, CER, HaCon, Panteia, available at <http://ec.europa.eu/transport/sites/transport/files/2016-06-rail-final-report-design-features-for-lm-investments.pdf>

Having dedicated financial support for intermodal infrastructure, complemented by other support measures in the Directive and by the package of other measures required and undertaken (e.g. review of Eurovignette Directive, further implementation of rail freight corridors, etc...) to support modal shift would be very helpful to address the general problem.

Obviously, any infrastructure investment to address terminal capacity shortage or to build new terminals needs to be based on a detailed analysis of the market needs and conditions and an ex-ante assessment of the impacts⁷⁵, both locally and at European level, taking into account the effects of complementary measures. This would imply and require coordination at European level to notably avoid that unused capacity would be built. Such coordination should be included to any new investment support measures for transshipment terminals. This would ensure such additional investment would not result in unused terminal capacity.

While the Combined Transport Directive does not contain any specific measures for infrastructure development, *a majority⁷⁶ of stakeholders have notably called for making use of the opportunity offered by the amendment of the Combined Transport Directive to make this concrete*. It should also be noted and reminded that the original proposal for the Combined Transport Directive was accompanied by a proposal for targeted investments into the intermodal network and terminals; but this proposal was never agreed

2.1.3. Modest impact of the Combined Transport Directive

Combined transport, as defined in the Combined Transport Directive, is a specific type of intermodal transport benefitting from regulatory and economic incentives. Despite the absolute growth of "Combined Transport" and intermodal transport, its relative importance compared to road transport has been limited and, as explained further below, specific problems related to the Combined Transport Directive have been highlighted in the recent 2016 REFIT evaluation, that need to be tackled.

2.2. The Specific problems and problem drivers of the current Directive

The REFIT evaluation established that the Directive does not harness its full potential. Combined transport has been supported for 25 years and its volume, in terms of tonnes km, has indeed grown at twice the speed of road transport, however, problems still exist with the implementation of the Directive and the effectiveness of its measures has diminished over time. The *stakeholders consulted in the open public consultation* agreed that while the Combined Transport Directive has been a useful tool to improve the competitiveness of intermodal transport, it does not provide sufficient support to allow equal footing with road transport and does not even allow using the benefits foreseen to the full degree.

The specific drivers for this modest impact of the Combined Transport Directive are further explained below.

⁷⁵ In its report on the Marco Polo Programme, the European Court of Auditors recommended that any new funding programme "... would require a detailed market analysis of the potential demand from the operators and the taking into account of best practices of similar national support schemes." http://www.eca.europa.eu/Lists/ECADocuments/SR13_03/SR13_03_EN.PDF

⁷⁶ 80% of the respondents of the targeted consultation supported "maximum" infrastructure investment measure

2.2.1. *Ineffective implementation of the Combined Transport Directive*

As pointed out in the REFIT evaluation, the implementation of the Combined Transport Directive has proved difficult for all stakeholders due to a number of issues.

As already explained in section 2.1.1.1 above, one of the controversial issues in the implementation of the Directive has been the perception by some Member States and their national road associations that the "cabotage" exemption as provided for in Article 4 of the Directive has been "abused" by road operators to circumvent the cabotage restrictions of Regulation (EC) 1079/2012. The lack of clarity of the definition of the Combined Transport, leading to different interpretations between operators and Member States, associated with the limited and rudimentary enforcement conditions provided by the Directive, may have indeed caused a number of situations of conflictual appreciation of the cabotage exemptions. As underlined in the REFIT evaluation, and confirmed in the rulings of the CEUJ, the cabotage exemption of the Combined Transport Directive have fulfilled their role of promoting international intermodal transport and should be maintained. *This was also supported by the majority⁷⁷ of stakeholders in the Open Public Consultation.* Yet it is also equally important to address the concerns of those Member States and national road associations to ensure the most effective enforcement and hence avoid possible situation of circumvention of the cabotage rules.

2.2.1.1. *Complex and narrow eligibility criteria*

The definition of Combined Transport in Article 1 establishes the eligibility criteria for the beneficial regime created by the Combined Transport Directive :

- it covers the **transport of goods between Member States** where the lorry, trailer, semi-trailer, with or without tractor unit, swap body or container of 20 feet or more, uses the road on the initial and/or final leg of the journey and, **on the other leg, rail or inland waterway or maritime services.**
- the **length of the road leg is limited in distance** to ensure that long-distance road transport is limited. Road leg(s) combined with a **maritime/inland waterway leg have to be each shorter than 150 km** as the crow flies (in direct line). In case of rail-road combined transport, the road leg is limited to transport to the **nearest suitable** rail loading and unloading station.
- A **minimum length of the non-road leg** (rail/sea/inland waterway) is also provided. The non-road leg has to be **longer than 100 km** as the crow flies.
- The definition **does not cover CT operations within one Member State, or between one Member State and a third country**

Those criteria were adopted in 1992 as an extension to the ones in the definition of the 1975 original legal act⁷⁸ and were meant to focus on and support multimodal transport operations with shortest possible road legs. The "nearest suitable" part of the definition was originally and literally meant to limit the use of road to the minimum inevitable. It however proved not be very operational and raised since 1992 the most discussions, litigations and uncertainty.

⁷⁷ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

⁷⁸ Council Directive [75/130/EEC](#)

As mentioned in the REFIT evaluation, transposition and implementation by the Member States is still inconsistent after 25 years. This leads to practical problems that reduce the effectiveness of the Combined Transport Directive.

In particular, various modifications of the Combined Transport definition by the Member States in their national transpositions have led to different ways in which Combined Transport operations are treated in the Member States. While the transposition of a directive allows for a certain level of flexibility, this should not result in the reduction of the rights provided for in the directive nor in the discrimination of service providers. However, it seems that this has not been the case with the Combined Transport Directive in some Member States. The Commission has received in recent years several complaints from the industry facing problems with national authorities causing delays and fines due to non-compliant transposition, interpretation and/or enforcement of the Combined Transport definition in the Directive. *The problem caused by slightly different definitions, even if compliant with EU law, was expressly raised in the public consultation by stakeholders.*

Too narrow definition

The above referred study carried out in 2014 on the EU Combined Transport market (The Combined Transport study)⁷⁹ estimated that two thirds (58.3%) of what Member States and/or industry consider as Combined Transport is actually not covered by the Combined Transport Directive. This relates to geographic scope as well as limitations on road and non-road legs and load units. It should notably be noted that the transport of intermodal load units by ocean going vessels or to third countries where there is only road transport in the EU is not normally considered intermodal transport by the industry.

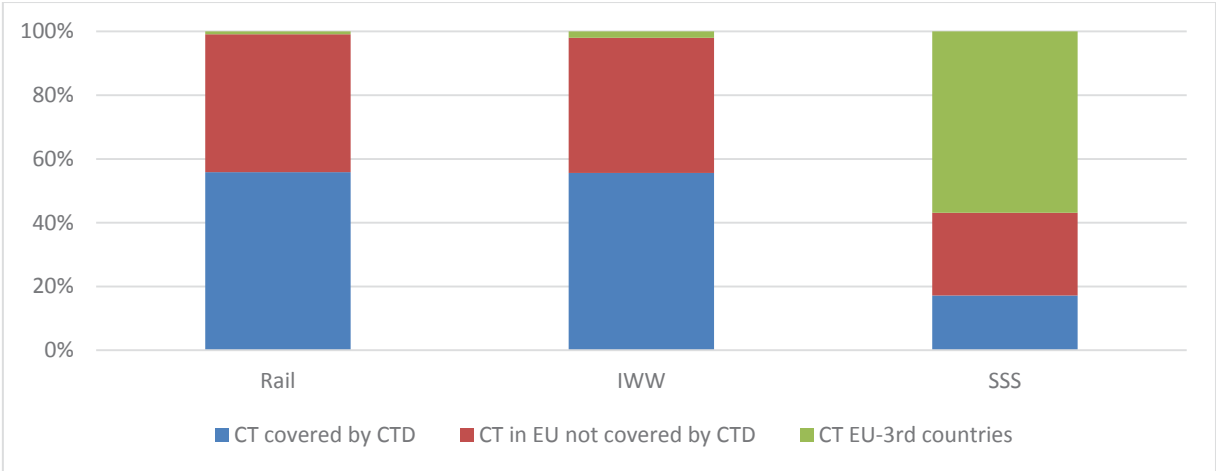


Figure 6 : Combined Transport Directive’s coverage of actual CT volumes

The geographical coverage applied by Member States varies considerably. According to that same study, half of the Member States have extended the intended geographical scope. Some have extended it to national Combined Transport operations, some to any international Combined Transport operations (including those only between 1 Member State and a 3rd country).

The Directive currently covers only operations between Member States and not within Member States or with third countries. *Actors in the Combined Transport industry (between*

⁷⁹ KombiConsult et al, 2015, Analysis of EU Combined Transport market, <http://ec.europa.eu/transport/sites/transport/files/themes/strategies/studies/doc/2015-01-freight-logistics-lot2-combined-transport.pdf>

65 and 80%)⁸⁰ have emphasized that the scope of the Combined Transport Directive should not be constrained to operations between Member States as different definitions create additional legal costs for the industry. This concerns in particular national combined transport operations (19.3% of all combined transport in EU) that are currently not covered and thus do not benefit from the support measures foreseen by the Directive, while the negative externalities such as greenhouse gases impact the EU beyond national borders. Note : an extension of the Combined Transport Directive's scope to transport within a Member State and with third countries was also included in a 1998 amendment proposal.

Different distance limitations for different modal combinations

About 60% of respondents to the targeted consultation⁸¹ considered it a practical problem that different limitations on distances per mode apply to rail-road combined transport and waterborne combined transport and favoured modifications to these limitations. It has also created problems in certain Member States for the enforcement as controlling officers apply the more restrictive limitation on all combinations. In certain cases where the combined transport operation involves both, rail and waterborne transport, it is unclear which limitations should apply.

As illustrated in table 4 below, the average and mean distances in different modes diverge quite significantly between different modal connections⁸²:

- For inland waterways, both the non-road and the road legs tend to be rather short meaning that it is the limit on the non-road leg (i.e. min 100 km) in Combined Transport Directive that excludes the operations from receiving support. Considering also that 50% of IWW/road operations are intra-MS, only 36% of the total IWW/road freight transport on EU territory is eligible under the CTD definition.
- It is noted that a limit of 150 km⁸³ for rail-road Combined Transport, would cover both the average and mean road legs.
- For short-sea shipping, the mean road leg distances fall within the Combined Transport directive, but the average distance is almost two times longer than the current limit. This relates mostly to long road legs in combination to feeder traffic for ocean going vessels, in particular in areas where there are little possibilities to carry the longer continental distances by rail to the port.

Intermodal transport sector / Intermodal Transport market segment	Non-road leg within the EU (km)			Road leg, one-side (km)		
	Average length	Median length	Longest identified	Average length	Median length	Longest identified
Rail/Road CT	615	580	2 500	51	40	375
Barge/Road CT	222	140	1 400	21	10	360
Shortsea/Road CT	760	1 280	7 000	257	98	900

⁸⁰ Between 65 and 80% of respondents to the Open Consultation consider that extending the geographic scope of the Combined Transport Directive would provide a positive impact

⁸¹ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

⁸² ISL+KombiConsult (2017), Updating EU combined transport data – Final Report

⁸³ An intermodal transport usually involves transportation of empty load unit before and after the road leg (to and from a depot). There is no information that the transport of empty load units is counted into these limits in any of the Member States currently, though problems on the road have been occasionally reported.

Table 4. Average and median distances of intermodal transport

It should be noted that, *as reflected in the stakeholder meeting of 30 March 2017*, an inflexible limit would most likely result in reverse shift, that is to say the transport organiser, being unable to use the beneficial regime of combined transport (in particular the additional weight allowed) due to some kilometres too many, would use road only transport to make the ends meet.

Limitations on the number of road legs

First, some Member States interpret the Directive differently from the common understanding when it comes to the number of road legs included. The language in the definition in English says "... initial or final leg". Some Member States interpret this as allowing only one road leg per full journey (exclusive or), while others require that there have to be two road legs (excluding container hinterland transport). The 1998 amendment proposal suggested that the problem is one of translation as in the French version the question does not arise. The Combined Transport Directive itself uses also "and" and "and/or" in other parts of the Directive. Taking into account the objectives of the Combined Transport Directive, there is no justification for limiting the Combined Transport operation to one road leg or requiring always two legs.

The definition further introduces limits on road legs, and for the rail-road combined transport it uses the term "nearest suitable rail loading station" that has caused considerable problems to the industry. While most stakeholders agree that "nearest suitable" would be the best available definition if it would be left to the businesses to decide what is suitable. However this is not the case and *as much as 60% of the stakeholders indicated in the public consultation that it causes them and national authorities practical problems* as it is hard to enforce and often leaves large discretion to the police officer carrying out the road side checks. Furthermore the transposition and implementation of this term varies between Member States and the difficulty to enforce creates problems resulting in confusion particularly in relation to the road cabotage rules and the weights and dimensions rules. At least 6 Member States have established criteria to define 'suitability' that do not derive from the Combined Transport Directive and some of which are clearly discriminatory (such as requirements that the station has to be on the territory of the Member State or approved by the Member State) or impractical (such as not taking into account whether services towards the desired transport destination exist in the nearest terminal). The question on "suitability" was addressed to the CJEU in case C-305/06, however the court did not deliberate on that question as it reached its decision based on the "cabotage" question.

Minimum distance requirements for the non-road leg

As regards the requirement of a minimum distance of 100km for the non-road leg, the majority of operations run on considerably longer distances, in particular due to fact that combined transport only makes economic sense due to the additional transshipment costs on longer distances. 99.5% of rail-road operations are on distances longer than 100km, 99.94% of container short-sea shipping and 95% of inland waterways operations between Member States.

However, only 69.655 of ro-ro short-sea shipping is on distances longer than 100 km, as are many (mostly national) Inland Waterways operations. Thus a range of waterborne Combined Transport services operate over significantly shorter distances. In principal two types of operations have shorter non-road legs: first, the barge services feeding containers between the ports such as of Antwerp or Rotterdam and terminals in the immediate hinterland. Those operations contribute greatly to decongesting the road networks in sea ports and in the immediate hinterland and to reducing environmental burdens in agglomerations. Secondly

island connections and some ferry crossings by short-sea shipping such as Calais-Dover and Puttgarden-Rødby. While the latter option would normally be used with or without support and it doesn't bring along modal shift, the short IWW services around ports and in and around agglomerations contribute considerably to the objectives of reducing negative externalities.

Dimensions and identification of load units

With regard to load units, the definition covers the vast majority of intermodal load units in use today⁸⁴. However, the restriction of the Combined Transport Directive to load units of 20-foot (6m) length hinders the opportunity to introduce smaller Combined Transport load units that are used in some parts of the world, mostly in urban environments and environments where bigger vehicles/barges cannot approach. With growing urbanisation, these load units can become increasingly important in the future in the EU. Making Combined Transport services more flexible and allowing smaller load units (which can be combined and redistributed at hubs) could potentially encourage more users to shift freight away from road. This view was supported by *the respondents*⁸⁵ of the public consultation who claimed that the legislation should allow new innovations to benefit from the Combined Transport Directive in order not to shift these load units to the road.

Another issue raised notably by *operators of road/rail combined transport* relates to the fact that not all load units are identified in standardised ways slowing down the handling of the load units in terminals as well as not allowing or reducing the possibilities to implement technological solutions to follow the identified load unit throughout the operation, to gather data on load units and thus intermodal transport in general. Furthermore, standardised identification of load units would also simplify the control of eligibility for the combined transport support measures as it would be easier to identify the load unit through different modes of supply, in particular when using information technology means.

2.2.1.2. Lack of effective enforcement conditions

Conditions for proof of eligibility are particularly important for the regulatory benefits in Articles 2, 4, 7 and 9 of the directive as well for the additional weights and dimensions allowed on the road leg from the Weights and Dimensions Directive. As mentioned above, it is particularly important for justifying the exemption from cabotage restrictions as provided in Article 4, and which has given rise to many complaints and sometimes infringements cases related to the potential abuse of such Article by "pseudo" Combined Transport operators. The requirements on the transport documents used for proof of eligibility are established in Article 3 in turn refers to Council Regulation Nr 11 from 1960.

Information to be provided for control

In order to check the eligibility for support from the Combined Transport Directive, the controlling authorities should be able to check that the operation involves at least 2 Member States, that the load unit is one of those listed in Article 1, that the non-road leg is more than 100 km, and the road leg in question is less than 150 km as the crow flies in case of a connection with waterborne transport or to the nearest suitable rail loading station in case of a combination with rail transport. However, the required information in the current Directive covers only half of this information since it is related only with the road leg. No information

⁸⁴ TRT (2017) – Gathering additional data on EU combined transport – Final report

⁸⁵ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

is required on non-road legs nor whether the operation is at least between two Member States. Furthermore, the controller has to establish the length of the legs as the crow flies. This results in confrontations and delays on the road due to different interpretations⁸⁶.

A vast majority (80%) of public consultation respondents consider it very important that the operators are able to prove that they are engaged in Combined Transport operations. While agreeing with the need to be able to establish eligibility, many operators claim to have encountered problems linked to documentation requirements, mostly causing delays and additional costs and during the stakeholder meeting of 30 March 2017, stakeholders unanimously concluded that paper documents and stamps as proof of eligibility were outdated. The road hauliers claim it to be difficult to acquire documentation from a Combined Transport manager showing also the other legs of the journey. *The respondents to the targeted consultation agreed that being able to prove the eligibility is important for an effective enforcement and for avoiding problems. Member States in particular pointed out that it is important that the data required corresponds to the eligibility criteria established in the definition.*

Format of information provided

With regard to the format of the information provided, the only condition in the Directive is that it has to be a paper document stamped on the final leg and available in the vehicle. *The stamp requirement has been identified⁸⁷ by all stakeholders in the stakeholder meeting of 30 March 2017 to be a particular problem as stamps are no longer used in many countries and hence prove impossible to acquire.*

The choice of transport document type is *expressis verbis* left to the operators⁸⁸ and there are a multitude of formats available. It should be recalled that under international transport law, transport documents constitute a civil contract between the shipper and the transport operator, and as the conditions for operation in different modes are different, the standard documents are also. This means that the industry can use for example a CMR⁸⁹, a CIM⁹⁰, a national transport document, a company-related consignment note, a bill of lading or a multimodal document etc., and Member States are not allowed to request a specific format as long as the information referred to in Article 3 of the Combined Transport Directive and in Article 6(1) of Regulation No 11 of 1960 is given. However in reality several Member States have established requirements on types of documents accepted, which is not in compliance with the Directive.

It should be noted that some operators as well as public authorities would prefer to have a harmonised Combined Transport or multimodal transport document made mandatory. However as the transport document is also a civil contract, harmonisation would require also

⁸⁶ Industry has launched several complaints on this issue; however there has been only one infringement case, Commission v. Greece (C-305/06). The court considered that the Greek authorities were not able to determine that it was a CT operation based on the documents provided and hence their action for illegal cabotage was justified

⁸⁷ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

⁸⁸ Article 6(3) of Regulation No 11 of 1960 as last amended by Regulation (EC) No 569/2008 states that "Where existing documents such as consignment notes or any other transport document give all the details specified /.../ carriers shall not be required to introduce new documents".

⁸⁹ Convention on the Contract for the International Carriage of Goods by Road is a United Nations convention signed in Geneva on 19 May 1956. Based on the CMR, the International Road Union (IRU) developed a standard CMR waybill

⁹⁰ Uniform Rules concerning the Contract of International Carriage of Goods by Rail (CIM) - Appendix B to Convention concerning International Carriage by Rail, 9 June 1999, applicable with effect from 1 July 2006

harmonisation of civil liability regimes, and any new liability regimes would need to take into account the contractual nuances needed for different modes of transport. The issue of simplifying the contacts with/controls by the authorities can be solved easier through the introduction of harmonised electronic data exchange formats/electronic documents, while allowing the industry the contractual freedom in civil law matters. The ability to use electronic documents/data for control purposes is widely supported by the industry. A specific recommendation in this sense has been made in the context of the Digital Transport and Logistics Forum⁹¹, an expert group set up by the Commission with a view to assist it in supporting digitalisation processes in the transport and logistics sector. The Commission is currently in the process of formally launching a new initiative aimed at ensuring the acceptance of the electronic transport documents (for all transport modes) by the Member States authorities⁹².

2.2.2. Ineffective and insufficient economic support

While the industry perceives economic support and notably fiscal stimulation as an effective way of reducing heavy costs borne by intermodal operators and consequently as a way for allowing intermodal services to compete with long distance road transport on price, the Directive did not allow to generate the full expected benefit from such measures due to several reasons.

2.2.2.1. Narrow scope of the support measures

The main problem with the current support measures, as defined in the Directive, is the very limited scope they have. Article 6.1 obliges Member States to reduce or reimburse taxes charged to road vehicles either by a standard amount or in proportion to the journeys that such vehicles undertake by rail, i.e. where the vehicles (and not containers) are loaded on a train (also called "rolling road" operations). This means that Article 6.1 support is in principle only applicable to ca 2% of intermodal operations in the EU. Furthermore, these rebates are granted by the Member State in which the vehicles are registered on the basis of rail journeys carried out only within this Member State. Other kinds of Combined Transport involving inland waterways or short sea transport or rail-road transport of containers do not benefit from Article 6.1. *In the open consultation⁹³, stakeholders confirmed the problem and suggested a wider range of economic support measures to make the Combined Transport industry more attractive, ranging from dedicated grants for combined transport terminals to a tax reduction on scheme extension to all sectors and types of operations, or incentives for the introduction of innovative ICT solutions and technologies to reduce CO2 emissions such as cleaner trucks.*

2.2.2.2. Insufficient economic support

The transposition and implementation of the support for combined transport is far from homogeneous. Merely 17 Member States have adopted schemes for the reimbursement of vehicle taxes (and only 14 actually implement them), however often with conditions different from Article 6.1. This means that half the Member States do not actually provide economic support foreseen in the Directive.

⁹¹ <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=3280>

⁹² The inception impact assessment was published by the Commission : https://ec.europa.eu/info/law/better-regulation/initiatives/ares-2017-2546864_en

⁹³ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC).

As the Combined Transport Directive is not very clear on the methodology to be used, Member States have adopted various approaches some quite far from the Directive's text. For example, though the calculation basis is given in the Combined Transport Directive to be the length of the rail journey, various Member States are using different criteria, e.g. number of performed journeys, time of rail services' usage, driven distances, number of transshipments or operating periods. Some Member States have schemes in place that go beyond the measures foreseen in the Directive mostly by covering all rail operations as well as inland waterways operations⁹⁴ and several Member States have measures in place not foreseen in the Directive. 8 Member States have implemented no support measures for Combined Transport at all. Figure 7 below illustrates how many Member States are applying the listed types of support measures.

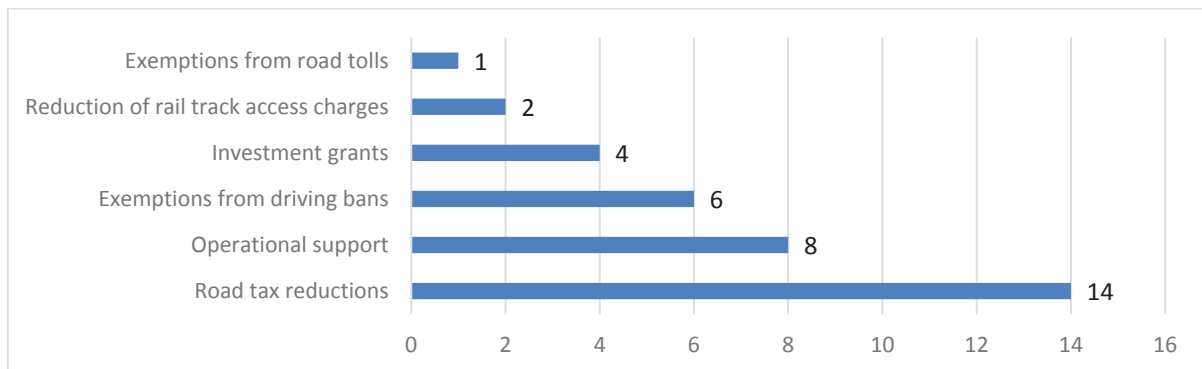


Figure 7 . Number of Member States applying different types of support measures

An additional issue are the very wide differences of the levels of support between the Member States as Article 6 does not harmonise the reimbursement levels. The tax reductions range from 10% to 100%, are applied on already varying vehicle tax levels, amounting to fixed amount support from €1 to €50 per operation. To put this into perspective, the main additional cost element when comparing to road transport, the transshipment cost is on average €50 per handling and there are on average 2 transshipments per operation. In countries with lower reimbursement levels or a lower vehicle tax, the actual benefit per shipment is therefore minimal (less than 1% of costs). This was supported by several respondents (mainly operators) to the public consultation, who pointed out that the levels of incentives of Article 6.1 are insufficient today. In the targeted consultation, *stakeholders (Combined Transport operators) suggested on average that an increase of the economic benefit of 27 % was required to achieve a cost-neutral alternative to road based service.*

As regards the possibility offered by Article 6.2 to fully exempt road vehicles engaged in Combined Transport operations from vehicle taxes, it applies only to road vehicles used exclusively in Combined Transport operations. *Respondents to the public consultation had signalled⁹⁵ that it is economically not viable to use some vehicles exclusively for Combined Transport (or to prove it).* In any case, according to the so-called Combined Transport Study⁹⁶, only three Member States make use of this provision.

⁹⁴ Any such support in so far as it involves State resources, is imputable to the State, grants a selective economic advantage to its recipient, affects competition and trade between MS (cf. Article 107(1) TFEU), should be subject to State aid control

⁹⁵ SWD(2016) 140 final - REFIT ex-post evaluation

⁹⁶ KombiConsult et al (2015), Analysis of EU Combined Transport market, <http://ec.europa.eu/transport/sites/transport/files/themes/strategies/studies/doc/2015-01-freight-logistics-lot2-combined-transport.pdf>

2.2.2.3. Limited monitoring and lack of review mechanism

The current Directive does not foresee an automatic review mechanism for economic support creating a situation where support measures will get outdated and end up being either too low, as now, or potentially also too high if the framework conditions change. This is in addition to the difficulties in the currently foreseen monitoring and reporting mechanism: while the Commission is due to report based on data provided by the Member States, this has not been possible because of the lack of systematic data collection on Combined Transport, resulting in difficulties to adequately assess the effectiveness and efficiency of measures on a regular basis (for further details see chapter 9). *Almost all respondents to the open public consultation⁹⁷ considered that it was important to collect and publish regularly all Combined Transport data.*

3. TACKLING THE PROBLEM

3.1. Evolution of the problem all things being equal (baseline scenario)

According to the baseline scenario (see Annex 4 for details)⁹⁸, under current trends and adopted policies, road freight activity (measured in tonne-km) is projected to increase by about 35% between 2010 and 2030 (56% for 2010-2050). CO₂ emissions from road freight transport would increase by 6% by 2030 compared to 2010 (11% for 2010-2050). Without intervention, this would not allow to achieve the 2030 emission reduction targets⁹⁹, would cause high levels of air pollution and congestion and negative effects to the wider economy through several direct and indirect effects. These effects are assessed to be in 2030 roughly €27 billion for air pollution and over €100 billion for accidents, while costs from noise would increase by 17% and congestion costs by 24%. More details on the projections under current trends and adopted policies (i.e. the baseline scenario) of the different modes in terms of e.g. energy consumption, GHG emissions or congestion can be found in Annex 4 of the Impact Assessment accompanying the review of the Eurovignette Directive¹⁰⁰.

In particular, under the baseline scenario, and without additional intervention, i.e. notably the review of the Eurovignette Directive, the application of the "polluter pays principle" would not be completed and there would not be a fair and efficient level playing field across modes

⁹⁷ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

⁹⁸ The baseline scenario builds on the EU Reference scenario 2016 but additionally includes some updates in the technology costs assumptions (i.e. for light duty vehicles) and few policy measures adopted after its cut-off date (end of 2014) like the Directive on Weights and Dimensions, the 4th Railways Package, the NAIADES II Package, the Ports Package, the replacement of the New European Driving Cycle (NEDC) test cycle by the new Worldwide harmonized Light-vehicles Test Procedure (WLTP). It has been developed with the PRIMES-TREMOVE model (i.e. the same model used for the EU Reference scenario 2016) by ICCS-E3MLab. A detailed description of this scenario is available in the Impact Assessment accompanying the Proposal for a Directive amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures, SWD (2017) 180

⁹⁹ The Energy Union and the Energy and Climate Policy Framework for 2030 establish ambitious EU commitments to further reduce greenhouse gas emissions (by at least 40% by 2030 compared to 1990). Transport will need to contribute towards the 40% greenhouse gas emissions reduction target for 2030 and in particular to the 30% emissions reduction effort set for the non-Emission Trading Scheme sectors. In this context, the analytical work underpinning the European Strategy for Low-Emission Mobility showed cost-effective emissions reductions of 18-19% for transport by 2030 relative to 2005. For road transport, this translates into a cut of about 206-221 million tonnes of CO₂ by 2030 relative to 2005

¹⁰⁰ SWD(2017) 180 final -in particular Chapter 2.1 and Annex 4 thereof

of transport : financial support measures will be needed in the support of sustainable and socially equitable transport to address the "unfair pricing" between modes.

3.1.1. Competitiveness of intermodal transport

As regards the competitiveness of intermodal transport (>300km) compared to road transport, it should first be noted that the proposal for an amendment of the Eurovignette Directive would have a slight influence depending on the final option adopted. In the accompanying Impact Assessment¹⁰¹ the road transport costs are projected to increase between 0.2% and 2% (1.1%-1.5% for the two preferred options). This however does not sufficiently address the price difference between intermodal transport and road transport as will be outlined below.

As explained above, the current regulatory support provided by the Combined Transport Directive applies to less than half (41.7%¹⁰²) and economic support to less than 2% of intermodal transport operations and is too low to have an effect.

Under current conditions, and based on average market prices¹⁰³ **the intermodal transport as a whole remains on average 23% more expensive** for shippers to use than unimodal road transport. According to same market prices, the operations that are covered by the Directive and benefit from regulatory and limited economic support (i.e. "Combined Transport") remain **13% more expensive on average** than road only transport.

As explained in section 2.1.1.1 above, it is also important to remember that, besides these market prices differences, the shippers are facing "additional" costs from delays, transaction and legal costs, which are not all fully reflected in the market prices.

Figure 8 below illustrates the estimated additional cost of intra-EU intermodal transport (all and Combined Transport only), compared to road transport (based on referred 2017 Study¹⁰⁴). This means that, economically, shippers, freight forwarders and logistics service providers would, in the absence of supporting measures, have little motivation to shift from road only transport to intermodal transport.

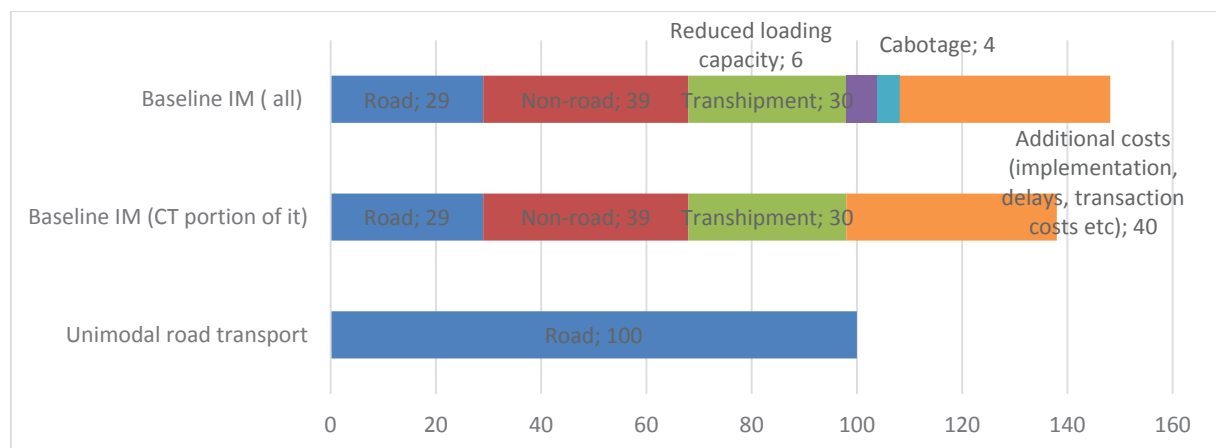


Figure 8 . The competitiveness of intermodal transport (all and Combined transport only) in baseline scenario based on comparing costs and cost components, in percentages

¹⁰¹ SWD(2017) 180 final

¹⁰² ISL+KombiConsult (2017), Updating EU combined transport data – Final Report (256 bn tkm intra-EU CT Vs 614 bn tkm of intermodal transport)

¹⁰³ KombiConsult-Hacon (2015), Gutachten zur Evaluierung des Förderprogramms für Umschlaganlagen des Kombinierten Verkehrs Aktenzeichen Z30/SeV/288.3/1440/G22

¹⁰⁴ TRT (2017) – Gathering additional data on EU combined transport – Final report

To increase the competitiveness of combined transport can be translated in bringing down for each of the sub-modes, the break-even distance under which the combined transport operation becomes "competitive" compared to road only transport. Measures having an effect on all the above mentioned cost components should be explored, including the public support measures. As an example, the CT Cost Study¹⁰⁵ estimates that for rail/road intermodal, "the effect of the public sector support is to reduce the average breakeven distance by 70 - 90 km or about 13-14% of the breakeven distance without any support".

3.1.2. Achieving modal shift target

The projection for achieving the modal shift target set in the 2011 White Paper is somewhat difficult as Eurostat is only starting to gather detailed data on freight transport distances in different modes¹⁰⁶. Eurostat does however gather data on road transport distances and recent data shows that during the last 5 years there has been no progress in reducing the long-distance road transport's share which is for all years around 56% of total road freight transport.

Taking into account that the modal shift in freight transport essentially means shift to intermodal transport, the growth projections of intermodal transport in the EU are used as proxy for modal shift calculations. Based on the projections established in the Combined Transport Study¹⁰⁷ and its update¹⁰⁸, two scenarios were developed to reflect the possible developments of the intermodal market and combined transport uptake until 2030. The analysis takes into account the developments that took place during the economic crisis and the following recovery as well as developments regarding the road transport market, in particular as regards fuel price and possible regulatory developments (e.g. the proposal for amendment of Eurovignette Directive). The latter's impact assessment projects a limited modal shift, i.e. decrease of 0.1-0.2 percentage points in road transport modal share in 2030, equal to 3.5-7 bn tkm. This does not eliminate the gap between the White Paper target and the current projections for 2030.

The optimistic scenario is based on the assumption that sectoral legislation in rail, inland waterways and short sea shipping will follow the path of further liberalisation and facilitation of cross-border operations, including harmonisation or mutual recognition of standards and qualifications as well as removal of main technical barriers still existing. The trend scenario assumes small-to-moderate progress in tackling the technical barriers.

¹⁰⁵ TRT (2017) – Gathering additional data on EU combined transport – Final report

¹⁰⁶ The implementation report of the 2011 Transport White Paper, SWD(2016) 226 final, suggested that the EU modal shift target can be expressed as percentage points decrease in the modal share of road freight over 300 km in the total freight transport over 300 km. More specifically, this implies a 4 percentage points decrease by 2030 and 9 percentage points decrease by 2050 relative to the 2005 shares based on the modelling scenarios carried out to support the impact assessment of the Transport White Paper. According to the data currently available, 72% of transport activity is performed on distances above 300km. In road transport, the share of long distance activity is 56%. For maritime shipping, most activity is long distance. Rail transport constitutes 13% of long distance freight transport in EU and inland waterways transport represents 3% of long distance freight transport in EU

¹⁰⁷ KombiConsult et al (2015), Analysis of EU Combined Transport market, <http://ec.europa.eu/transport/sites/transport/files/themes/strategies/studies/doc/2015-01-freight-logistics-lot2-combined-transport.pdf>

¹⁰⁸ ISL+KombiConsult (2017), Updating EU combined transport data – Final Report

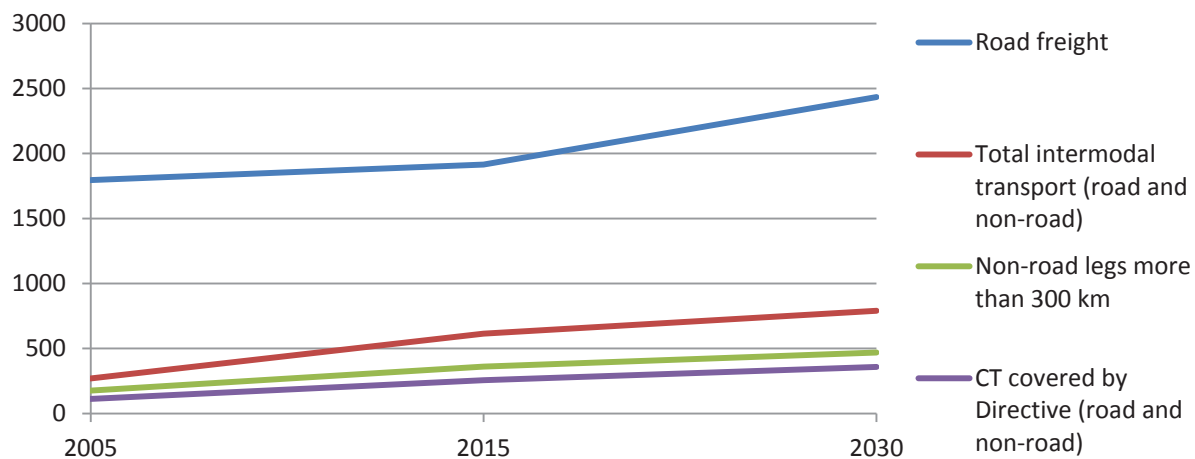


Figure 9 . Projected growth of road freight, intermodal and combined transport on average, 2030, bn. tkm

Based on the **trend scenario**, current conditions and adopted policies, intermodal transport would increase between 2015 and 2030 with an average growth rate between 2.2% and 2.8% (cumulative rate 28.5%) reaching a level whereby intermodal transport would account for 32% of road freight transport volume. The operations covered by the Directive would increase in this baseline scenario to a volume constituting 14% of road freight transport. Based on the **optimistic scenario**, the growth rates of different modal combinations would be between 2.2% and 4% and the cumulative growth rate of all intermodal transport in the EU would be 36.4% for 15 years. In this optimistic scenario, intermodal transport would reach a share 34.5% while combined transport covered by the Directive would reach a share of 16%. An average annual modal shift is envisaged to be 8.8-11.2 bn tkm (including shift to non-road transport shorter than 300 km).

According to these projections, the EU will not achieve its modal shift target of shifting 30% of long distance road freight transport (**301 bn tkm**) away from road. The modal shift from 2005 to 2015 amounted to 145 bn tkm. Intermodal transport is projected to grow slightly slower on average between 2015 and 2030 with an additional modal shift of 104 bn tkm. The currently estimated total modal shift between 2005 and 2030 is thus projected to reach on average 249 bn tkm. **A gap of 52 bn tkm** to be shifted remains.

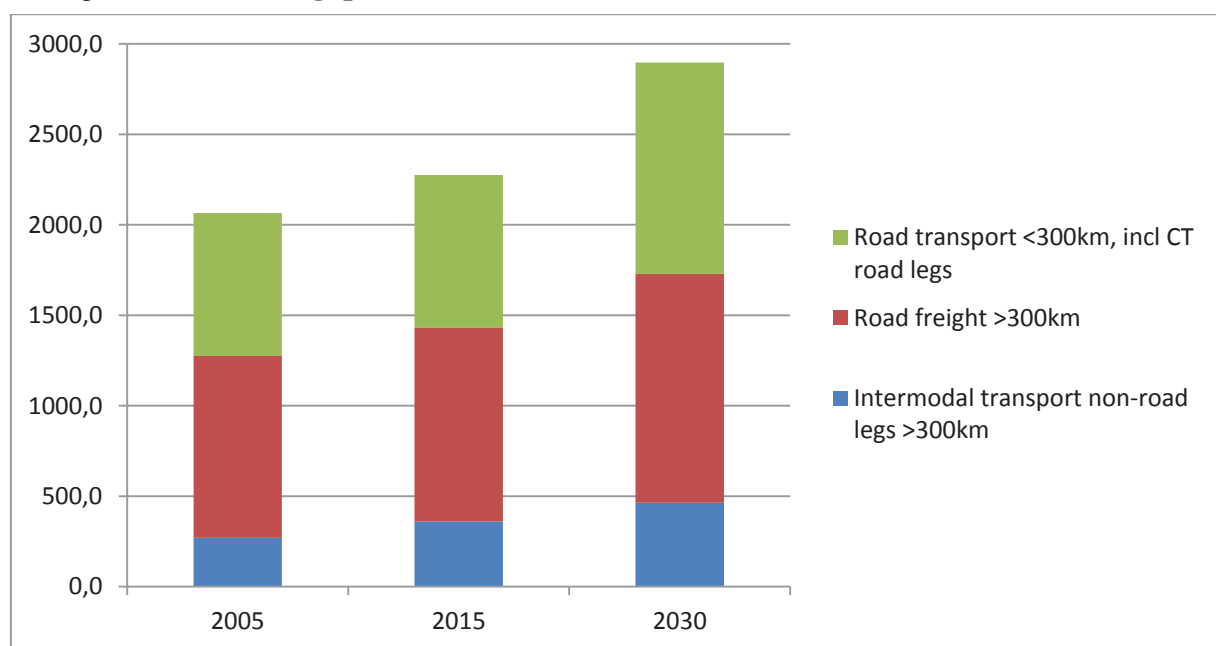


Figure 10. Freight volume projections for long distance road transport in relation to intermodal transport, CT Study (+ update) in bn. tkm

3.1.3. Savings of external costs

Using the PRIMES-TREMOVE Transport Model and the methodology of the Handbook on External Cost of Transport¹⁰⁹ the external costs (air pollutants, noise, congestion, accidents and infrastructure costs) saved by baseline growth of intermodal transport between 2005 and 2030 amounts to €5.8 bn. As illustrated in table 5 below the gap of not reaching the modal shift target set in the White Paper corresponds to a loss of €1.2 bn in external cost savings and in particular to 4.4 Mtons of CO₂ emissions that were aimed to be saved.

Baseline: External cost savings (MEuro'13)	2030			Modal shift gap
	Trend	optimistic	average	
<i>Modal shift, 2005-2030, bn. tkm</i>	247	252	249	52
Accidents	603	615	608	127
Noise	163	166	164	34
Congestion	3974	4054	4006	837
Air Pollution: NOx	310,4	317	313	65
Air Pollution: PM	16,5	17	17	3
Climate change	699,6	714	705	147
Total External costs	5766	5883	5813	1214

Table 5. External costs savings of the baseline development, PRIMES-TREMOVE Transport Model

3.2. Why should the problem be tackled now

The current Commission has set sustainable development as one of its main objectives. The agreement of the ambitious goals in the Paris Agreement on climate change and the subsequent policy aims set in the Low-Emission Mobility Strategy have set clear targets for the coming years. The latter concludes that comparing developments under the current trends and adopted policies (i.e. EU Reference Scenario 2016) with the central scenarios that were developed to achieve all the 2030 targets agreed by the October 2014 European Council¹¹⁰, additional policy actions are necessary, especially post-2020, in order to close the gap of 6-7 percentage points between the desired emission reduction and expected trend scenario results. One of the identified areas of action; i.e. increasing the efficiency of the transport system, comprises also the efficiency increases resulting from modal shift. The amendment of the Combined Transport Directive is thus listed as one of the actions in the Low-Emission Mobility Strategy.

The stakeholder consultations both in 2014 and in 2017 confirm that there is unused potential for further modal shift. Furthermore, according to Eurostat, 85.1 million tonnes of freight was transported by road already in containers (2014). Shifting these load units to intermodal transport would result in a 13% increase of the intermodal transport volume, but the current framework has not motivated the shippers to do that.

¹⁰⁹ Update of the Handbook on External Costs of Transport, Ricardo-AEA, 8.1.2014, <http://ec.europa.eu/transport/themes/sustainable/studies/doc/2014-handbook-external-costs-transport.pdf>

¹¹⁰ European Council conclusions, 24.10.2014, http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/145397.pdf

3.3. Why should the EU act?

Negative externalities, in particular those relating to climate change are trans-boundary problems which cannot be solved by national or local action alone. The EU has worked on reducing negative externalities of the transport sector for more than a quarter of a century as one of the objectives of the Common Transport Policy is to ensure the sustainable development of the transport sector. Coordinated EU action is necessary to achieve the goals set in the Transport White paper 2011, the Low-Emission Mobility Strategy and other EU policies in the area.

In addition to sustainable development issues, it is clear that transport has an international character (47% of intermodal freight transport is between Member States) and thus the added value of EU action is obvious as the existence of different regulatory environments of Member States would create barriers and/or additional costs for economic operators. The impact assessment accompanying the 2011 White Paper (p24) elaborates at length on reasons why the Member States per se are not able individually to meet the challenges of creating an EU-wide sustainable and integrated transport system.

The Combined Transport Directive's aim is the promotion of modal shift across the EU through support measures based on common ground. A common definition and common criteria are needed to ensure that the benefits foreseen in the Directive are applicable the same way throughout the EU, notably considering that from all intermodal transport operations in the EU, 81% are cross-border operations. If Member States use different definitions, it means that the operator might not be able to benefit from the incentives throughout the transport chain. Some differences do not create serious problems though they make it more costly for operators, who would have to be familiar with all legal systems along the itinerary. Others, such as differences in the load units or transport documents allowed, would make it impossible to carry out operations or require an additional reloading at the border (which is economically not viable).

The importance of EU action is illustrated by the high number of EU-Pilots and the infringement procedures launched by the Commission based on complaints by stakeholders who in cases of incorrect transposition or implementation have experienced first-hand the problems, as described in several sections above.

As regards economic support, there seems to be a general consensus among the Combined Transport operators and users that without any support measures and common EU rules in place, the majority of current cross-border EU Combined Transport would have been carried by single-mode road transport due to inherent disadvantages of Combined Transport such as lower loading capacity due to weight of load units, additional cost of transshipment, delay etc. It should be noted in this context that *stakeholders participating in the public consultation perceived (55%) that without the support of the Combined Transport Directive, Combined Transport services in the EU would not have grown* at such a fast pace within the last two decades as many operations, in particular in the medium length, would not be economically viable¹¹¹.

Last but not least, considering the lack of investment in terminal capacity, which is the main bottleneck for effective modal shift, the limited number of national investment programmes have proved useful, but in order to create a necessary EU network of transshipment facilities with sufficient density, coordinated investments at EU level are likely to be much more

¹¹¹ 29% of respondents considered CT also viable without the CT Directive; however these were mostly the largest companies. 90% of SMEs considered it not viable without support. 16% did not answer that question

effective than isolated national interventions. In addition, such new EU investment measures, if defined at EU level, could simplify the burden related to the abiding to competition rules, notably as regards state aid rules, which would be much simpler. The Commission Notice¹¹² on the notion of State aid as referred to in Article 107(1) of the Treaty on the Functioning of the European Union (2016/C 262/01) indeed states that "A measure is not imputable to a Member State if the Member State is under an obligation to implement it under Union law without any discretion. In that case, the measure stems from an act of the Union legislature and is not imputable to the State".

4. WHAT SHOULD BE ACHIEVED?

The general objective of the current initiative is to support modal shift by further encouraging the use of non-road transport modes on long distance freight transport operations, while maintaining and reinforcing the necessary regulatory and market measures for international transport (e.g. exemption from cabotage restrictions and weight and dimension rules). By aiming at the specific target for modal shift set in the 2011 White Paper, i.e. to shift by 2030 30% of long distance road freight (over 300 km) to rail or waterborne transport, and more than 50% by 2050, the initiative will in turn reduce the negative externalities of the transport system, such as emissions, noise, accidents and fatalities, road congestion as well as to improve the efficiency of use of transport resources. A move towards a more sustainable economic activity is a general objective of the current Commission¹¹³. Furthermore, reduction of emissions and in particular of greenhouse gases is a key objective of the EU in the light of the recent Paris climate deal and supporting modal shift through increased use of combined transport is included in the Low-Emission Strategy of the European Union.

The desired modal shift induced by this initiative should take place due to deliberate decisions made by the market operators. This means that the amendment should improve the competitiveness of combined transport as an alternative to road only transport through simpler use of the beneficial regulatory regime and higher effectiveness of the economic support measures.

The specific objectives relate to the identified problems and their drivers, aiming at alleviating the underlying root causes as follows :

1. Clarify the definition of CT eligibility conditions (SO1).

The aim of this simplification is to reduce the practical problems faced by both the industry as well as the authorities. A simpler regime should also motivate the take up of combined transport by further market operators. This specific objective should be reached by addressing the following specific drivers:

- Complex and narrow eligibility criteria : the definition of CT should be reviewed to specify and clarify :
 - o the geographical coverage;
 - o the road legs;

¹¹² [http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016XC0719\(05\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016XC0719(05)&from=EN)

¹¹³ The initiative contributes to the Commission general objectives No.2 "A Connected Digital Single Market", No.3 "A Resilient Energy Union with a Forward-Looking Climate Change Policy" and No.4 "A Deeper and Fairer Internal Market with a Strengthened Industrial Base".

- the non-road legs;
- the load units
- Lack of effective enforcement conditions : the elements required for proof of eligibility should be specified and clarified :
 - Required data
 - The data presentation format
 - The place of control

2. Further stimulate the competitiveness of combined transport (SO2).

This objective addresses the market failures and inherent disadvantages of intermodal transport as well as infrastructure problems with an aim to increase the competitiveness of combined transport by reducing end-user prices. To ensure that the measures remain effective and efficient, regular analysis and review is necessary. This specific objective should be reached by addressing the following specific drivers:

- Narrow scope of support measures : extending the current operational support (road tax deduction for rail/road CT to all modes) should be assessed
- Limited monitoring and no review mechanism : measures to reinforce the monitoring of CTD uptake and how to review support measures should be specified and/or clarified :
 - Data collection of CTD uptake
 - Transparency of measures adopted at MS level
 - Cooperation between MS
 - Review mechanism of support measures

3. Increase the investment in and the capacity of intermodal terminals (SO3)

This objective addresses directly the problem of lack of intermodal infrastructure and in particular the lack of and limited capacity of terminals.

These specific objectives are complementary and need to be addressed at the same time. Improving access and availability of intermodal infrastructure is a precondition for the development of intermodal transport. While the simplification of the eligibility criteria may, depending on the selected option, result in a change of eligibility as compared to the current Directive and thus exclude some of the current beneficiaries, a reduction of practical problems is highly desired by both industry and Member States. Simplification of eligibility criteria and controls thereof is particularly important for the use of the regulatory beneficial regime foreseen in the Directive as it is difficult to ensure correct application of complex definitions during road side checks. Furthermore, achieving this will also help to better enforce the EU road transport regulations; in particular as regards weights and dimensions and cabotage rules as both these EU instruments have a direct relation to the Combined Transport Directive creating a further beneficial regulatory regime. Thus the objectives of the current initiative are consistent with the objectives of the other transport initiatives currently pursued.

The specific objectives were explicitly supported by *stakeholders in the consultations* taking place in the run up to this amendment (open public consultations in 2014 and 2017, targeted consultation in 2017 and three dedicated stakeholder meetings between 2014 and 2017).

5. WHAT ARE THE VARIOUS OPTIONS TO ACHIEVE THE OBJECTIVE

As preparatory work for this impact assessment, the Commission carried out several studies and evaluations focusing on different aspects of the intermodal transport market as well as two open public consultations, one targeted consultation and 3 consultation meetings followed by literature review and in-house analysis.

Based on this analysis, the Commission has identified policy measures addressing the specific objectives, and more specifically the main drivers as listed above, and combined these in policy packages (options).

The policy measures addressing various root causes and drivers were considered after extensive consultations with the stakeholders.

5.1. Overview of retained policy measures

After a preliminary assessment of different policy measures, the following policy measures were retained for reasons explained below:

		Current measures	Measures proposed for analysis
Definition	Geographical scope	CT between MS	Extend to national only CT as supporting CT also in national context supports modal shift and results in the reduction of negative externalities ¹¹⁴ .
	Road legs	For rail-road CT, until nearest suitable train loading station, suitable not defined. For waterborne connection max 150 km.	For all modal connections allow max 150 km for each road leg. Change (negative impact) only on rail-road CT. Ensures that road legs are clearly limited while allowing reasonable catchment area.
			For all modal connections limit each road leg to 150 km or 20% of total door-to-door distance, whichever is longer. Allows longer road legs for long CT operations (more than 750km) to alleviate the problem of low-density of terminals in several regions, while at the same time allowing in areas where due to congestion shorter CT trips make economic sense to retain a reasonable catchment area.
			For all modal connections limit road leg to nearest suitable terminal, if Member States so decide. Combines the use of "nearest suitable" term from the current Directive (applies to rail) and from Weights and Dimension Directive (applies to waterborne intermodal transport). The need for longer road legs depends on terminal density and circumstances of the country.

¹¹⁴ This proposed measure notably builds on the experience in countries such as Germany or Austria, in which extending support to intermodal transport, including at national level, increased uptake. Note: Article 4 (cabotage exemption) has its "own" geographical scope established in the article ensuring that this exemption only applies to international transport. A change of the definition in Article 1 would thus not impact the scope of application of Article 4.

			No limitation. Assumes that profit maximisation by private economic operators ensures that the non-road leg is always used to its longest possible length to pay for the unit costs and transshipment costs.
	Non-road legs	Min 100 km	No limit for non-road leg but for short sea shipping, exclude island connections as no modal shift takes place. No limitation. Assumes that profit maximisation by private economic operators ensures that the non-road leg is always used to its longest possible length to pay for the unit costs and transshipment costs.
	Load units	Fixed list, incl. containers 20 feet+	Remove the minimum size limit to allow future innovation (urban transport, e-commerce) Limit the application to ISO/CEN standard based identified load units. Speeds the handling in terminals and supports the use of digitalised data.
Eligibility control	Required data	Operators choose type of transport documents. Minimum data requirements in Regulation 1 from 1960	No data requirement, operators can choose their transport documents and data on them. International conventions on transport documents continue to apply. Establish new data requirements that correspond to eligibility criteria to facilitate eligibility checks. Operators can still choose the type of transport document but have to fill additional fields.
	Data presentation	Stamped paper documents only.	Paper + electronic documents. MSs accept both for CT road legs, incl. pdf/jpg (operators to decide on type and format). Does not allow digital reuse of data, but is easiest and fastest to implement. Paper + electronic structured data: MSs accept both, EU agreed requirements, data standards and architecture (data not centralised, but retrieved on request, applications either private or public).
	Place of control	Document has to be in the vehicle for road side controls	Paper in vehicle or electronic in vehicles at roadside inspection retrieved upon request (carrier can contact HQ/shipper/client or app or database and retrieve it for presentation). Allows reuse of digital data. Data can be stored at shippers own location. Creates a market for new applications.
Economic support measures	Investment support	None in the Directive	Grants for building CT terminals. Terminal density needs to be increased in several parts of the EU, while in other areas terminals are reaching their maximum capacity. Without terminals there is no intermodal transport. Possibility to provide grants for shipper side handling equipment investments. Needed for new take-up of combined transport for those shippers who would continue using road only transport to avoid high initial investment costs.

	Operational support	Reimbursement of road vehicle tax based on rail distance for roro rail transport. Paid by MS where vehicles are registered on transport in that MS (mandatory). Exemption from vehicle tax for vehicles used exclusively for CT (optional)	Reimbursement of road vehicle tax for all load units in all CT, based on non-road leg distances, level of support up to the MS. Paid by MS where vehicles are registered on transport operations in that MS. Extension of the current scheme to connections with all non-road modes. Aim is to motivate road operators to switch to short distance road transport.
Grant per load unit shipped on CT, based on km of non-road transport, level of support up to the MS. Paid by MS where the transport organiser is established. Aimed directly at those choosing between road and CT transport. Basis on non-road-km motivates to use most of non-road transport.			
Reimbursement of transshipment costs, harmonised percentage level. Paid by MS where the transport chain organiser is established. Aimed directly at those operators choosing between road and CT transport. Addresses the additional cost of transshipment that is the main cost difference between road only and CT transport.			
Reimbursement of road rail and port (access) charges with harmonised percentage level. ¹¹⁵ . Paid by MS where the transport chain organiser is established. Addresses the issue of higher infrastructure costs compared to road transport.			
Administrative measures	Review	None	Review of economic support measures every 5 years at national level. Aims at ensuring that support measures are up to date and correspond to the needs of the sector.
	Data collection	MS to assist the Commission	Establish stronger obligations for MS to gather the data and share it with the Commission for reporting purposes.
	Cooperation between MS	None	Establish a contact network between Member States authorities.
	Transparency	None	Establish an obligation to publish rules and support measures in a single place.

Table 6: Retained new measures

The list of discarded policy measures and the underlying justifications are given in Annex 8.

5.2. Selection of policy options (and discarded options)

The retained policy measures were combined into four policy options (in addition to the baseline scenario), addressing each policy objective and problem driver, but with different levels of ambition. The precise measures and level of ambition of each policy option is described below.

Baseline scenario:

¹¹⁵ Such support measure could be complemented by higher reimbursement for the usage of zero emission vehicles on the road leg

In the baseline scenario, the Combined Transport Directive would continue to apply in its current form, providing regulatory support to operations covered by current eligibility criteria, relying on Regulation 11 from 1961 for information to be provided at road side checks and providing limited economic support to accompanied rail-road combined transport. The development of this scenario is analysed in section 3.1.

It should be noted that this option has no support among stakeholders. *The majority of respondents to the public consultation considered that continuing with the baseline scenario would have no or a negative impact on their operations (64%), on working conditions in the sector (53%) and in particular on the society and the environment (73%).*

Policy option 1: Minimal amendment with focus on simplification.

Under the policy option **PO1** the main aim is to improve the transposition and implementation of the existing Directive.:

- The geographical coverage remains unchanged (PM1);
- Minimal amendments will be proposed to simplify the complexity of the eligibility criteria in particular as regards the limitation on road legs, i.e. **single distance limit (150km)** for all modes of transport covered by the Combined Transport (PM8), while the non-road leg remains unchanged (min 100km) (PM8); *it should be noted that only 12% of respondents in the targeted consultations supported a fixed limit for all road legs.*¹¹⁶
- List of load units unchanged (PM11); *in the targeted consultation, a majority of respondents considering that no changes to the load units would have no or negative impacts on the volumes of Combined Transport*¹¹⁷
- The choice of data required for proof of eligibility would be left to the operators (PM15) and electronic documents (in addition to paper) for the road legs would be acceptable for Member States (PM18, PM21);
- The economic support measures will not be changed except extending the current support (reimbursement of road vehicle tax) to all modal combinations and all load units (PM25); *extending the existing support to all modal combinations was supported by most stakeholders (especially those engaged in waterborne operations) ,but this was deemed not sufficient (more economic support expected)*¹¹⁸
- Finally the conditions for reporting and monitoring would be reviewed in order to make them more effective. (PM29 to PM32); *this was supported by a large majority (90%) of respondents in the open public consultation*¹¹⁹

Policy option 2. Simplification of the eligibility criteria (definition) and the control thereof and providing more effective economic support.

¹¹⁶ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

¹¹⁷ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)– figure 45

¹¹⁸ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

¹¹⁹ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC) – figure 33

Policy option **PO2** focuses on the clarification and simplification of the eligibility criteria (definition of Combined Transport) and the conditions for eligibility control while opening up the option for more effective economic support. Two sub-options have been identified under this option, differing slightly in their ambition of extending the scope and the support measures:

a) Under policy option **PO2A** :

- the geographical coverage of Combined Transport is extended to intra-MS (PM2); *in the targeted consultation, more than two third of respondents (mostly from private sector) viewed a geographical extension as very positive.* It should also be noted that this measure, i.e. extending the scope of possible support measures to "national" combined transport operations is already applied, on a voluntary basis, in some Member States
- the principle that the road legs need to be effectively and numerically limited (in km or %) in order to support modal shift is confirmed (PM5); *from the consultations, and notably the stakeholder meetings, it appeared that the limitation of the road leg was the most discussed point, with a minority of operators wanting to remove any limitation on the road leg; however Member States expressed that such limitation of the road leg is essential;*¹²⁰
- for the non-road leg, the limitation of minimum 100 km is lifted, while the eligibility is restricted for SSS connections with/to islands as well as short ferry connections (PM9)
- the load unit is limited to ISO/ILU identified ones (PM12); *from the consultations, existing*¹²¹ *road/rail operators are strongly supporting this measure*
- for support measures, the current support (reimbursement of road vehicle tax for rail/road CT) (PM24) is complemented by the possibility for Member States to adopt additional (on an optional basis) economic support measures covering e.g. reimbursement of taxes or charges for vehicles or of (part of) transshipment cost of or of rail/port charges, (PM22, PM23, PM25, PM26, PM27, PM28); *Member States, especially those supporting Combined Transport, were not keen to have additional mandatory support but were open to optional flexible support*¹²²

b) Under policy option **PO2B**:

- the geographical coverage of Combined Transport is extended to intra-MS (PM2), as in PO2A;
- Member States are allowed to **extend the road legs** beyond the allowed numerical limit in option PO2A **up to the nearest suitable transshipment point** in case this is

¹²⁰ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

¹²¹ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

¹²² KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

further than the numerical limit; this is meant to reduce the possible contradiction with the Weights and Dimensions Directive as well as for addressing the particular difficulties in some Member States due to their geographic circumstances (PM5, PM6). *Several Member States, notably the ones making use of the Directive are supporting to maintain this notion of "up to the nearest suitable transshipment point".*

- for the non-load leg, it is the same as in PO2A (PM9);
- as regards load units, only ISO/ILU identified units are permitted, but the list is no longer limiting their sizes (PM13); *allowing any type of load unit was supported in the targeted consultation by 2/3 of respondents¹²³*;
- for support measures, there is an obligation for Member States to ensure that measures for investment support (i.e. for terminals) are put in place, without however prescribing or harmonising those measures; the other support measures are similar to the option PO2A (PM22, PM25); *as mentioned in the stakeholder meeting of 30 March, many operators are in favour of direct support for terminals¹²⁴*

For both PO2 options, as for PO1 and PO3, the conditions for reporting and monitoring would be reviewed in order to make them more effective

Policy option 3: Changing the eligibility criteria (definition) to cover all intermodal transport with mandatory support measures

Under the policy option PO3, there would be no limits on road and non-road legs or on load units allowing all intermodal transport to benefit from a beneficial regime. It is assumed that the economic market forces will ensure that the main part of the journey is carried by the non-road leg. As for the economic support measures, they are the same as in PO2B with the difference that the Member States will be obliged to adopt take such support measures. As for PO2B however, the measures will not be prescribed in the amended Combined Transport Directive, and hence Member States will have the liberty to choose their type. *It should be noted that several Member States, and most notably those who are actively making use of the Combined Transport Directive and supporting Combined Transport in their countries, have expressed their strong opposition of any additional mandatory economic support measures.*

Table 6 below summarises for each option the choice of different measures, per specific objective and problem driver. The marked cells show the chosen measure. For economic support measures, "O" denotes optional measures, while "M" denotes mandatory measures. "NH" refers to non-harmonised levels of support, i.e. that Member States can choose the level of support depending on national circumstances. All optional measures are also non-harmonised

	Measures	BL	PO1	PO2A	PO2B	PO3
Specific objective : Simplification of eligibility criteria and the controls thereof (SO1)						

¹²³ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

¹²⁴ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

Problem driver: complex eligibility criteria						
Geographical coverage	PM1: Only between MS (intra-EU)					
	PM2: Intra-EU and national CT					
Road legs	PM3: 150 km each for water, nearest suitable for rail					
	PM4: 150 km each for all					
	PM5: 150 km each or 20% whichever is longer					
	PM6: MS to allow to extent to nearest suitable for all					
	PM7: No limitation					
Non-road legs	PM8: Min 100 km					
	PM9: Excluding those SSS not having a road-alternative (island transport) and short roro SSS					
	PM10: No limitation					
Load units	PM11: List of unit as currently					
	PM12: Only ISO/ILU identified					
	PM13: List without size limit					
Problem driver: ineffective conditions for implementation						
Required data	PM14: Data requirements based on Regulation 11 from 1960					
	PM15: No data requirement nor requirements on documents					
	PM16: Establish new data requirements corresponding to eligibility criteria					
Data presentation	PM17: Only paper documents and stamp requirement					
	PM18: Paper + MS to accept existing electronic documents for CT road legs, incl pdf/jpg (operators to decide on type and format)					
	PM19: Paper + MS to accept electronic data, EU agreed requirements, data standards and architecture (data not centralised, but retrieved on request, applications either private or public)					
Place of control	PM20: In vehicles at roadside inspection (proof has to be present at all times)					
	PM21: Paper in vehicle or electronic in vehicles at roadside inspection retrieved upon request (carrier can contact HQ/shipper/client or app or database and retrieve it for presentation)					
Specific objective : Foresee dedicated investment support for intermodal investments						
Problem driver : No measures for infrastructure development						
Investment support	PM22: Measures for building CT terminals			O	M, NH	M, NH
	PM23: Grants for shipper side handling equipment investments			O	O	M, NH
Specific objective : Increase the effectiveness and efficiency of the economic support measures						
Problem drivers : too narrow and too low economic support						
Operational	PM24: Reimbursement of road vehicle tax for routed vehicles on train					

	PM25: Reimbursement of road vehicle tax for all load units in CT			O	O	M, NH
	PM26: Grant per load unit shipped on CT, lump-sum based on tkm			O	O	
	PM27: Reimbursement of transshipment costs					
	PM28: Reimbursement of road, rail or port charges					
Problem driver : ineffective conditions for reporting and monitoring						
Review	PM29: Review of economic support measures at national level					
Data	PM30: Updated data gathering obligation on MS					
Cooperation	PM31: Creation of contact network					
Transparency	PM32: Single place for all rules and support measures per MS					

Table 6: Summary of policy options and measures therein.

It should be however mentioned that two options that were originally considered in the inception impact assessment have been discarded:

- An option to address the issues only through soft law measures (guidelines, Communication with recommendations), described in the Inception Impact Assessment, was discarded as the specific problems relating to proof of eligibility (in particular the current provision allowing only (stamped) paper documents) cannot be addressed with soft law. Furthermore, the current scope of economic support covering only a minor part of rail-road transport is giving disproportional benefit to 6 companies carrying out ro-ro accompanied rail Combined Transport services, while not benefitting the majority of combined transport operators (as explained above only 2% of Intermodal Transport benefits from Combined Transport economic support). As a consequence, this option is replaced by an option with minimum amendment and accompanied by soft law.
- An option of using the definition of "intermodal transport" used in the Weights and Dimensions Directive as well as applying the regulatory regime of road transport on the road legs (for cabotage restrictions), also described in the Inception Impact Assessment, was also discarded: on the one hand, the definition of "intermodal transport" from the Weights and Dimensions Directive indeed covers also road legs of ocean going maritime transport, although in such specific operation there is no modal shift in the EU; on the other hand, as regards the application of the road transport regime on the combined transport road legs (e.g. no more cabotage exemption), *almost all stakeholders in the 2014 public consultation*¹²⁵ *agreed that the specific regulatory benefits (e.g. cabotage exemption, and higher weight through the W&D Directive) foreseen in the Combined Transport Directive are the most important part of the support provided to Combined Transport and necessary to ensure a level playing field with long-distance road transport.* It has been assessed to reduce the combined transport operation price up to 17.5%. Furthermore, as regards the provision on non-

¹²⁵ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

application of the road cabotage limitation on the combined transport road legs, as explained above, the CJEU has decided on several occasions that this "exemption" derives directly from the fact that Combined Transport operations between Member States is an international transport operation and cabotage limitations cannot be applied to international transport, even if the road leg does not cross a border. Taking this into account, the option to review (withdraw) the regulatory benefits has been discarded as contrary to objectives of the Directive.

6. WHAT ARE THE IMPACTS OF DIFFERENT POLICY OPTIONS

The economic, social and environmental impacts of various policy options are assessed either as initial cost of implementation or within the timeframe of the Transport White Paper modal shift target for road above 300km, that is by 2030.

The methodology used to assess the impacts the various options is to quantify the resulting modal shift for each option and to derive the related economic, social and environmental impacts for each option, on the basis of the modal shift. To achieve this, the impact assessment builds on the baseline scenario, projecting developments under current trends and adopted policies¹²⁶ and makes use of an in-house model for analysing the impacts on intermodal and combined transport (see Annex 4 for further details) with various modelling assumptions on the importance of different types of measures on the actions of economic operators (see Annex 4 for further details on the modelling assumptions). Where necessary due to the character of measures or the lack of data, the quantitative assessment is supplemented by a qualitative assessment.

The in-house model takes into consideration the expected evolution of road freight above 300km, the expected evolution of intermodal freight and the geographical coverage covered by the definition of Combined Transport in the Directive. For each option, the impact on the cost of the chosen simplification measures and/or of the new/updated support measures is applied to the various freight traffic types (i.e. intermodal freight traffic covered the CTD, i.e. the actual "combined transport"; intermodal freight traffic not covered by the CTD; the new shifted (from road) freight traffic). In the model, the volume of "modal shift" is also used as the basis for calculating the cost of externalities, and to derive the savings achieved by through the "modal shift".

General modelling assumptions (and limitations) (see Annex 4 section 1.2) include the following:

- For policy measures that are not mandatory (economic support measures) an average impact is assessed based on existing similar measures and their established impacts.
- The behaviour of economic operators is modelled based on existing experience from similar past and current measures.

¹²⁶ The Baseline scenario builds on the EU Reference scenario 2016 but additionally includes some updates in the technology costs assumptions (i.e. for light duty vehicles) and few policy measures adopted after its cut-off date (end of 2014) like the Directive on Weights and Dimensions, the 4th Railways Package, the NAIADES II Package, the Ports Package, the replacement of the New European Driving Cycle (NEDC) test cycle by the new Worldwide harmonized Light-vehicles Test Procedure (WLTP). It has been developed with the PRIMES-TREMOVE model (i.e. the same model used for the EU Reference scenario 2016) by ICCS-E3MLab. A detailed description of this scenario is available in the Impact Assessment accompanying the Proposal for a Directive amending Directive 1999/62/EC on the charging of heavy goods vehicles for the use of certain infrastructures, SWD (2017) 180

- Quantifying the impacts of optional measures requires making assumptions on the uptake of these support measures by Member States. For this reason, quantification, including modelling results, is only used to indicate the scale of expected impacts rather than their exact estimation.
- Member States that already have economic support measures in place that go beyond the current Directive, but are covered by any of the options, will keep these measures even if they are optional. This assumption has been used as modelling input.
- The impact on Member States budgetary burden is assessed based on examples from some Member States who have already used similar measures to support modal shift

Specific additional assumptions are provided in Annex 4 section 1.2.

Impacts of policy options are compared against the results of the baseline scenario in 2030, unless stated otherwise. Impacts of separate policy measures are explained at first occurrence.

6.1. Economic impacts

The economic impacts brought along with the amendment of this Directive are reflected in the changes of the costs of intermodal transport (market price as well as additional costs to shippers) and in resulting increased competitiveness of combined transport vis-à-vis unimodal road transport. This increased competitiveness induces from one hand modal shift and from other hand increases the profitability of existing intermodal transport which frees up assets for further investments in the sector. Thus, for each option, the impacts are assessed for operations already covered by the Directive, and for intermodal operations currently not covered by the Directive and thus not eligible for support (extension of the scope), as well as in terms of potential modal shift from road to combined transport resulting.

6.1.1. Competitiveness of combined transport and modal shift

Option PO1 has limited impact on competitiveness of the combined transport as well as on modal shift:

- While the amendment would simplify implementation and extend somewhat the support, the 150 km “hard” limit on road legs (PM2) would reduce the eligibility to the benefits as compared to the current Directive (from 41.7% to 37.4%). The reduction would affect rail-road transport where up to 25% of operations are expected to be excluded. For total combined transport, this would mean a reduction of eligibility of 10.72%. The Combined Transport operators who would be excluded would not only no longer benefit from the economic support but also not benefit from the regulatory measures including from the (e.g. added weight allowance and the cabotage exemption) resulting in an increase of up to 17.5% of costs for these operators. At the same time, the clear limit would considerably reduce the cost of problems resulting from non-homogenous transposition and implementation currently experiences by the industry. The industry has assessed these problems to create a cost up to 4.36% of total price per shipment for operations covered by the Directive.
- The extension of tax reimbursements of road vehicle tax to all Combined Transport operations covered by the Directive (PM25) would result in small reduction in the price of Combined Transport operations (0.14% for operations covered by Directive and 0.05% for intermodal operations on average).
- The impact of the introduction of mandatory acceptance of electronic documents such as e-CMR (PM18) is expected to lead to significant cost savings as analysed in the

impact assessment for amending the Regulation (EU) 1072/2009¹²⁷. The total savings due to this measure are estimated to be on average 5€ per shipment¹²⁸ and would apply to all intermodal transport operations as it is unlikely that electronic documents would not be accepted by Member States for operations not covered by the Directive if they are accepted for those covered. As in this option all types of electronic formats are allowed, no initial investment is considered necessary. However, this option also does not foresee specific data requirements and thus the effectiveness of road side checks cannot be improved.

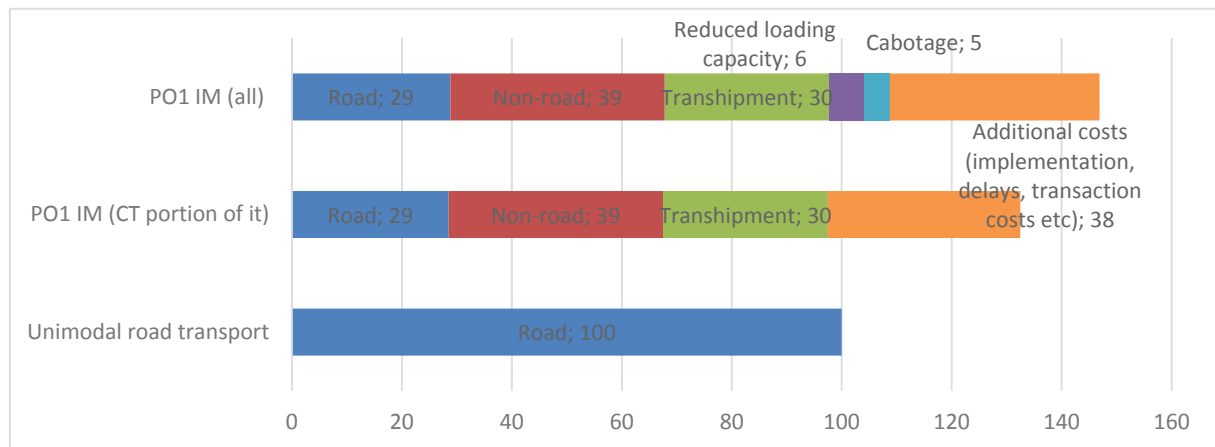


Figure 11. PO1 : Cost components for shippers of intermodal (total) and combined transport (only), percentages

While Figure 11 illustrates the effect of PO1 measures on the relative (%) cost components (and notably the additional costs) of intermodal transport and Combined Transport compared to road only transport, the total (absolute) cost reduction for existing intermodal (non combined transport) operations from the measures under PO1 is assessed to be 1.72%. For new combined transport operations, such cost reduction will be 1.89%.

As a result, it can be expected that the overall cost reduction impact of the PO1 measures would directly impact the market prices of intermodal transport, which would remain more expensive than road transport on average by 21.1%.

Policy option PO1 1 is expected to result in :

- additional modal shift in 2030 of **2.31 bn tkm**. Considering that the gap to reach the modal shift target is **52 bn tkm**, the modal shift target would not be reached neither in the trend nor in the optimistic scenario
- total economic savings for the industry (compared to current situation) would nevertheless be **€8.57 billion** between 2022¹²⁹ and 2030.

Implementing policy **option PO2A** is expected to bring along a considerably larger impact than option PO1:

- While it will, similarly to option PO1, reduce the eligibility for existing rail-road Combined Transport (up to 18% of operations) through a strict limitation on the road leg (PM5), this reduction would be offset in total by an increase of eligibility for the

¹²⁷ SWD (2017) 194 final

¹²⁸ SWD (2017) 194 final

¹²⁹ Date of estimated entry into force of the amended Directive

short sea shipping, where average non-road legs are longer than 750 km and thus a the suggested 20% limit for each road leg would allow to overcome the current 150 km. Furthermore, under this option, national combined transport would also be included in the definition¹³⁰. To ensure a more targeted impact, the eligibility is also restricted for short sea operations with to islands as well as short ferry connections. As a result, the eligibility to the benefits as compared to the current Directive would be increased from 41.7% to 66.9%. The impact of the definition combining a 150km minimum level with a 20% relative limitation allows including both very short operations in highly congested/urbanised areas as well as longer road legs for very long operations, but some remaining problems have to be presumed for in relation to the calculation of the percentages from the total trip.

- the **introduction of the mandatory acceptance of electronic** data for control purposes **in the form of structured electronic data** (PM19) along with clearly defined data requirements for proof of eligibility (PM16) is assessed to deliver between 2.7 and 2.8% of cost reduction. Using structured data instead of scanned documents considerably improves the efficiency allowing companies to directly integrate the relevant data applications into their accounting systems..
- Option PO2A also foresees considerably amended economic support consisting from of investment support (PM22-PM23) to build and extend the terminals as well as operational support (PM24-PM28). Both support measures are optional under this policy option. The impact on price of these measures is assessed to be ca. -4.5%. It should be noted that the terminal support measures will have a delay in bringing positive impacts as planning and approval processes take time, as does building itself. The current analysis assesses the impact by 2030 in line with the Transport White Paper target, but positive impacts can be foreseen to continue well after 2030.

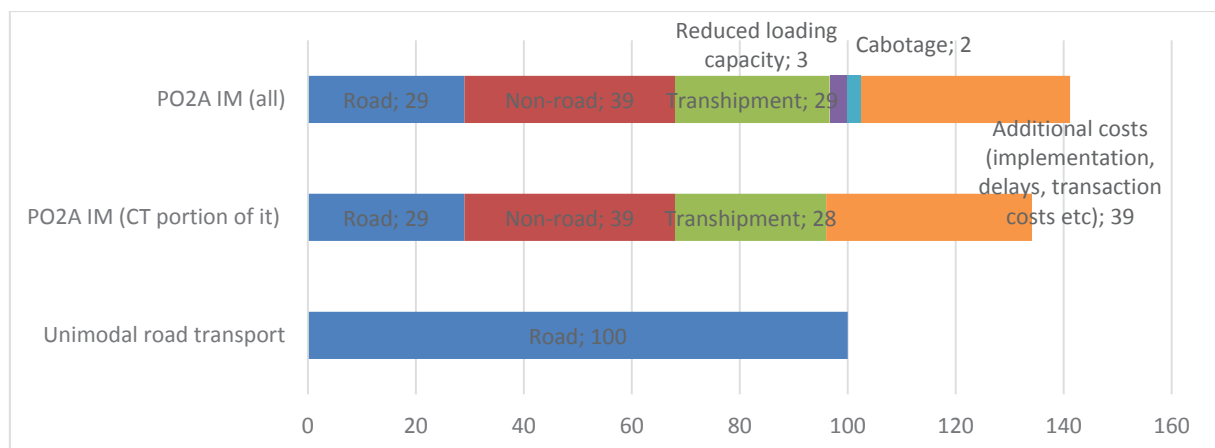


Figure 12 . Cost components for users of intermodal (all) and combined transport (only) under option PO2A, percentages

While Figure 12 illustrates the effect of PO2A measures on the relative (%) cost components (and notably the additional costs) of intermodal transport and Combined Transport compared to road only transport, the cost reduction for existing operations from the measures under PO2A is assessed to be respectively 8.7% and 7.9% for existing operations covered under the Combined Transport directive and operations newly covered under the amended regime.

¹³⁰ This extension would not apply to Article 4 (cabotage exemption) as explained in Table 4/footnote 42

As a result, it can be expected that the overall cost reduction impact of the PO2A measures would directly impact the market prices of intermodal transport, which would remain more expensive than road transport on average by 15.6.

Policy option PO2A is expected to result in:

- additional modal shift in 2030 of 44.45 bn tkm (still falling short of the modal shift target of 52 bn tkm)
- the total economic savings for the industry €44 billion between 2022 and 2030.

Under **option PO2B**:

- the eligibility of Combined transport would be slightly increased to 72.7% of all intermodal operations.. The difference from PO2A comes from the possibility given to Member States to allow road transport to the *nearest suitable terminal* (PM6) beyond 150km or 20% whichever is longer (PM5). In some countries it may be necessary to allow longer road legs when the terminal density is not enough too low to allow intermodal transport to benefit from the support measures. Road legs until the nearest suitable loading station are allowed currently for rail-road Combined Transport, so no negative impact is foreseen expected for this type of Combined Transport.
- Impacts can however be expected, for inland waterways and short sea shipping Combined Transport where currently the hard limit of 150 km applies. In terms of inland waterways essentially all operations are covered within the 150km limit already today limit; in terms of short sea shipping however an estimated 12.5% of additional operations are expected to benefit from the regulatory regime as compared to option PO2A
- The inclusion of the possibility to extend the road legs until the nearest suitable terminal has an impact on the effectiveness of control of eligibility as controlling the suitability does create practical problems today. It should be noted that as the Weights and Dimensions Directive already allows Member States to extend the eligibility to the nearest suitable terminal for waterborne transport, the impact is limited to those Member States who would not like to extend the weights and dimensions rules to all intermodal transport as defined in the Weights and Dimensions Directive (including combination road plus ocean going maritime transport), but would like to extend it to combined transport where road legs are limited and modal shift takes place within the EU.
- A further cost reduction in price is brought along by economic support measures. The main difference compared to Option PO2A is that the investment support for building terminals (PM22) is mandatory though not harmonised across Member States. This measure is expected to further decrease by ca 4% the cost of operations compared to Option PO2A. .

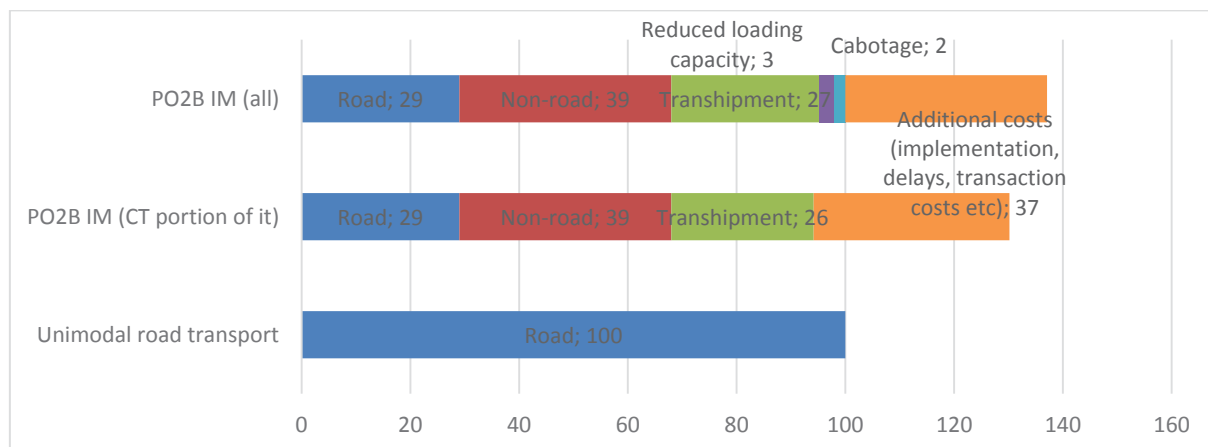


Figure 13. Cost components for users of intermodal and combined transport under option PO2B, percentages.

While Figure 13 illustrates the effect of PO2B measures on the relative (%) cost components (and notably the additional costs) of intermodal transport and Combined Transport compared to road only transport, the cost reduction due all economic support measures is assessed to reach 8.7%, resulting in a total cost reduction of 12.5% for existing operators covered by the Combined Transport directive and 11.9% for operations newly covered under the amended regime

As a result, it can be expected that the market prices of intermodal transport under PO2B would remain more expensive than road transport on average by 11%.

Policy option PO2B is expected to result in :

- an additional modal shift in 2030 of 69.6 bn tkm and thus exceeding the target modal shift of 52 bn tkm
- the total economic savings for the industry would be around €64.6 billion for the period between 2022 and 2030.

Policy option PO3 is an option for supporting EU intermodal transport to the largest extent possible.

- The extension of the scope (no road limits, no unit limits, no data requirements) (PM13, PM7, PM10, PM15) would be considerable as the overall eligibility would reach 100% (70% more intermodal transport operations would be eligible). NOTE : It is strongly supported by industry stakeholders but does not receive the support of several Member States.
- The cost reduction resulting from the removal of administrative measures because of the absence of limits and the needs to verify them would reach around 4% and the mandatory nature of economic measures would also further influence the cost of operations.

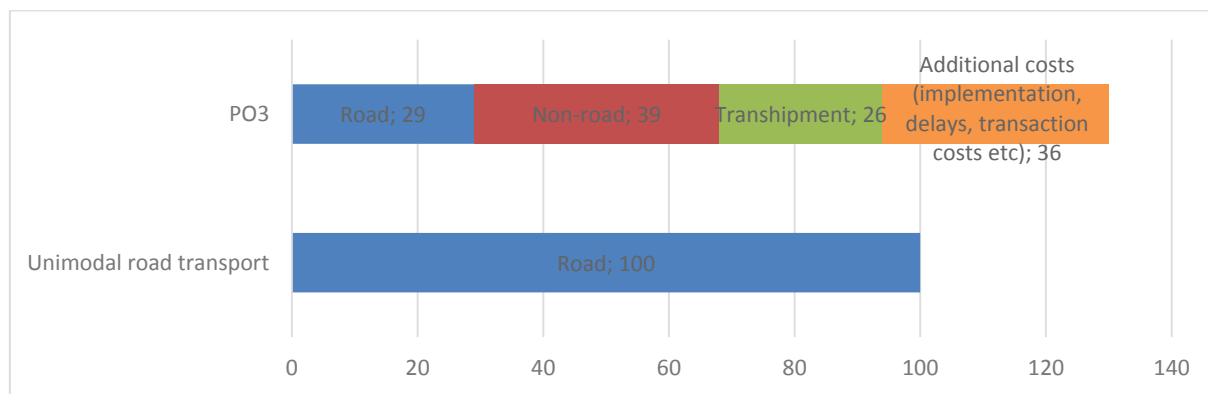


Figure 14 . Cost components for users of intermodal and combined transport under option PO3, percentages.

While Figure 14 illustrates the effect of PO3 measures on the relative (%) cost components (and notably the additional costs) of intermodal transport and Combined Transport compared to road only transport, the overall cost reduction is expected to be 17.5% for existing operations covered by the CT directive and 14.5% for new operations newly covered under the amended regime

As a result, it can be expected that the market prices of intermodal transport under PO2B would remain more expensive than road transport on average by 8.5%.

Policy option **PO3** is expected to result in :

- an additional modal shift in 2030 of 176.5 bn tkm, largely exceeding the modal shift target of the 2011 White Paper target
- the total economic saving for the EU industry would be up to €101 billion for the period until 2030.

6.1.2. Impact on SMEs

Every intermodal transport operation involves many different operators. While operators in the area of rail transport and shipping tend to be big- medium or large companies, operators in road transport and inland waterways are often SMEs. According to Eurostat, in particular in the road transport sector, close to 100% of companies are with employ fewer than 250 employees, while 90% are micro-enterprises. Among logistics operators and freight forwarders, the EU has some of the world largest operators, but also a large part of the business is handled by SMEs, in particular as regards national operations.

The SMEs in particular benefit from the support of the Combined Transport directive to compete with the cheaper long distance road transport as they do not usually neither benefit from economies of scale available to large enterprises who carry out all parts of the combined transport operation (organising, transport, transshipment) nor can they cross-subsidise between different activities as they usually only carry out one type of activity.

An increase of combined transport operations will have a positive economic effect on SMEs focusing on short distance combined transport road legs as more road legs need to be carried out. As opposed to long-distance road transport, a combined transport operation usually involves two different road transport operators at each end of the operation. Furthermore, the price per kilometre of short distance haulage is higher than on long distance operations and thus profitability per kilometre is higher, and there are less losses due to inability to fill empty trucks on the long distance return.

As regards SMEs who act as freight forwarders and logistics operators engaged in organising combined transport operations, or as combined transport operators, rail and waterways undertakings carrying out combined transport operations, the effect is expected to be positive if the business opportunities increase.

As **policy option PO1** will bring along a reduction in the eligibility in of the rail-road sector in particular for road legs, the impact on SMEs carrying out these road legs is negative as a through loss of business can be expected. However, the introduction of the possibility to use electronic documents, in particular if this does not entail any particular investment as all types, including photos and pdf files are allowed would reduce the cost for SMEs for whom the investment into new technology can be a high burden.

The impacts on SMEs of policy options **PO2A and PO2B** are expected to be comparable to each other, with policy option PO2B expected to bring along a higher shift to intermodal transport thanks to wider definition of the eligibility criteria. However, the introduction of electronic structured data for control purposes may bring along relatively high investment costs for SMEs engaged in organising the transport operation and preparing the data. According to operators, the cost of investment would be in correlation with the size of companies, with expected additional one-time cost for introducing electronic reporting was assessed to be in the range of 137.250€ per company (companies with less than 200.000 shipments a year)¹³¹. This cost would however be offset by the savings that the use of electronic data provides, estimated to be €145.000 per company per year. The impact for SME operators using the new systems should thus be small and positive.

For Option **PO3**, the main difference, as compared to Option PO2B, relates to the considerable extension of the scope of the Directive that would have a temporary negative effect on the long distance road transport operators while some of them switch into short distance intermodal road legs operations. It may also have a small negative effect on the SMEs in the road transport sector especially those active in national transport operations as a wider range of transport operations would not be subject to quantitative limitations under the Regulation 1072/2009/EC.

6.1.3. Compliance costs

As this Directive is not a regulatory Directive and does not foresee any obligations on economic operators, there are also no compliance costs as such. It is up to the operator to decide if they want to benefit from the beneficial regime or not. If the operator wishes to benefit from the regime, two types of costs can occur:

- The one-time costs deriving from changing the transport operation so that it fulfils the eligibility criteria are assessed by industry to be in the range of 200-1000€ depending on the complexity of the operation. This is equal to the cost of organising a new combined transport route to a new destination;
- Cost of using the transport documents/electronic data solution that fulfils the conditions of Article 3. As mentioned above, the one-time cost for introducing electronic data solutions is assessed to be in the range of 137.250€ (companies with less than 200.000 shipments a year) and up to 1 million for companies with more than 200.000 shipments a year. This is however quickly offset by the savings that the use of electronic data provides, estimated to be €145.000 per company per year.

¹³¹ TRT (2017) – Gathering additional data on EU combined transport – Final report

6.1.4. Member States budgets

The economic support to modal shift induces considerable costs for Member States. The level of additional budget burden depends largely on the support measures chosen by Member States and on whether support measures already exist.

Option PO1 amends the economic support measures by extending the current tax reimbursement to all modes and all eligible load units. The expected cost of this measure for the period until 2030 is assessed to be €228 million for the whole of the EU. The costs do not distribute evenly between Member States.

The mandatory acceptance of electronic transport documents (PM18) by enforcers could lead to estimated savings of €14.4 million assuming that total time needed to carry out checks is reduced by 10%¹³². The set-up costs of this measure are considered to be limited, given that most of the necessary infrastructure is already in place¹³³.

Total costs to Member States under option PO1 are expected to be €228 million for the EU 28 (€214 million in case of acceptance of e-documents), or €28.3 million a year.

Option PO2A foresees optional support measures both for terminal building as well as for operations support (PM22-28). Several Member States already have one or several of these measures in force (19 Member States for operational support, including those relating to taxes and charges and 5 for investment support). Including optional support measures in the Directive is expected mainly to increase the likelihood that Member States would continue with these programs as well as somewhat increase the likelihood for the uptake of these support measures by other Member States through the publicity of reporting. Increase of the budgetary burden is up to the Member States to decide.

Under option PO2A, it is expected that 33% Member States will select one or more operational support while 50% of Member States. This difference is based on the assumption that, when given the choice, Member States would rather opt for investment support, as it is more efficient.

Thanks to these measures, the terminal capacity is expected to increase by 4 percent between 2022 (expected time of application of support measures) and 2030. Extrapolating from the experience of Germany, in which the average marginal cost of adding one load unit of capacity was 172€, from which the public support was 121€ (70%), the total cost for EU for 4% increase in loading capacity is thus €528.6 million, from which public support is up to €370 million (with an assumption of 70% public support). This public support can originate inter alia from EU funds. Operational support is expected to amount on average 1.5% of the Combined Transport market price and be taken up by a third of Member States. Under these assumptions, the cost to Member States until 2030 is €1.7 billion over 9 years.

As regards acceptance of electronic documents (PM19), the option does not foresee a public investment for setting up an infrastructure for data exchange, but rather assumes that this will

¹³² Assumption from SWD(107) 194 final – see below

¹³³ SWD(2017) 194,final Impact assessment accompanying the Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EC) No 1071/2009 and Regulation (EC) No 1072/2009 with a view to adapting them to developments in the sector

be provided by third party private operators. As pointed out earlier, the Commission is working on a separate initiative and its impact assessment on introducing detailed rules on the acceptance of electronic documents by Member States authorities. It is assumed that the conditions foreseen in the ensuing policy measure(s) would also apply to intermodal transport. This impact analysis, which is still in a preliminary stage, does not yet provide cost calculations.

Total cost to Member States is thus expected to be around €1.7 bn 2022-2030.

In option PO2B the terminal support is mandatory, but operational support is optional.

Option PO3 establishes an obligation to take measures for terminal support as well as one or several measures for operational support. Including mandatory support measures in the Directive may lead to a reduction of administrative burden for Member States as regards the state-aid notification (including for renewal of measures every 5 years) and thus increase the likelihood that Member States would to continue their existing programs. The level and conditions of the terminal building support, including co-financing through other EU funds, depends on the Member State.

In both options the terminal capacity is expected to increase by 8%, bringing along a cost of €2.23 bn 2022-2030, from which public spending is bn. €1.56 or €80.75 million a year. In option PO2B the operational support is expected to amount to a total cost of €2 bn and in option PO3 to €7bn. The relative division of support between Member States is shown on graph 11 based on above assumptions.

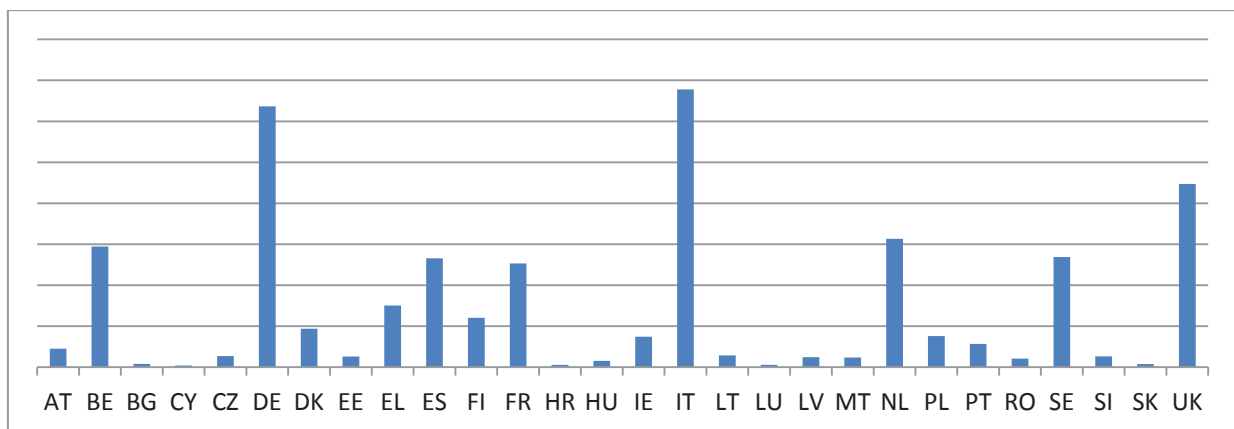


Figure 15. The relative division of support between MS, based on relative share of operations and transshipments in 2015

Total cost to Member States of option PO2B is expected to be €2.96 bn and of option PO3 €8.2 billion between 2022 and 2030.

6.1.5. Regional distribution of impacts

High road transport volumes affect central and peripheral regions differently and thus the relative benefit of modal shift is more important in central regions where transit traffic volumes are high. However, due to higher transport volumes, the need for investment in terminal capacity is also higher in these regions, as well is as in regions connecting European transport with international operations (large ports). These regions have already relatively high intermodal transport volumes as compared to peripheral regions. They also have well

established national support programmes and different negative measures (tolls, congestion charges etc.) in place to motivate the modal shift, however due to high transport volumes in general, the potential for modal shift remains high also in these regions.

The largest regional differences relate to terminal density. Peripheral regions in particular in north and east have currently low terminal density (see map in Annex 6 for a map) and any increase in terminals coupled with operational support in these regions has the potential of improving the modal shift drastically.

Additional distributional effects can also be foreseen in PO3 as regards the considerably wider use of cabotage exemptions, shifting profits from North/Western Member States to East/Southern Member States¹³⁴.

6.1.6. Impact on third countries

The third country operators can only benefit from the Directive through the regulatory measures if they are legally carrying out combined transport road legs in the EU or crossing the EU external border (governed under respective bilateral agreements). The third country logistics companies, freight forwarders and other CT operation managers can benefit from the Directive's regulatory benefits if the operations fulfil the eligibility criteria of the Directive. The impacts of this amendment as regards economic benefits would be the same as for EU operators.

6.2. Environmental impacts: reduction of external costs through modal shift

The reduction of negative environmental impacts is the main general objective of this Directive and the options were designed so as to ensure additional positive environmental impacts. Depending on the options of the impact assessment, it is expected that between an additional 0.09% and 7.25% of the road freight volume would be shifted by 2030 to other modes of transport, amounting to 36000 long distance lorries less on the roads daily.

The positive environmental impacts of the policy options result from modal shift away from unimodal road transport by 2030. The impacts have been derived drawing on the PRIMES-TREMOVE model and are reflected in the below table in millions of euros of costs saved. The below table does not show the total external cost savings of intermodal transport, but only additional savings thanks to the implementation of the options)

million euro in 2013 prices for 2030			PO1	PO2A	PO2B	PO3
Accidents			6	107	170	431
Noise			2	29	46	116
Congestion			37	703	1119	2839
Air Pollution	NOx		3	55	87	222
	PM		0,1	3	5	12
Climate change			7	2	197	500
Total additional external costs savings			54	1020	1624	4120

¹³⁴ SWD(2017) 194 final - According to the impact assessment on the amendment of Regulation (EC) 1072/2009, 80% of cabotage operations take place in 5 Member States and there is virtually no cabotage in EU-13 Member States (i.e. 13 Member States which joined the EU in 2004, 2007 and 2013).

Table 6. Additional external costs savings by 2030 thanks due to the modal shift induced by the proposed policy options, PRIMES-TREMOVE Transport Model compared to the Baseline

The savings from the shift to intermodal transport are considerable. The total savings from intermodal transport (baseline plus additional savings from relevant options) were calculated for the trend and optimistic scenario and for the average growth scenario. The average total external costs savings ranges from €13.7bn (PO1) to €16.7bn (PO3) in 2030. The savings from particular options increase in correlation with the modal shift they induce (Table 6) and thus the difference between the PO1 and PO3 is very large (76 times).

As regards CO₂ emissions in particular, the savings increase with modal shift and thus options 2 and 3 involve a considerable saving reduction of CO₂ emissions. As shown in the analytical work underpinning the European Strategy for Low-Emission Mobility, cost-effective emission reductions of 18-19% are needed for transport by 2030 relative to 2005¹³⁵. This would require an additional reduction of CO₂ emission levels of about 206-221 Mtonnes by 2030 relative to 2005¹³⁶, 52 to 67 Mtonnes additional to the EU reference scenario 2016. While other EU instruments under the European Strategy for Low-Emission Mobility will also contribute to this target, the amendment of Combined Transport Directive can add 0.3 to 25% of the additional emission reductions needed depending on the chosen option (see table 7).

Changes to the air quality are also driven by the modal shift induced and thus vary considerably under the different options (see Table 7). The impacts can be significant ranging from 2.9% to 13.1 % in savings compared to the baseline scenario. These emission reductions from modal shift would be on top of emission reductions brought along by other EU instruments, such as the amendments of the Eurovignette Directive¹³⁷.

		BL	PO1	PO2A	PO2B	O3
CO ₂ savings (ktons of CO ₂)		0,0	195	3693	5881	14921
Air pollutants savings (tons)	NOx	0,0	222	4203	6694	16984
	PM	0,0	4	82	130	330

Table 7. Additional emission savings by 2030 by the proposed policy options PRIMES-TREMOVE Transport Model compared to Baseline

Additional benefits for the environment result in the reduction of noise levels, in particular thanks to the shift to waterborne transport and the economic benefits of positive impacts on climate change. Finally, in the medium and long term, impacts on land use create costs in terms of habitat loss and fragmentation. Modal shift and the reduction of congestion on roads lead to reduce the need to build new or expand existing road infrastructure and thus has a positive effect on land use as compared to baseline scenario.

6.3. Social impacts

All options will benefit the general public through the reduction of negative externalities such as pollution, congestion and traffic casualties, the magnitude of impact of each option depends on its ability to foster modal shift, thus **options PO2A, PO2B and PO3** would have impacts in growing order. The modal shift and the increase of combined transport operations will

¹³⁵ This outcome is in line with the 2011 White Paper which established a milestone of 20% emissions reductions by 2030 relative to 2008 levels, equivalent to 19% emissions reduction compared to 2005 levels, and with the 2050 decarbonisation objectives

¹³⁶ SWD(2016) 244 final

¹³⁷ SWD(2017) 180 final - Impact Assessment of the amendment of the Eurovignette Directive

certainly create some short term disturbances as jobs will shift from long distance road transport to short distance road transport. Based on the literature, it can be estimated that under the baseline scenario, ca 31 000 long-distance lorries are shifted to intermodal transport daily.

First, modal shift to intermodal transport will create more jobs in total. One combined transport operation requires the involvement of several modes of transport (short distance road transport and long distance transport by other modes of transport) as well as transshipment and terminal services to be provided as compared to only one driver in long distance road operations. On average partial employment of up to 10 people (e.g. 2 drivers for each road leg, 2 train drivers in case of rail/road, up to 3 workers at each transshipment terminal) will be needed for combined transport as compared to one long distance driver (with varying share of occupation per one shipment). Increase in full time equivalent employment is assessed to be up to 25%, including the job creation in and around terminals. Furthermore, this shift will create "jobs" with relatively better quality of life, i.e. "local" jobs, compared to jobs in long distance road transport, requiring long hours, and physical and time distance from home.

Despite this assessed relative increase and transformation of jobs, it is expected that in the short term, shifting freight from long distance road transport to more sustainable modes of transport, the direct impact in terms of jobs for road operators will be negative. However, in the medium and long term, the road operators (long-distance) can re-focus and adapt to operating the increasing number of road-legs of combined transport operations, which are relatively more profitable.

The impact of terminal support on the job creation will be positive. The Impact Assessment accompanying the proposal on the TEN-T guidelines¹³⁸ included the job creating potential of public spending on transport infrastructure. According to a conservative estimate, the investment of EUR 1 billion would generate 21,260 new direct, indirect and induced jobs.¹³⁹ More specifically, the support program of terminal building in Germany (1998-2015) with an investment value of €828.7 million was assessed to have had a large and positive social impact, with a creation of 4413 direct and indirect additional jobs and an additional value of €57.4 million per year and €1.15 billion for a 20 year operation of a terminal. With the jobs for the construction of the terminals also counted in, the result was 6431 jobs created and the value added for 20 year operations €1.17 billion¹⁴⁰.

For the investments assumed for under the different policy options, the increase in the direct and indirect jobs is assessed to be between 1428 and 4759 for the 9-year period, and the resulting economic benefit is between €108.42 and €361.41 million.

BL	PO1	PO2A	PO2B	PO3
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¹³⁸ Impact Assessment accompanying the Proposal for a Regulation of the European Parliament and of the Council on Union Guidelines for the development of the Trans-European Transport Network, SEC(2011) 1212 final

¹³⁹ First round effects concern direct employment in construction and materials supplying industries. A second round of employment and income effects occurs in the production sector in response to the demand for additional inputs required by construction materials supplying industries. A third round employment and income benefits occur in the guise of what is termed "induced" employment and reflects producers' response to an increase in the demand for all goods and services. Source: OECD, Impact of Transport Infrastructure Investment on Regional Development, 2002

¹⁴⁰ Hacon, Kombiconsult (2015)

Benefit from job creation (terminal support) M€	0	0	108.42	361.41	361.41
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Table 8. Economic value of the potential of the policy options to create jobs compared to baseline scenario by 2030

Shift away from road also brings along social impacts as related to public health. These impacts are directly related to the foreseen reduction in emissions of air pollutants, any possible noise level and the risk of accidents. The positive impact deriving from policy option PO1 is negligible, but impacts from options PO2 and PO3 are small and but positive leading to savings of up to €390 million by 2030.

7. HOW DO THE OPTIONS COMPARE?

The impacts induced by this amendment derive from two effects. On the one hand, the reduction of cost inducing difficulties brings along modal shift from road to intermodal transport thus having an effect on the modal composition of transport and on the negative externalities caused by it. This effect contributes directly to the main objective of the Directive to bring along modal shift and the resulting reduction of negative externalities. On the other hand, the amendment also brings along simplification of operations resulting in reduction of cost for existing intermodal and combined transport operations. This makes it more competitive vis-à-vis unimodal road transport and allows the operators to use the freed up assets for investments into the sector in the long term. The policy options have been analysed for both effects and the results combined.

As regards the modal shift and resulting reduction of external costs, the options clearly have different levels of impact and thus fulfil the objective of the Directive and the amendment differently. Policy options PO2B and PO3 are the only ones allowing the EU to reach its target set in the 2011 Transport White Paper for modal shift (30% of long distance road freight to be shifted to more sustainable means by 2030)¹⁴¹. The Option PO3 has clearly the largest impact on modal shift, *however it also brings along high cost*.

2030	BL	PO1	PO2A	PO2B	PO3
Modal shift induced by the option, percentage points of road freight	0	0.09	1.79	2.86	7.25
Modal shift induced by the option, bn tkm	0	2.31	43.68	69.56	176.5
Additional growth of intermodal transport due to modal shift, percentage points	0	0.28	5.37	8.55	21.7
Modal shift target achievement (bn tkm)	249	251	292	319	426

Table 9. Modal shift under different options, tkm.

7.1. Key economic, social and environmental impacts

The analysis of **economic impacts** shows the most important differences. The main trade-off is between reduced price/costs and resulting savings for intermodal transport operators and costs to Member States authorities as well as costs to competitors.

	BL	PO1	PO2A	PO2B	PO3
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¹⁴¹ Based on the 2005 road transport data, this amounts to 301 bn tkm

Expected impact on intermodal transport market prices	0,0%	-1.89%	-7,8%	-11.9%	-14.5%
Market price difference compared to road transport	23%	21.1%	15.2%	11.1%	8,5%

Table 10. Expected impact of different options on market price evolution of intermodal transport

Table 10 above illustrate the impact on expected market price for intermodal transport of the various options, and notably the expected cost reduction expected in each option.

Table 11 illustrates the impact (%) of the various cost reductions of each option on the additional cost of combined transport and intermodal transport compared to road only transport operations.

	BL	PO1	PO2A	PO2B	PO3
Additional cost (including cost components not reflected in market price) for CTD operations compared to road transport operations	38%	33%	34%	30%	30%
Additional cost (including cost components not reflected in market price) for all intermodal operations compared to road transport	48%	47%	41%	37%	30%

Table 11. Impacts of various options on cost competitiveness of intermodal and combined transport

All the options improve the competitiveness of intermodal transport but differences are considerable. In all options, the intermodal transport remains more expensive than unimodal road transport on average distances.

The price reduction however results in reducing the breakeven distance allowing medium and long distance combined transport to compete better with long distance road transport. It is not economically efficient to endeavour to make the short distance combined transport economical.

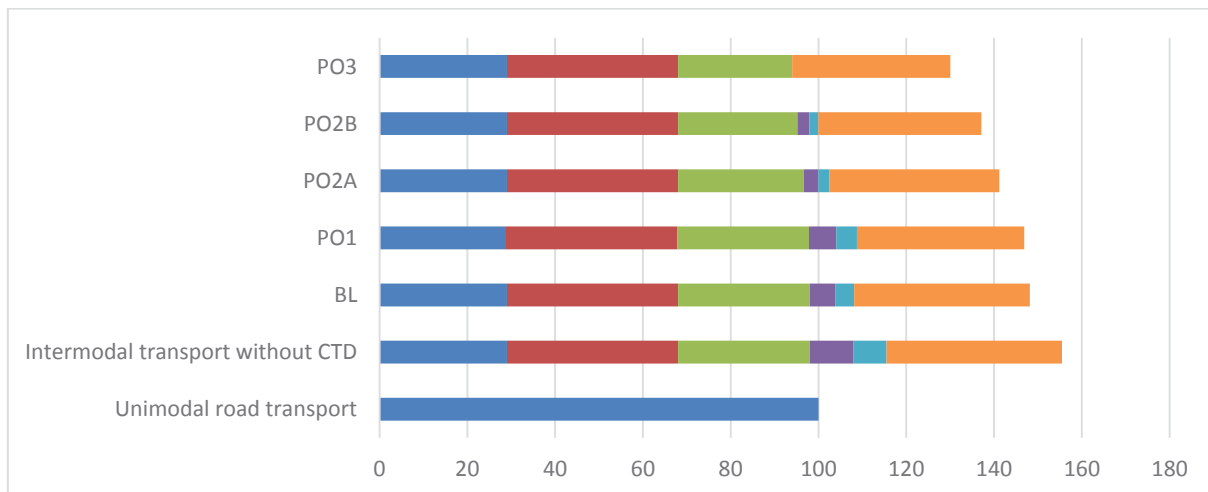


Figure 16. Summary of comparison of road and intermodal transport costs, all options, average distances, in percentages

In terms of **environmental impacts**, while option PO3 gives the highest absolute total savings in external costs, it should be noted that PO3 would also result in an increase of heavier vehicles on the road (due to the large extension of the weights and dimensions exemption for intermodal transport), and hence cause substantial additional costs on the road infrastructure. That is why, when comparing to the costs to Members States with the

environmental benefits, option PO2A and option PO2B are the more environmentally efficient.

	BL	PO1	PO2A	PO2B	PO3
External cost saving through additional modal shift (2022-2030) (bn €)	0	0.054	1.02	1.624	4.12
Total cost for authorities (bn €)		0.23	1.7	2.9	8.2
B/C		0.234783	0.6	0.56	0.502439

Table 12. Environmental efficiency

In terms of **social impacts**, all options will make a positive contribution, however due to large distributional effect in option PO3 on road operators (through the extension of cabotage exemption to unlimited road legs), the option PO2B is more efficient.

compared to Baseline 2030	BL	PO1	PO2A	PO2B	PO3
Achieving modal shift target	NO	NO	NO	YES	YES
Intermodal operations in EU covered by the Directive	41.7%	37.4%	66.9%	72.7%	100%
<i>Economic benefit</i>					
Increase of price competitiveness vis-à-vis road transport	0	2%	11%	16%	23%
Direct annual benefit from operational subsidies to industry	Very limited impact as less than 2% of total operations benefit and this is only partially transferred to end-consumer, €0.005 bn	Limited impact as less than 40% of total operations benefit and this is only partially transferred to end-consumer, €0.01 bn	Small positive impact as support is optional and not harmonised, €0.15 bn	Small positive impact as support is optional and not harmonised, €0.16 bn	Positive impact €0.74 bn
Benefit from reduced costs (annual)	0	€0.93 bn	€4.73 bn	€7.02 bn	€10.6 bn
Effect of extension of eligibility for regulatory measures on road hauliers	0	Ca 0,1% of road hauliers loose the eligibility	1.9-2.8% of road hauliers are affected by the extension of eligibility for regulatory support, mostly through distributional effect and switch from long-distance to short-distance operations.		
Budgetary implications (annual)	€0.01bn	€0.025 bn	€0.19 bn	€0.33 bn	€0.9 bn
<i>Environmental and social benefit</i>					
External cost saving through additional modal shift (2022-2030)	0	54	1020	1624	4120

Additional reduction of CO2 emissions (kton)	0	195	3693	5881	14921
NOx savings (tons)	0	222	4203	6694	16984
PM savings (tons)	0	4	82	130	330
Impact on jobs € bn			108.42	361.41	361.41

Table 12. Main economic, environmental and social impacts.

7.2. Effectiveness

The effectiveness of the options depends on their ability to deliver the specific objectives set for this amendment. This is analysed in table X.

compared to Baseline	PO1	PO2A	PO2B	PO3
General objective: Increase the competitiveness of intermodal transport vis-à-vis unimodal road transport				
Increase of price competitiveness vis-à-vis road transport	+	++	++	++
Specific objective 1 : Simplification of eligibility criteria and the controls thereof (SO1)				
Problem driver: complex and narrow eligibility criteria	+++	++	++	+++
Problem driver: lack of effective enforcement conditions	+	+++	+++	+++
Specific objective 2: Increase the effectiveness and efficiency of the economic support measures (SO2)				
Problem driver : narrow scope of support measures	+	++	++	+++
Problem driver: limited monitoring and no review mechanism	++	++	++	++
Specific objective 3 : Foresee dedicated investment support for intermodal investments (SO3)				
Problem driver: lack of intermodal infrastructure (lack of terminals)	0	+	+++	+++

Table 12. Effectiveness of policy options

7.3. Efficiency

Efficiency shows the relation of achieved results and the necessary costs to do so. The major costs for the policy options come from the economic support schemes, in particular the operational support. The investment support has a delay in application as described above but at the same time a cumulative effect as terminals can be used for many years beyond the analysed period (ca 20 years without serious upgrade).

compared to Baseline, (2022-2030)	PO1	PO2A	PO2B	PO3
Total cost for authorities	€0.23 bn	€1.7 bn	€2.9 bn	€8.2 bn
Total benefit for society	€8.6 bn	€44.7 bn	€66.3 bn	€104.2 bn
Return on investment	38	26	22	12

7.4. Coherence

The objectives of the amendment are in coherence with EU transport policy in general as well as EU policy on reducing the negative externalities and in particular reducing the emissions from the transport sector as discussed above. The results of the amendment contribute to the objectives of EU transport, environmental and climate policy. Only options PO2B and PO3 support the achievement of the target set in the EU transport policy White paper of 2011.

As regards increasing the competitiveness of intermodal transport, other previous and current initiatives address the same problems in a complementary manner. In particular, the Weights and Dimensions Directive foresees support for intermodal transport with an aim to compensate the additional weight of the empty load unit. The initiative complements also the EU initiatives for liberalisation and improved functioning on rail, inland waterways and short sea shipping also complement as well as the EU initiatives to support Corridor development and EU investment instruments.

None of the options foresee a contradiction with the road regulation. International road transport, the competitor of international intermodal transport is fully liberalised in the EU. The rules applying to road legs of combined transport between Member States further stress that road legs, even if not crossing the border, are an integral part of the international transport operation and cannot be seen as national transport. This has been confirmed by the CJEU several times. The national road transport is subject to rules established in Regulation (EC) 1072/2009. None of the options foresees to liberalise the road cabotage rules for purely national combined transport operations.

7.5. Proportionality

None of the options go *per se* beyond what is necessary to achieve the objective.

The choice of instrument (amendment of the Directive) is adequate as it allows satisfactory achievement of the objectives that soft law would not be able to target as discussed in the section Baseline.

The scope of the options is limited so that the options do not impose mandatory levels of economic support leaving the level and methodology of support to national competence. It is thus up to the implementers to ensure that support, in particular operational support, is limited to those operations that need the support. Costs to Member States, businesses and citizens are limited as compared to potential benefits. In particular terminal support will continue to yield benefits beyond the analysed period.

As a matter of fact, none of the options eliminate totally the price gap between road transport and intermodal transport. Option PO3 reduces the gap most, but comes with heavy price tag.

7.6. Subsidiarity

The objective of the amendment of the Directive is to further promote the shift from road freight to more environmental friendly modes of transport, and hence further reduce the negative externalities of EU transport system. This objective is pursued by extending the framework of measures in support of combined transport and by simplifying and clarifying the Directive. This objective cannot be sufficiently achieved at Member State level considering because the majority of freight combined transport is of cross border nature and relies on an intermodal infrastructure across member States.

Considering that close to 20% of European intermodal transport is national (intra-Member State) and currently not covered in the Directive, extending the geographical extension of national combined transport operations will therefore enlarge the scope of support measures applicable to promote modal shift, moving an additional portion of road freight to other transport modes. This would reduce overall externalities, and notably greenhouse gas emissions and congestion, which have an impact beyond national borders. Congestion at regional or national level directly affects all road users, including those engaged in international freight transport. In addition, road congestion, at least until it is managed, tend to propagate and produce spill-over effects potentially affecting more than one Member State in cross-border areas. Likewise greenhouse gas emissions and air pollution caused by road transport do not remain restricted to purely local areas and have a European dimension.

In addition, it is justified also to specify common support measures to be taken by the Member States as it will ensure that possibly divergent measures in support of combined transport would be taken at national level, if taken at all. In particular, as regards investment support measures for terminals, a common target, in terms of terminal density, is necessary to avoid that over capacity is built, especially along European main freight corridors.

8. CONCLUSION – PREFERRED POLICY OPTION

Based on the above assessment, it can be concluded that while the policy option PO3 would bring along the largest absolute economic benefits, its cost to Member States, and hence the overall return on investment, makes it less appealing than the other options, which have a higher return on investment ratio. Option PO3 is also less environmentally efficient than the options PO2A and PO2B. Policy option PO1 and PO2A do not deliver as regards the modal shift target of the 2011 White Paper for 2030. Furthermore, the policy option PO1 actually reduces the eligibility by 11% and thus causes reverse shift to unimodal road transport. Policy option PO2A reduced the eligibility of rail-road combined transport operations and does not ensure terminal support (optional) thus limiting its long-term benefits for the EU. Considering that Policy Option 2B ensures that the modal shift target for 2030 is reached, delivers a higher return on investment and environmental efficiency than Option PO3, **Policy option PO2B is therefore the preferred option.**

9. HOW WILL ACTUAL IMPACTS BE MONITORED AND EVALUATED

Taking into account the character of this Directive, it is of utmost important to regularly assess the impacts of the amended Directive and when necessary review the economic support measures so that they would reflect the market developments. Such review might mean reducing or increasing the support.

9.1. Review of the reporting obligation

An effective monitoring mechanism is particularly important as the current monitoring mechanism was concluded by REFIT evaluation to be ineffective by REFIT evaluation. Article 5 of the Directive establishes a biannual reporting obligation on the Commission with an aim to analyse regularly the need for further support. However, only two reports covering the years up to 1999 were ever published. The gap was filled with the wide-scope CT Study and its update covering the years until 2015.

The reason for not drawing up the reports was the fact that no comparable data is available from statistical sources. Most Member States who are supposed to assist the Commission in the exercise do not in reality gather or provide the data referred to in Article 5.3, but rather

gathered transport statistics based on four regulations that follow the logic of different modes of transport¹⁴².

Thus the reporting obligation in the Directive needs to be strengthened in order to allow a systematic analysis of the market. The Directive needs to make clear what data (definition) needs to be gathered and reported as well as what kind of analysis/report is produced by the Commission. The obligation to produce a report every two years could also be reviewed as developments on the market are usually slower.

9.2. Data to be gathered

The following data on market developments is necessary and should be gathered by Member States for effective analysis and reported to the Commission every 3 years:

- The evolution of the volumes of intermodal transport in general and combined transport as covered by the Directive, in TEU and tonne-kilometres, by different modal combinations and by different geographic scope.
- The distance matrixes of intermodal transport road and non-road legs
- The use of load units (types, shares)
- Number and average cost of transshipments
- Share of different cost components in the price of intermodal transport
- The total volume of economic support provided to combined transport, by type of support
- Number of intermodal terminals existing and their capacity as well as number of intermodal terminals built or extended with public support as well as by private funding and the added capacity during the reporting period. Average share of public funding in projects.
- Distance matrix for terminal locations
- Changes in the labour market such as jobs added or shifted from road transport to intermodal transport, working conditions etc.
- Number of infringements relating to intermodal transport (circumvention of road transport regulation through the CT regulatory regime)
- Other factors (regulatory, economic, political) having had major impacts on intermodal transport during the reporting period

9.3. Indicators for assessment

The following indicators should be monitored during the assessment of the effectiveness and efficiency of policy measure:

- a) Share of intermodal transport and combined transport (as covered by CTD) in road freight transport and in total freight transport in EU (including shipping in and between Member States), and its evolution
- b) Modal shift from road transport and in particular from long distance road transport (more than 300 km) to intermodal transport and combined transport, in tonne kilometres,
- c) Savings of external costs.
- d) Increase of intermodal transport volume per 1€ of support provided
- e) Increase of loading capacity of intermodal load units

¹⁴² Regulation (EU) 70/2012 (road transport), Regulation (EC) 91/2003 (rail transport, Regulation (EC) 1365/2006 (IWW transport) and Regulation (EU) 42/2009 (maritime transport). Eurostat publishes road/rail CT data by UIRR; using, however, different definition from the CT Directive and covering only 15-20% of the total CT volume in EU

- f) Reduction of average distance between intermodal terminals (by transport mode)
- g) Return of investment (ROI) of economic support to intermodal transport
- h) Cost comparison and development of road only transport and same distance intermodal transport (not eligible for support) and combined transport (eligible for support)

The benchmark for these indicators are partly (a, b) the baseline developments of this assessment and partly (c, d) will be established in the first report after all the changes have been phased in.

A first report should be published 27 months after the new framework enters into force, and then every 5 years .

9.4. Operational objectives

Based on preferred option the following operational objectives have been identified:

Indicator	Objectives and targets
Modal shift from road transport and in particular from long distance road transport (more than 300 km) to intermodal transport and combined transport	301 tkm (30% of long distance road transport in 2005) of road transport shifted to intermodal transport as compared to 2005
Savings of external costs	€4.04 bn between 2005 and 2030
Increase of loading capacity of intermodal load units	9000 loading units per million euros of aid
Reduction of average distance between intermodal terminals	Reduction of 20% of areas where distances between terminals are more than 300 km
Cost difference between medium distance (300-650 km) road only transport and intermodal transport per km	Less than 15% on average

ANNEXES

ANNEX 1: PROCEDURAL INFORMATION CONCERNING THE PROCESS TO PREPARE THE IMPACT ASSESSMENT REPORT AND THE RELATED INITIATIVE

1. Organisation and timing

The Directorate-General for Mobility and Transport (DG MOVE) was leading the preparation of this initiative and the work on the impact assessment in the European Commission. The agenda planning reference is 2017-MOVE-006 "Amendment of the Directive 92/106/EEC on Combined Transport". The initiative was validated on 26 October 2016.

An inter-service steering group (ISG), chaired by the Secretariat-General with close involvement by DG MOVE, was established in November 2016 in view of the preparation of this initiative. The following Directorates-General (DGs) participated in the work of the group: Secretariat-General (SG), Legal Service (SJ), DG EMPL, DG RTD, DG COMP, DG ESTAT, JRC and DG CLIMA.

The ISG met three times on 15 November 2016 and on 24 May 2017 and 15 September, discussing the inception impact assessment, the outcome of the support studies and the draft impact assessment.

2. Consultation of the RSB

The Regulatory Scrutiny Board received the draft version of the present impact assessment report on 7 June 2017 and following the Board meeting on 5 July 2017 issued a positive opinion with reservations on 7 July 2017. The Board made recommendations. Those were addressed in the revised IA report as follows

RSB recommendations	Modification of the IA report
1. The description of the context does not sufficiently explain how this initiative fits in the overall EU acquis for transport of goods and how it forms part of complementary modal shift efforts.;	Explanations on how the initiative fits in the overall EU acquis for transport of goods and on the complementarity with existing existing initiatives (to address the promotion of multimodality and the support to modal shift) were added in the introduction, in section 1.1 on policy context and are further described, as needed, in various parts of the text.
2. The report lacks a clear identification of the investment needs for different types of infrastructure and other bottlenecks to combined transport. It does not sufficiently make the case for transshipment terminals as a critical bottleneck to the further development of combined	Further explanations on the infrastructure bottlenecks and how they affect the overall problems that this initiative is addressing have been added in section 2.1.2. Specific relevant references, notably as

transport.;	regards the existing limitations and needs in terms of terminals of the rail infrastructure, have been added to help quantify such bottlenecks and the expected required investments.
3. The subsidiarity argument for this initiative is not sufficiently developed, especially for the inclusion of strictly domestic transport.;	<p>Section 3.3 explaining why the EU should act has been expanded to further cover the EU dimension of the capacity bottleneck.</p> <p>Further explanation on the subsidiarity, notably as regards the inclusion of national combined transport in the definition, but also regarding the adoption of infrastructure investment measures has been introduced in in new section 7.6.</p> <p>Further considerations on the need to act at EU level, and not to limit the intervention at national level, are justified in various parts of the text, and notably as regards the need for a minimum density of infrastructure in section 2.1.2.</p>
4. The impact analysis does not sufficiently explain the underlying basis for and possible uncertainties of the benefits of this initiative. Its conclusions, therefore, may be overly optimistic;	<p>A more detailed description of the baseline scenario, together with an explanation of the used in-house analytical model, have been added in section 6 and Annex 4.</p> <p>The description of the in-house model in Annex 4 also explain the underlying assumptions, as well as the modelisation to derive the impacts for each model.</p>
Further considerations and adjustment recommendations	
<p>(1) Context</p> <p>The report should clearly place this initiative in the broader context of EU policy for the transport of goods. It should emphasise complementarities between this proposal and other initiatives aimed at disincentivising road-only transport or encouraging other modes of transport. A presentation of the acquis should also include relevant competition rules (e.g. on state aid) and how they affect Member States' current ability to support shifts in modes of transport. The report should point out the importance of combined transport for climate policy commitments..</p>	<p>The place of the initiative in the broader context of EU policy for transport of goods has further described with a description in section 1.1 of the interaction of the Combined Transport Directive with the Weights and Dimension Directive and with the Regulation (EC) 1072/2009 notably establishing the cabotage rules.</p> <p>A description and reference to the measures under the Low-Emission Mobility Strategy and the related proposals under the Mobility Package ("Europe on the Move") has been added in section 1.1. The importance of the initiative for climate policy commitments is also underlined under section 1.1</p>

<p>(2) Problem definition</p> <p>Before calling for further investment in transshipment terminal capacity, the report needs to further demonstrate that this is the decisive bottleneck that restricts modal shift potential in the EU.</p> <p>Building on a revised context description, the report should clarify why such investments would not take place in isolation, but would in synergy with a package of existing and upcoming measures, including the further internalisation of external costs of road transport. By doing so, the report should provide reassurances that this initiative does not risk creating unused terminal capacity.</p> <p>The problem definition should also better segment the definition of the needs, strengths and weaknesses of different sub-modes with a view to later demonstrate how the proposed measures would lead to a credible and feasible shift in the distribution of transport modes for freight.</p> <p>In the case of rail transport, this entails a description of how issues such as speed, capacity and reliability are being managed to make it an appealing alternative to road transport..</p>	<p>Further explanations on the infrastructure bottlenecks have been added in section 2.1.2, pointing at the needs in term of terminal infrastructure, especially as regards rail/raod combined transport.</p> <p>A clarification on the complementary of measures and the need of coordination at European level to avoid the creation of unused capacity.has been added in Section 2.1.2.</p> <p>Elements pointing at the respective regulatory and technical evolutions of the sub-modes, with their limits and constraints have been added in Section 2.1.1.3. Further explanation on the capacity situation and evolution of the sub-modes has also been added section 2.1.2.</p> <p>In particular, a description of the specific issues related to rail transport has been added in section 2.1.1, pointing notably at the work conducted under Regulation (EU) No 913/2010 on rail freight corridors, and the rail priorities set in the TEN-T Guidelines.</p>
<p>(3) Subsidiarity</p> <p>The report should strengthen the need for EU action by providing further evidence that national initiatives will not sufficiently develop on their own, and that the scale of operations requires EU-level intervention. The report should include additional arguments on the cross-border nature of the problem and its solutions, such as the long break-even distance required for combined transport to become cost effective. Substantiated arguments are especially relevant because the scope of the revised directive includes strictly domestic transport.</p>	<p>Section 3.3 explaining why the EU should act has been expanded to further cover the EU dimension of the capacity bottleneck.</p> <p>The cross-border nature of most of the inititve has been underlined in several sections of the report, and notably pointing at the network capacity dimension (section 2.1.2). Further explanation as regards the justification of the inclusion of national combined transport in the definition, but also regarding the adoption of infrastructure investemnet measures has been introduced in in new section 7.6.</p>
<p>(4) Impacts</p> <p>The analysis of impacts should further substantiate, and qualify as necessary, optimistic forecasts in terms of modal shift resulting from this initiative. At present, limited transparency on the assumptions and specifications of the model used to quantify impacts makes it hard to appraise the validity of the estimates provided. The report</p>	<p>The in-house model used derive the expected modal shift figures and resulting beenfits, for each option, is further described in Annex 4 of this IA. This description provides the methodology, basic assumptions and other specification of the model.</p> <p>Additional considerations and clarifications on</p>

<p>should be more explicit on the methods used, the limitations faced and the assumptions made (e.g. in terms of elasticity between modes of transports, combined effect with complementary support measures). This should ensure that the calculations can be replicated and would enhance their credibility. The expected social impacts, in particular the ambitious estimates in terms of job creation, should be put into perspective, given stakeholders' concerns about massive distortions of competition, loss of jobs, deterioration of job quality and a possible decline of employment in some Member States due to substantial differences in wages and social standards. The report should also better address stakeholder concerns about the effects of cabotage rules on the national combined transport operators.</p>	<p>the social impacts have been added in section 6.3. As regards the concerns of operators on the effects of cabotage rules, these are explained in various sections of the report (notably 2.2.1) : notably by reinforcing the means to verify the eligibility conditions, existing concerns notably as regards possible abuses from the cabotage exemptions will be addressed.</p>
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3. External Expertise

External contractors were used in preparation of the Impact Assessment with:

- a study on the collection of cost related data¹⁴³, concluded in March 2017;
- a study for the update of the combined transport market overview¹⁴⁴, concluded in March 2017;
- a study summarising the consultations in support of the Impact Assessment¹⁴⁵, concluded in July 2017

¹⁴³ TRT (2017) – Gathering additional data on EU combined transport

¹⁴⁴ ISL+KombiConsult (2017), Updating EU combined transport data – Final Report

¹⁴⁵ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

ANNEX 2: STAKEHOLDER CONSULTATION SYNOPSIS REPORT

1. Consultation strategy

Consultations were carried out with an aim to get feedback on the proposed policy measures and the likely impacts of those measures. The stakeholders were consulted on the issues that were not addressed in previous public consultation (REFIT). The consultations were expected to give an overview on how different stakeholder groups view the proposed policy measures and options, how these are expected to influence them as well as to establish the stakeholders preferred option.

The consultation activities included:

1. A public consultation was carried out in the form of an open internet-based public consultation running for 12 weeks. The consultation was held from 23/01/2017 to 23/04/2017 via EUSurvey tool and via DG MOVE's consultation page.
2. A targeted (more technical) stakeholder consultation was held from 10/03/2017 to 31/03/2017 with the help of an external consultant. The main focus of the targeted consultation was on the definition and the economic incentives and will be customised for different groups of stakeholders (industry, Member States, social partners and other interest groups).
3. A stakeholder meeting was organised on 30 March 2017, allowing stakeholder groups who participate in the targeted consultation to exchange views.
4. An additional Member States" meeting was held on 10 April 2017.

2. Results of open public consultation

See Consultation Report¹⁴⁶

3. Results of the targeted consultation

See Consultation Report

4. Results of the stakeholder meetings

See Consultation Report

5. Conclusions and use of results

Both the transport and logistics sector and the authorities urgently call for an amendment of the CT Directive [92/106/EEC](#). The existing legislation is considered outdated, the regulatory and economic support for CT operations inadequate and the conditions for eligible operations not appropriate with regard to modern supply chain solutions and the competitive situation of CT services. The strong interest of stakeholders in the amendment process clearly is reflected in the high rate of participation to each consultation. It is particularly encouraging that a clear

¹⁴⁶ KombiConsult-Intermodality (2017), Consultations and related analysis in the framework of impact assessment for the amendment of Combined Transport Directive (92/106/EEC)

majority of respondents to the open and the targeted consultation were transport business associations and private enterprises, most of them involved in CT operations on the demand or supply side or, in a few cases, on both.

The main conclusions that can be drawn from the wide range of stakeholders' opinions and recommendations submitted to the consultations are presented below.

CT definition

The huge majority of stakeholders advocate an **extension of the geographical scope** of the Directive to purely national transports and operations with non-EU countries. They expect substantial positive impacts on CT volumes and environment. Despite that clear vote some concerns should be taken into account. If, in these cases, CT operations were exempted from the cabotage rules of road-only haulage the differences in wages and social conditions among Member States and with third countries might cause distortions of competition. In addition, the Commission is asked to examine if the extension to national operations might infringe the principle of subsidiarity.

The future definition of CT and possible changes to restrictions of the **road leg in CT operations** raised the largest amount of statements and comments, often controversial. Many stakeholders prefer to maintain the current limitations of the road leg or make them slightly more flexible but emphasise that it should be as short as possible. In contrast, the private sector in particular made out a strong case for not restricting the road leg at all. Interestingly, across all stakeholder groups, positive impacts on CT volumes are rather expected from an increased flexibility than from the existing definition.

In spite of obvious differences of stakeholders' interests a possible consensus model emerged from the consultations. The existing CT definition could be retained including distinguishing between rail and waterborne CT operations. Representatives of ports, inland waterway and rail transport delivered reasonable arguments for keeping the 150 km limit in place to prevent a reverse modal shift. As concerns CT rail/road operations it is suggested to not focusing on the "nearest" but on the most "suitable" transshipment point. The Directive should include EU-wide harmonised guidelines for determining the "suitability" of a facility by more "technical" criteria such as the availability of appropriate handling facilities and capacities or regular (daily) service on the relevant route. Logistics and economic criteria may also be taken into account, for example, the operator's ability to catch return loads, minimise empty runs and the total length of the round trip to and from the transshipment facility. If an operator could not provide proof of eligibility at road-side checks he should have the opportunity to deliver it at a later date.

On the **non-road leg**, there was little support for any of the proposed options. The current 100 km threshold is virtually not important for CT rail/road. Stakeholders with an interest in this CT sector therefore may be indifferent to a change of the definition. It is, however, recommended to consider that this limitation is counter-productive for CT operations by inland waterway. These services contribute to decongest the road network especially in the hinterland of major EU sea ports.

All stakeholder groups propose to retain the existing **scope of load units**. Opinions, however, were somewhat divided about the need for a minimum unit length of 20 feet. In terms of efficient and competitive CT services it is strongly recommended to keep this threshold in place as it enables standardised, "industrialised" CT operations as well as fast and efficient transshipment services.

Stakeholders agreed that the transshipment point between modes of transport should be defined in the amended Directive by “intermodal terminal” or “CT terminal” and thus replace the current terms “rail loading station” and “port”.

Support measures

The support offered under the current CT Directive is insufficient and often disproportionate to promote CT operations in the EU except for the free cabotage, which, however, has not been transposed in national law in each EU Member State. Almost every stakeholder therefore suggested to creating a more beneficial framework of incentives. The most popular option is for fully harmonized measures: mandatory, based on the same methodology and at the same level in each Member State.

As concerns **regulatory support measures** two instruments are considered particularly effective in terms of modal shift and environmental benefits and are also advocated by a huge majority of stakeholders:

- The exemption of intra-EU CT operations from road-only cabotage provisions should be retained. The initial and final road legs are implicit components of the cross-border operation and hence cannot be considered as domestic haulages according to Regulation 1072/2009. Albeit, an unrestricted cabotage might cause distortions of competition on national transport markets owing to different social standards among Member States. An amended CT Directive therefore may have a link with the posting of workers Directive;
- The 44 tonnes derogation from the 40 tonnes limit for CT operations according to Directive (EU) 2015/719 should be extended to each CT load unit defined in an amended CT Directive. This particularly applies to semi-trailers, which are considered by stakeholders as key to boost continental CT rail/road volumes.

Whilst all stakeholder groups basically agree on a free cabotage for intra-EU goods flows, opinions are clearly divided on applying this measure if the scope of the Directive were extended to national and third country transports. When amending the Directive the Commission should take due account of concerns about massive distortions of competition and a decline of employment in respective Member States due to substantial differences in wages and social standards.

Member States tabled very interesting ideas. They called for simplifying and accelerating the notification procedure for state aids or even incorporating the CT sector in the block exemption regulation. Member States would get more flexibility in setting up incentives and thus the support would be faster “to the market”.

In terms of **direct economic incentives** under the CT Directive, the consultations suggested general support for extending the support to all CT movements in each modal combination. Stakeholders provided a wide range of proposals to make the CT industry more competitive and encourage the use of CT services. The following measures are considered delivering the strongest positive impacts on CT volumes:

- Private investors should receive grants for investments in open-access CT terminals. By reducing the transshipment costs they facilitate the market access both for suppliers and users of CT services. It was also suggested to earmark an EU budget, for example in CEF, in addition to national funds;

- As an alternative or a complimentary measure to terminal investment grants CT services could be supported by a financial contribution per load unit moved or transhipped;
- Incentives should be granted for CT-related IT investment and the implementation of innovative CT solutions and technologies such as the deployment of cleaner trucks, measures to reduce CO₂ emissions, or the investment in "craneable" semi-trailers;
- As concerns CT operations involving rail, a reduction and harmonisation of rail access charges across Member States would enhance the competitiveness of respective CT services and foster modal shift.

Overall negative impacts are anticipated if two other economic incentives were implemented and are therefore not recommended. Experience from earlier support programmes tells that subsidies to support the start-up of new CT services tend to cause discriminatory effects in relation to existing operations. The reduction or reimbursement of road tolls for CT operations might imply a cross-subsidization from road to CT. In addition, this measure appears to be not consistent with the "user pays principle".

Proof of eligibility

Road hauliers who carry out CT operations eligible for any support should be able to provide a proof of eligibility. Virtually all stakeholders agree on this requirement. They also demand for introducing a system based on electronic documents or information, which can replace the outdated paper document and stamp system. Member States should be required to accept electronic data as proof of eligibility, based on requirements and data standards as agreed on EU level. In a second step, a single document, for example, an intermodal e-CMR could be introduced, which all Member States accept. The contents of the documentation should be limited to the information required for demonstrating compliance with the CT definition.

The consultations did not produce a conclusive answer where or when the proof of eligibility should be delivered to authorities. Whilst 80% of the respondents to the public consultation agreed that it is important to verify the eligibility of operations at road-side checks, the most popular choices of respondents to the targeted consultation were "On request at a later date", "At company premises" and "At transhipment points." Consensus among the majority of stakeholders may be reached if operators were allowed to supply proof not only at road-side checks but also at a later stage, for example, after a defined period of days.

Monitoring and review

The consultations displayed a strong interest of most stakeholders in regularly receiving information on the state of CT operations. CT-related data should be collected based on a common EU definition and published regularly. More comprehensive reports should be prepared, for example biannually.

It is further suggested to reviewing the amended Directive within a certain period of time, e.g. every 5 years, to keep it updated with changes in logistics and other legal framework.

ANNEX 3. WHO IS AFFECTED BY THE INITIATIVE AND HOW

Society as a whole

Negative externalities affect the society in general though some impacts are more of global and some of local nature. CO₂ emissions from transport contribute to climate change, which is a global issue as greenhouse gases emitted anywhere contribute to global warming, rising sea levels, extreme weather conditions or desertification, with poorer world regions being most vulnerable. Mitigation measures have to be taken at all levels of governance and budgetary implications affect the entire population.

Air pollution generated by road traffic, road congestion and accidents on the other hand are primarily local externalities, affecting communities living where the externalities occur. Congestion on the interurban and suburban networks, in particular on road axes of international importance belonging to the TEN-T network, also negatively affects international traffic and logistics sector and thus production.

The direct benefits for the society grow in correlation with the modal shift induced by respective options. However the most ambitious option, policy option PO3 also brings along most of negative impacts on industry and Member States.

Economic operators

Logistics operators, freight forwarders and shippers are impacted by having less choices for their transport needs, or in case of choosing intermodal transport, higher transport cost potentially making the transported goods less competitive. The specific problems with the current Directive are in practical terms mostly felt by those who organise the combined transport chains and who have to take into account the different definitions used in different Member States for the regulatory benefits when finding subcontractors, choosing terminals, preparing transport documents or in order to plan the loading (weight) of the load unit.

The lack of equal footing for non-road transport impacts in particular the operators in those sectors making their businesses less competitive. The road sector itself is impacted as long distance road transport brings along social costs due to lower quality jobs, impacts on family and social life etc. The specific problems of the current Directive are practically felt often by road hauliers as they encounter the problems and confrontations at the road side checks when being unable to prove their operations to be combined transport. It is their vehicles are confiscated, their drivers who have to face the police, they who face fines for claimed illegal cabotage, and in case of SMEs, it is the hauliers doing the CT road legs that face the highest risk of going bankrupt due to disruptions caused by ineffective definition and control mechanisms of this Directive.

Options PO1 and PO2A impact negatively rail-road combined transport operators and users (logistics operators, freight forwarders, shippers), while having least impact on current road transport operators (as modal shift is limited). The short sea shipping combined transport sector wins somewhat. The policy option PO2B and PO3 have larger positive impact on all economic operators. The CT operators win from reduced price and increased access to terminals; this reduction is carried over to users and thus has widest positive impact on economy. Road transport operators will, in particular in option PO3 be to certain degree

(2.9% and 8.3% respectively) adapt and shift from long distance road transport to short distance road legs. The latter shift brings along an increase in the quality of jobs in the road sector.

Member States

Member States are affected through various channels. From one hand, inefficient infrastructure usage creates additional investment and maintenance cost in road sector, from the other hand, negative externalities cause health problems and increase public health expenditure. Finally, climate change can create various problems for society and economy leading to potentially very high expenditure in the future.

Different options bring along different costs for Member States mostly through the economic support measures. The economic support is limited but mandatory in policy option PO1, optional in policy option PO2A and optional for operational support and mandatory (but not harmonised) for terminal support in PO2B and mandatory (but not harmonised) in PO3.

Furthermore, all options foresee the mandatory acceptance of electronic documents/data, simplifying the control of eligibility for regulatory support measures and thus reducing the time spent on it. This brings along cost savings for controlling authorities.

All options also foresee improved data gathering and reporting obligations as well as transparency and cooperation provisions. These will bring on initial administrative burden (in particular as regards data gathering) but are essential to ensure that the economic support measures could be reviewed in the future as necessary.

ANNEX 4: ANALYTICAL MODELS AND EXTERNAL EXPERTISE USED

The analytical work for this impact assessment is based on the PRIMES-TREMOVE transport model and on a model for intermodal transport developed in-house, based on data gathered and projections by external consultants. The analytical work has been mostly carried out at EU level and for certain questions (e.g. number and cost of transshipments) at Member State level.

- **Geographical coverage:** EU level, for certain questions all Member States separately.
- **Time horizon:** 2005 to 2030 (5-year time steps).
- **Transport modes covered:** road freight, rail freight, freight inland navigation and short sea shipping freight in intermodal loading units (container, swap-body, trailer or semitrailer, and for accompanied transport lorry).

1. Description of analytical models used

1.1 PRIMES-TREMOVE

PRIMES-TREMOVE transport model is a building block of the modelling framework used for developing *the EU Reference scenario 2016*, and has a successful record of use in the Commission's transport, climate and energy policy analytical work – it is the same model as used for the 2011 White Paper on Transport and the 2016 European strategy on low-emission mobility. In this impact assessment, it has been used to define the Baseline scenario and external cost impacts, having as a starting point the EU Reference scenario 2016 but additionally including few policy measures that have been adopted after its cut-off date (end of 2014), and external cost impacts.

The PRIMES-TREMOVE transport model projects the evolution of transport demand by transport mode and transport mean. It does not include specifically intermodal or combined transport. It is essentially a dynamic system of multi-agent choices under several constraints, which are not necessarily binding simultaneously. The projections include details for a large number of transport means, technologies and fuels, including conventional and alternative types, and their penetration in various transport market segments for each EU Member State. They also include details about greenhouse gas and air pollution emissions (e.g. NO_x, PM, SO_x, CO), as well as impacts on external costs of congestion, noise and accidents.

In the transport field, PRIMES-TREMOVE is suitable for modelling different types of measures including economic measures (e.g. subsidies and pricing measures of externalities such as air pollution, accidents and noise). Used as a module which contributes to a broader PRIMES scenario, it can show how policies and trends in the field of transport contribute to economy wide trends in energy use and emissions. Using data disaggregated per Member State, it can show differentiated trends across Member States.

The PRIMES-TREMOVE is a private model that has been developed and is maintained by E3MLab/ICCS of National Technical University of Athens¹⁴⁷, based on, but extending

¹⁴⁷ Source: <http://www.e3mlab.National Technical University of Athens.gr/e3mlab/>

features of the open source TREMOVE model developed by the TREMOVE¹⁴⁸ modelling community.

1.2 Specific in-house model on Combined Transport

As none of the more commonly used models in EU transport policy development includes a specific feature for intermodal/combined transport, **a specific model** was built in-house for analysing the trends of intermodal and combined transport. It assesses the evolution of different scenarios based on assumptions used in the baseline scenario developed with the PRIMES-TREMOVE model, in the 2015 CT Study (and its 2017 Update) and the CT Cost Study. The impacts are shown at EU level, with some impacts also modelled at Member State level.

The model considers:

- the evolution of road freight above 300km; the evolution of intermodal freight; the geographical coverage covered by the definition of Combined Transport in the Directive;
- (for each of the option), the impact of cost reduction (obtained through simplification measures and/or through new/updated support measures) on
 - o the portion of intermodal freight traffic covered the CTD, i.e. the actual "combined transport";
 - o the portion of intermodal freight traffic not covered by the CTD
 - o the shift from road freight traffic to intermodal or "combined" freight (through cost reduction)
- in addition, as regards the external cost, the "shifted amount" is used as the basis for calculation of externalities, and hence the savings achieved by this "modal shift"

As regards the modal shift "gap" to fill in, the following figures/assumption are taken : the portion of road freight above 300km is 56%; so the target shift target (of 30% of road traffic over 300km) by or 2030 is calculated to be **301 Bn tkm**.

The current model (EU 2016 reference scenario) for the baseline is projecting a total modal shift of 249 Bn tkm by 2030 (for road freight above 300 km). The gap, in terms of modal shift, that remains to be filled is **52** (i.e. 301 – 249) **Bn tkm**.

For each option, the average cost reduction (in €/km) on the average price of CT/IM (€/km) is calculated based on the measures applied in that option. Extrapolating from the impact of price reduction on modal shift from the German study¹⁴⁹, the affected modal shift is then calculated.

General modelling assumptions:

- For policy measures that are not mandatory (economic support measures) in some options an average impact is assessed based on existing similar measures and their established impacts.

¹⁴⁸ Source: <http://www.tmluven.be/methode/tremove/home.htm>

¹⁴⁹ KombiConsult-Hacon (2015), Gutachten zur Evaluierung des Förderprogramms für Umschlaganlagen des Kombinierten Verkehrs Aktenzeichen Z30/SeV/288.3/1440/G22

- The Combined Transport Directive does not create any obligations to economic operators to follow its definition. The definition is purely an eligibility criterion to receive support from the directive and operators are free to provide intermodal operations that are not eligible for support measures. The behaviour of economic operators is modelled based on existing experience from similar past and current measures.
- The current Combined Transport Directive includes one mandatory and one optional economic support measure. Options 2 and 3 foresee wider economic support, but they leave specific decisions including the choice of type of operational support totally to the Member States. Quantifying the impacts of such options requires making assumptions on the uptake of these support measures by Member States. For example, the optional measure in the current Directive is only used by 3 Member States, and even the mandatory one is not implemented by 9 Member States. For this reason quantification, including modelling results will only be used to indicate the scale of foreseeable impacts rather than their exact estimation.
- It is assumed that Member States who already have economic support measures in place that go beyond the current Directive, but are covered by any of the options will keep these measures even if they are optional. This assumption has been used as modelling input.
- The impact on Member States budgetary burden is assessed based on examples from some Member States who have already used similar measures to support modal shift

Additional specific assumptions (from industry):

- estimated saving of using electronic documents (such as eCMR): on average 5€ per shipment
- cost of non-homogenous transposition/implementation of CTD : 4.36% of total shipment price;
- cost of organising a new combined transport route : between 200 and 1000€, depending on operations;
- uptake of (optional) operational support measures by Member States : 30%
- uptake take of (optional) investment support measures by Member States : 50%
- estimated overall (max) impact on cost of operational support measures (if all measures are mandatory) : 1.5% reduction

2. Data

As comparable data on intermodal transport is not readily available from statistical sources, 3 studies were carried out to gather the specific data (one in 2013-2014 and two in 2016-2017). The data specifications, sources and definitions used are explained below.

The statistical data on CT rail/road in the EU are overwhelmingly based on the results of a survey among primary sources in 2016. The survey included, first of all, the collection of data from nearly 130 CT service providers, the UIRR statistics, Eurostat, Member States statistical authorities and KombiConsult's permanent database.

Rail-road CT intra-MS and intra-EU CT volumes only relate to continental shipments of CT load units. Intra-MS internationally connected CT and intra-EU internationally connected CT operations comprise of a range of maritime CT and continental CT volumes.

The data on inland waterways is based on Eurostat national statistics mirror checking and specialised national statistics as well as modal split data of seaports Rotterdam, Antwerp, Hamburg, Bremerhaven and Zeebrugge. For the aforementioned four countries, the results from the North European Container Traffic Model (NECTM) were used.

CT inland waterway/road only consists of container traffic (ISO plus domestic containers). More than 99 % of the traffic has origins or destinations in the Netherlands, Belgium, Germany or France. The share of CT inland waterway/road not connected to seaborne transport is very small and in most cases relates to the repositioning of empty containers between import and export regions.

For short sea shipping, data was based on Eurostat and port statistics mirror checking and ISL database. Origin/destination matrices (countries and coastal areas) of container traffic in tonnes and TEU as well as of ro-ro shortsea traffic in tonnes were generated. For ro-ro traffic, the TEU figures were estimated based on a sample of ports providing both the tonnage and the number of units in this traffic segment. The tonnage figures provided by the ports to Eurostat exclude the tare weight of load units so these were estimated based on the number of units. In order to estimate the share of internationally connected shortsea traffic (feeder traffic), the services behind the major port pairs were analysed with regard to their potential feeder share.

The road leg (pre-/post-carriage) was based on data reported by the liner operators for the seaports. For rail-road, intra-MS and intra-EU operations include 2 road legs, while internationally connected operations only include a single road leg in the EU. In CT operations involving a container, the road transport includes transportation of empty container to and from depot.

Transshipment and cost data is based on the specialised survey conducted in the CT Cost Study¹⁵⁰ among intermodal transport managers. More than 1000 companies and 120 associations were invited to participate in the survey. 103 replies were received covering all modal combinations.

Any remaining gaps and the validation of the estimates is based other sources, including TRT and MDS in-house expertise and data provided by ISL and KombiConsult. In order to estimate the number of transshipments in each EU Member State (i.e. to provide a breakdown of the totals by modal combination), the consultancy team estimated the proportion handled in each Member State for the rail/road, IWW/road and SSS/road combinations using different sources and combining Eurostat data (for the IWW-road and SSS/road combinations) and KombiConsult data (for rail/road).

Definitions

- Intra-MS intermodal transport/CT: combined transport within one EU Member State, not connected to additional international transport (continental CT within one MS)
- Intra-MS internationally connected intermodal transport/CT: combined transport within one EU Member State. This combined transport operation is further connecting to an

¹⁵⁰ TRT (2017) – Gathering additional data on EU combined transport – Final report

international transport operation with 3rd country (container hinterland transport or continental rail transport with connection to 3rd countries)

- Intra-EU intermodal transport/CT: combined transport operation between at least 2 EU Member States, not connected to additional international transport (continental CT within EU)
- Intra-EU internationally connected intermodal transport/CT: combined transport operation between at least 2 EU Member States connection with 3rd country. This combined transport operation is further connecting to an international transport operation with 3rd country (container hinterland transport or continental rail transport with connection to 3rd countries)
- International intermodal transport/CT: combined transport operation from which in EU only one mode of transport is used (no CT operation within EU). The transshipment to other mode takes place at border or in the 3rd country. The leg in EU can involve one or several Member States.
- Maritime/container hinterland intermodal transport/CT: a combined transport operation, mostly of containers, that feeds to or delivers from maritime transport (short sea or ocean going)
- Continental intermodal transport/CT: a combined transport operation that does not connect to maritime transport (rail-road or inland waterway-road).

3. Baseline scenarios

The Baseline scenario used in this impact assessment builds on the EU Reference scenario 2016 but additionally includes few policy measures adopted after its cut-off date (end of 2014). Building an EU Reference scenario is a regular exercise by the Commission. It is coordinated by DGs ENER, CLIMA and MOVE in association with the JRC, and the involvement of other services via a specific inter-service group.

For the EU Reference scenario 2016, Member States were consulted throughout the development process through a specific Reference scenario expert group which met three times during its development. Member States provided information about adopted national policies via a specific questionnaire, key assumptions have been discussed and in each modelling step, draft Member State specific results were sent for consultation. Comments of Member States were addressed to the extent possible, keeping in mind the need for overall comparability and consistency of the results. Quality of modelling results was assured by using state of the art modelling tools, detailed checks of assumptions and results by the coordinating Commission services as well as by the country specific comments by Member States.

The EU Reference scenario 2016 projects EU and Member States energy, transport and GHG emission-related developments up to 2050, given current global and EU market trends and adopted EU and Member States' energy, transport, climate and related relevant policies. "Adopted policies" refer to those that have been cast in legislation in the EU or in MS (with a

cut-off date end of 2014¹⁵¹). Therefore, the binding 2020 targets are assumed to be reached in the projection. This concerns greenhouse gas emission reduction targets as well as renewables targets, including renewables energy in transport. The EU Reference scenario 2016 provides projections, not forecasts. Unlike forecasts, projections do not make predictions about what the future will be. They rather indicate what would happen if the assumptions which underpin the projection actually occur. Still, the scenario allows for a consistent approach in the assessment of energy and climate trends across the EU and its Member States.

The report "EU Reference Scenario 2016: Energy, transport and GHG emissions-Trends to 2050"¹⁵² describe the inputs and results in detail. In addition, its main messages are summarised in the impact assessments accompanying the Effort Sharing Regulation¹⁵³ and the revision of the Energy Efficiency Directive¹⁵⁴, and the analytical work accompanying the European strategy on low-emission mobility¹⁵⁵.

PRIMES-TREMOVE is one of the core models of the modelling framework used for developing the EU Reference scenario 2016 and has also been used for developing the Baseline scenario of this impact assessment. The model was calibrated on transport and energy data up to year 2013 from Eurostat and other sources

Main assumptions of the Baseline scenario

The projections are based on a set of assumptions, including on population growth, macroeconomic and oil price developments, technology improvements, and policies.

Macroeconomic assumptions

The Baseline scenario uses the same macroeconomic assumptions as the EU Reference scenario 2016. The population projections draw on the European Population Projections (EUROPOP 2013) by Eurostat. The key drivers for demographic change are: higher life expectancy, convergence in the fertility rates across Member States in the long term, and inward migration. The EU28 population is expected to grow by 0.2% per year during 2010-2030 (0.1% for 2010-2050), to 516 million in 2030 (522 million by 2050). Elderly people, aged 65 or more, would account for 24% of the total population by 2030 (28% by 2050) as opposed to 18% today.

GDP projections mirror the joint work of DG ECFIN and the Economic Policy Committee, presented in the 2015 Ageing Report¹⁵⁶. The average EU GDP growth rate is projected to remain relatively low at 1.2% per year for 2010-2020, down from 1.9% per year during 1995-2010. In the medium to long term, higher expected growth rates (1.4% per year for 2020-2030 and 1.5% per year for 2030-2050) are taking account of the catching up potential of countries with relatively low GDP per capita, assuming convergence to a total factor productivity growth rate of 1% in the long run.

¹⁵¹ In addition, amendments to two Directives only adopted in the beginning of 2015 were also considered. This concerns notably the ILUC amendment to the Renewables Directive and the Market Stability Reserve Decision amending the ETS Directive

¹⁵² ICCS-E3MLab et al. (2016), EU Reference Scenario 2016: Energy, transport and GHG emissions - Trends to 2050

¹⁵³ SWD(2016) 247

¹⁵⁴ SWD(2016) 405

¹⁵⁵ SWD(2016) 244

¹⁵⁶ European Commission/DG ECFIN (2014), The 2015 Ageing Report: Underlying Assumptions and Projection Methodologies, European Economy 8/2014.

Fossil fuel price assumptions

Oil prices used in the Baseline scenario are the same with those of the EU Reference scenario 2016. Following a gradual adjustment process with reduced investments in upstream productive capacities by non-OPEC¹⁵⁷ countries, the quota discipline is assumed to gradually improve among OPEC members and thus the oil price is projected to reach 87 \$/barrel in 2020 (in year 2013-prices). Beyond 2020, as a result of persistent demand growth in non-OECD countries driven by economic growth and the increasing number of passenger cars, oil price would rise to 113 \$/barrel by 2030 and 130 \$/barrel by 2050.

No specific sensitivities were prepared with respect to oil price developments. Still, it can be recalled that lower oil price assumptions tend to increase energy consumption and CO₂ emissions not covered by the ETS. The magnitude of the change would depend on the price elasticities and on the share of taxation, like excise duties, in consumer prices. For transport, the high share of excise duties in the consumer prices act as a limiting factor for the increase in energy consumption and CO₂ emissions.

Techno-economic assumptions

For all transport means, except for light duty vehicles (i.e. passenger cars and light commercial vehicles), the Baseline scenario uses the same technology costs assumptions as the EU Reference scenario 2016.

For light duty vehicles, the data for technology costs and emissions savings has been updated based on a recent study commissioned by DG CLIMA¹⁵⁸. Battery costs for electric vehicles are assumed to go down to 205 euro/kWh by 2030 and 160 euro/kWh by 2050; further reductions in the cost of both spark ignition gasoline and compression ignition diesel are assumed to take place. Technology cost assumptions are based on extensive literature review, modelling and simulation, consultation with relevant stakeholders, and further assessment by the Joint Research Centre (JRC) of the European Commission.

Specific policy assumptions

The key policies included in the Baseline scenario, similarly to the EU Reference scenario 2016, are¹⁵⁹:

- CO₂ standards for cars and vans regulations (Regulation (EC) No 443/2009, amended by Regulation (EU) No 333/2014 and Regulation (EU) No 510/2011, amended by Regulation (EU) No 253/2014); CO₂ standards for cars are assumed to be 95gCO₂/km as of 2021 and for vans 147gCO₂/km as of 2020, based on the NEDC test cycle, in line with current legislation. No policy action to strengthen the stringency of the target is assumed after 2020/2021.
- The Renewable Energy Directive (Directive 2009/28/EC) and Fuel Quality Directive (Directive 2009/30/EC) including ILUC amendment (Directive 2015/1513/EU): achievement of the legally binding RES target for 2020 (10% RES in transport target) for each Member State, taking into account the use of flexibility mechanisms when relevant as well as of the cap on the amount of food or feed based biofuels (7%). Member States'

¹⁵⁷ OPEC stands for Organization of Petroleum Exporting Countries.

¹⁵⁸ Source: https://ec.europa.eu/clima/sites/clima/files/transport/vehicles/docs/technology_results_web.xlsx

¹⁵⁹ For a comprehensive discussion see the Reference scenario report: "EU Reference Scenario 2016: Energy, transport and GHG emissions - Trends to 2050"

specific renewable energy policies for the heating and cooling sector are also reflected where relevant.

- Directive on the deployment of alternative fuels infrastructure (Directive 2014/94/EU).
- Directive on the charging of heavy goods vehicles for the use of certain infrastructures (Directive 2011/76/EU amending Directive 1999/62/EC).
- Relevant national policies, for instance on the promotion of renewable energy, on fuel and vehicle taxation, are taken into account.

In addition, a few policy measures adopted after the cut-off date of the EU Reference scenario 2016 at both EU and Member State level, have been included in the Baseline scenario:

- Directive on weights & dimensions (Directive 2015/719/EU);
- Directive as regards the opening of the market for domestic passenger transport services by rail and the governance of the railway infrastructure (Directive 2016/2370/EU);
- Directive on technical requirements for inland waterway vessels (Directive 2016/1629/EU), part of the Naiades II package;
- Regulation establishing a framework on market access to port services and financial transparency of ports¹⁶⁰;
- The replacement of the New European Driving Cycle (NEDC) test cycle by the new Worldwide harmonized Light-vehicles Test Procedure (WLTP) has been implemented in the Baseline scenario, drawing on work by JRC. Estimates by JRC show a WLTP to NEDC CO₂ emissions ratio of approximately 1.21 when comparing the sales-weighted fleet-wide average CO₂ emissions. WLTP to NEDC conversion factors are considered by individual vehicle segments, representing different vehicle and technology categories¹⁶¹.
- For Germany, an extension of the toll network by roughly 40,000 kilometres of federal trunk road from 2018 onwards for all heavy goods vehicles over 7.5t.¹⁶²
- For Austria, the incorporation of exhaust emissions and noise pollution in the distance based charges. All federal highways and motorways, totalling around 2,200 km, are subject to distance based charges.
- For Belgium, a distance based system replaced the former Eurovignette for heavy goods vehicles over 3.5t from April 2016. The system applies to all inter-urban motorways, main (national) roads¹⁶³ and all urban roads in Brussels.
- For Latvia, the introduction of a vignette system applied for goods vehicles below 3.5t on the motorways, starting with 1 January 2017. In addition, for all heavy goods vehicles over

¹⁶⁰ Awaiting signature of act (Source : [http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2013/0157\(COD\)&l=en](http://www.europarl.europa.eu/oeil/popups/ficheprocedure.do?reference=2013/0157(COD)&l=en))

¹⁶¹ Simulation at individual vehicle level is combined with fleet composition data, retrieved from the official European CO₂ emissions monitoring database, and publicly available data regarding individual vehicle characteristics, in order to calculate vehicle CO₂ emissions and fuel consumption over different conditions. Vehicle CO₂ emissions are initially simulated over the present test protocol (NEDC) for the 2015 passenger car fleet; the accuracy of the method is validated against officially monitored CO₂ values and experimental data.

¹⁶² Currently, 15,000 kilometres of federal trunk road and motorways are subject to tolls.

¹⁶³ E.g. <http://www.viapass.be/fileadmin/viapass/documents/download/VlaanderenE.JPG>

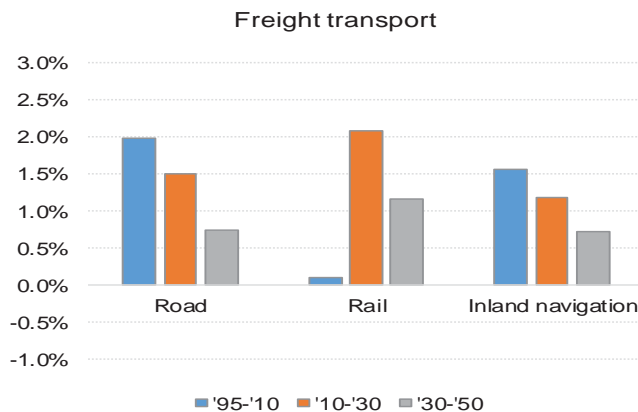
3.5t the vignette rates applied on motorways for the EURO 0, EURO I, EURO II are increased by 10% starting with 1 January 2017.

Summary of main results of the Baseline scenario

EU transport activity is expected to continue growing under current trends and adopted policies beyond 2015, albeit at a slower pace than in the past. Freight transport activity for inland modes is projected to increase by 36% between 2010 and 2030 (1.5% per year) and 60% for 2010-2050 (1.2% per year). The annual growth rates by mode, for freight transport, are provided in Figure 17¹⁶⁴.

Road transport would maintain its dominant role within the EU. The share of road transport in inland freight is expected to slightly decrease at 70% by 2030 and 69% by 2050. The activity of heavy goods vehicles expressed in tonnes kilometres is projected to grow by 35% between 2010 and 2030 (56% for 2010-2050) in the Baseline scenario, while light goods vehicles activity would go up by 27% during 2010-2030 (50% for 2010-2050).

Figure 17: Freight transport projections (average growth rate per year)



Source: Baseline scenario, PRIMES-TREMOVE transport model (ICCS-E3MLab)

Rail freight transport activity is projected to grow significantly faster than for road, driven in particular by the effective implementation of the TEN-T guidelines, supported by the CEF funding, leading to the completion of the TEN-T core network by 2030 and of the comprehensive network by 2050. Rail freight activity grows by 51% by 2030 and 90% during 2010-2050, resulting in 2 percentage points increase in modal share by 2030 and an additional percentage point by 2050.

Transport activity of freight inland navigation¹⁶⁵ also benefits from the completion of the TEN-T core and comprehensive network, the promotion of inland waterway transport and the recovery in the economic activity and would grow by 26% by 2030 (1.2% per year) and by 46% during 2010-2050 (0.9% per year).

International maritime transport activity is projected to continue growing strongly with rising demand for oil, coal, steel and other primary resources – which would be more distantly sourced – increasing by 37% by 2030 and by 71% during 2010-2050.

¹⁶⁴ Projections for international maritime are presented separately and not included in the total freight transport activity to preserve comparability with statistics for the historical period.

¹⁶⁵ Inland navigation covers inland waterways and national maritime.

Transport accounts today for about one third of final energy consumption. In the context of growing activity, energy use in transport is projected to decrease by 5% between 2010 and 2030 and to stabilise post-2030. These developments are mainly driven by the implementation of the Regulations setting emission performance standards for new light duty vehicles. At the same time, heavy goods vehicles are projected to increase their share in final energy demand from 2010 onwards, continuing the historic trend from 1995. Energy demand by heavy goods vehicles would grow by 14% between 2010 and 2030 (23% for 2010-2050).

Bunker fuels for maritime transport are projected to increase significantly: by 24% by 2030 (42% for 2010-2050).

LNG becomes a candidate energy carrier for road freight and waterborne transport, especially in the medium to long term, driven by the implementation of the Directive on the deployment of alternative fuels infrastructure and the revised TEN-T guidelines which represent important drivers for the higher penetration of alternative fuels in the transport mix. In the Baseline scenario, the share of LNG is projected to go up to 3% by 2030 (8% by 2050) for road freight and 4% by 2030 (7% by 2050) for inland navigation. LNG would provide about 4% of maritime bunker fuels by 2030 and 10% by 2050 – especially in the segment of short sea shipping.

Biofuels uptake is driven by the legally binding target of 10% renewable energy in transport (Renewables Directive), as amended by the ILUC Directive, and by the requirement for fuel suppliers to reduce the GHG intensity of road transport fuel by 6% (Fuel Quality Directive). Beyond 2020, biofuel levels would remain relatively stable at around 6% in the Baseline scenario. The Baseline scenario does not take into account the recent proposal by the Commission for a recast of the Renewables Energy Directive.

In the Baseline scenario, **oil products would still represent about 90% of the EU transport sector needs in 2030** and 85% in 2050, despite the renewables policies and the deployment of alternative fuels infrastructure which support some substitution effects towards biofuels, electricity, hydrogen and natural gas.

The **declining trend in transport emissions is expected to continue**, leading to 13% lower emissions by 2030 compared to 2005, and 15% by 2050.¹⁶⁶ However, relative to 1990 levels, emissions would still be 13% higher by 2030 and 10% by 2050, owing to the fast rise in the transport emissions during the 1990s. The share of transport in total GHG emissions would continue increasing, going up from 23% currently (excluding international maritime) to 25% in 2030 and 31% in 2050, following a relatively lower decline of emissions from transport compared to power generation and other sectors. Maritime bunker fuel emissions are also projected to grow strongly, increasing by 22% during 2010-2030 (38% for 2010-2050).

CO₂ emissions from road freight transport (heavy goods and light goods vehicles) are projected to increase by 6% between 2010 and 2030 (11% for 2010-2050) in the Baseline scenario. For heavy goods vehicles, the increase would be somewhat higher (10% for 2010-2030 and 17% for 2010-2050), in lack of specific measures in place. At the same time, emissions from passenger cars and passenger vans are projected to decrease by 22% between 2010 and 2030 (32% for 2010-2050) thanks to the CO₂ standards in place and the uptake of electromobility.

¹⁶⁶ Including international aviation but excluding international maritime and other transportation.

NOx emissions would drop by about 56% by 2030 (64% by 2050) with respect to 2010 levels. The decline in **particulate matter** (PM2.5) would be less pronounced by 2030 at 51% (65% by 2050). Overall, external costs related to air pollutants would decrease by about 56% by 2030 (65% by 2050).¹⁶⁷

High congestion levels are expected to seriously affect road transport in several Member States by 2030 in the absence of effective countervailing measures such as road pricing. While urban congestion will mainly depend on car ownership levels, urban sprawl and the availability of public transport alternatives, congestion on the inter-urban network would be the result of growing freight transport activity along specific corridors, in particular where these corridors cross urban areas with heavy local traffic. Estimating the costs of congestion is not straightforward, because it occurs mostly during certain times of the day, often caused by specific bottlenecks in the network. In the Baseline scenario, total **congestion costs for urban and inter-urban network are projected to increase** by about 24% by 2030 and 43% by 2050, relative to 2010.

Noise related external costs of transport would continue to increase, by about 17% during 2010-2030 (24% for 2010-2050), driven by the rise in traffic. Thanks to policies in place, external **costs of accidents** are projected to go down by about 46% by 2030 (-42% for 2010-2050) – but still remain high at over €100 billion in 2050. Overall, external costs¹⁶⁸ are projected to decrease by about 10% by 2030 and to increase post-2030; by 2050 they stabilise around levels observed in 2010

Further details on the Baseline scenario are available in the Impact Assessment accompanying the review of the Eurovignette Directive.¹⁶⁹

¹⁶⁷ External costs are expressed in 2013 prices. They cover NOx, PM2.5 and SOx emissions.

¹⁶⁸ External costs cover here air pollution, congestion, noise and accidents.

ANNEX 5: PRICE COMPONENTS OF RAIL AND INLAND WATERWAYS TRANSPORT PER DISTANCE GROUPS IN WESTERN AND CENTRAL EUROPE¹⁷⁰

type	distance	Market price components, %			Difference with road, %	Average door-to-door price, €		Additional disadvantage without WDD and cabotage, %	Additional shippers' disadvantage (not fully reflected in price), %			
		road legs	non-road legs	Transshipment		Load Unit costs	charges		CT, per km	road only transport, per km	Longer delivery times, %	Organising/ managing CT chain, %
IWW	-300	28-43	23-32	21-26	0	7,6-9,8	10-33	1,71	1,52	32		
RR	300-639	26-33	45-62	8-18	0-3		9-16	1,5	1,30	35		
IWW	300+	25-33	34-42	24-27	0	6,7-8,7	-13->+13	1,22	1,30	10	10-30%	5-20%
RR	640-798	21-30	41-70	5-11	0-4		-16->+6	1,09	1,14	12		
RR	800+	18-33	56-71	5,3-8,2	0-4,51		-20->+2	1,01	1,06	11		

¹⁷⁰ Based on figures from TRT (2017) – Gathering additional data on EU combined transport

ANNEX 6: MAP OF RAIL-ROAD COMBINED TRANSPORT TERMINALS ON TEN-T NETWORK





Legend

CORE NETWORK			
Inland Waterways	Railways-freight	Railways-passengers	Roads
— Completed	— High speed Completed	— High speed Completed	— Completed
- - Upgrade	- - High speed Upgrade	- - High speed Upgrade	- - Upgrade
- - New Construction	- - High speed Planned	- - High speed Planned	- - New Construction
	— Conventional Completed	— Conventional Completed	
	- - Conventional Upgrade	- - Conventional Upgrade	
	- - Conventional Planned	- - Conventional Planned	
Rail-RoadTerminals	Airports		Ports

COMPREHENSIVE NETWORK		
Inland Waterways	Railways	Roads
— Completed	— High speed Completed	— Completed
- - Upgrade	- - High speed Upgrade	- - Upgrade
- - New Construction	- - High speed Planned	- - New Construction
	— Conventional Completed	
	- - Conventional Upgrade	
	- - Conventional Planned	
Rail-RoadTerminals	Airports	Ports

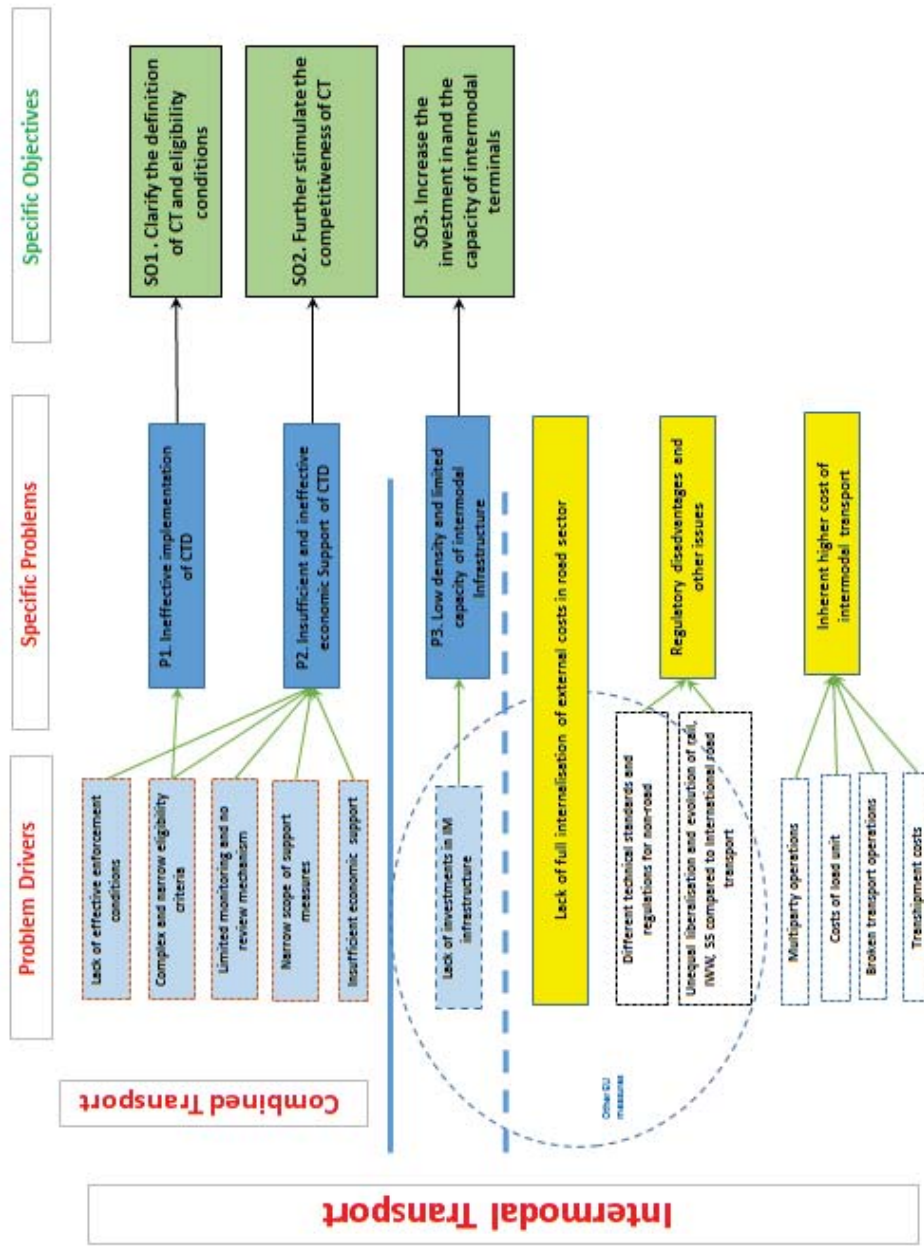
CORRIDORS		
Inland Waterways	Railways	Roads
••• Inland Waterways	— Railways	— Roads
■ Baltic - Adriatic	■ North Sea - Baltic	■ Mediterranean
■ Orient/East - Med	■ Scandinavian - Mediterranean	■ Rhine - Alpine
■ Atlantic	■ North Sea - Mediterranean	■ Rhine - Danube
Rail-RoadTerminals	Airports	Ports

ALTERNATIVE FUELS		
Hydrogen Refuelling Stations	Electric Charging Stations	Battery Swap Stations
In operation	In operation	In operation
Out of operation	Planned/Under Construction	Planned/Under Construction
Planned/Under Construction		
CNG Refuelling Stations	LNG Refuelling Stations	port

Major Projects 2007-2013		
— Inland waterways	TEN-T/CEF Projects	Safe & Secure Parkings
— Railway projects		
— Road projects		



ANNEX 7: EXTENDED PROBLEM TREE



ANNEX 8: DISCARDED POLICY MEASURES AND RELEVANT JUSTIFICATIONS

This list of policy measures was subsequently screened on the basis of the following criteria:

- **Legal feasibility:** Options must respect the principle of conferral. They should also respect any obligation arising from the EU Treaties and ensure respect of fundamental rights. Legal obligations incorporated in existing primary or secondary EU legislation may also rule out certain options.
- **Technical feasibility:** Technological and technical constraints may not allow for the implementation, monitoring and/or enforcement of theoretical options.
- **Effectiveness and efficiency:** It may already be possible to show that some options would uncontroversially achieve a worse cost-benefit balance than some alternatives.
- **Political feasibility:** Options that would clearly fail to garner the necessary political support for legislative adoption and/or implementation can also be discarded.
- **Proportionality:** Options may clearly restrict the scope for national decision making over and above what is needed to achieve the objectives satisfactorily.

Specific objective 1: simplify eligibility criteria and the controls thereof		
Problem driver: complex eligibility criteria		
	Discarded policy measure	Reason for discarding
Definition/eligibility criteria	Geographic scope	Extend scope to all CT with 3rd countries (including when only one mode in EU)
	Road legs	Nearest suitable for all modal connections, suitable to be defined by the operators
		Does not support modal shift in EU
		While being a perfect measure from industry's point of view, it is impossible to enforce satisfactorily and has already created considerable problems for rail transport as described in the problem definition. It would also increase the total road legs of CT as would increase the eligible length for short sea shipping, where road legs are longest anyway

		For all modal connections limit road leg to nearest suitable terminal, where suitable is defined through available connections, equipment, quality of service and price.	The four conditions were identified by industry as main factors for choosing a terminal. Controlling these conditions is difficult if not impossible at road side checks making eligibility controls more difficult than now (as it would apply to all modes)
		No limitation	No limitation on road leg would increase the total length of road legs in EU, even more than for "nearest suitable" for each mode. The option is also strongly opposed by most Member States
	load units	Only standardized load units	Allowing only standardised load units would reduce the possibility for innovation.
		Any load unit included without defining load unit	Not defining eligible load units would allow the interpretation that pallets, big-bags etc. are also intermodal load units as they can be transhipped.
Problem driver: ineffective conditions for implementation			
		Only paper documents without stamp requirement	Allowing digital documents is a major request by the industry.
		New type of mandatory transport document for CT (paper and electronic)	Transport document is understood by industry as a civil contract with a particular liability regime. The scope of this Directive does not cover issues relating to contractual law and civil liability.
	Data presentation	Paper + MS to accept electronic data, national requirements	Allowing all MS to establish national requirements would create additional barriers for the functioning of internal market
	Proof of eligibility	Paper + central database at national level	A centralised database raises questions of data ownership as well as who will run the database. There is no need for a centralised database with today's technology, neither at national nor at EU level.
		Paper + central database at EU level	Overly burdensome requirement.
	Control of eligibility	Ex-post registration of CT operations	Alone does not allow effective eligibility control for regulatory benefits.
		Ex-ante control in premises only	
Specific objective 2: improve effectiveness of support measures			
Problem driver: ineffective levels of economic support			

Investment support	Investment support for load units	Can distort competition as several operators have invested heavily in load units, in particular those who specialise in renting the load units. Load units are also easily replaceable allowing use outside EU and thus not supporting the modal shift in EU.
	Investment support for IT solutions	Can distort competition as difficult to ensure that investment is limited to CT aspects.
Start-up support		Start-up phase of non-road services is very expensive and with high risk. The assessment by the Court of Auditors on the Marco Polo program considered this support not efficient. It would also not be possible to separate the CT operation from other non-road operations on the service.
	Start-up of new non-road services	A harmonised lump-sum level does not reflect the market realities that transshipment costs vary widely between the different regions of EU. It would also not take into account possible price fluctuations.
Operational support	Harmonised lump-sum grant per load unit shipped on CT	Transshipment numbers in different MS vary more considerably and have clustered more into some MS due to location and availability of terminals. It would not be desirable to those Member States.
	Reimbursement of transshipment costs, harmonised percentage level. Paid by MS where the transshipment takes place	MS carry out statistics gathering. Putting the obligation on Commission would require regular outside studies to be carried out.
Reporting	Data gathering obligation on COM	Some MS already carry out reporting on national level; however this does not allow the assessment of EU wide policy impacts.
	Reporting by Member States	While development plans would focus MS policy planning, this is considered an issue of subsidiarity.
Monitoring and cooperation	Development plans by Member States	Taking into account the difficulties with statistics, it would be difficult to check the achievement of the targets.
	Targets for modal shift for each Member State	Unpractical, modal shift policies will take longer time to show impact
	Review of the Directive every 5 years	

	Cooperation	Sunset clause	Repeal of the directive should base on analysis and the needs and is possible without a sunset clause.
		Creating a comitology committee	Not necessary.
		Establishing a cooperation network	Not necessary at this stage.