

D 5.1.1 – Analysis of practices to support multimodality

RAM S.p.a.
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1. Introduction and Abstract

This report is part of work package 5 - A Policy Framework for the Adriatic Freight Transport Sustainability, activity 5.1 - Joint analysis on Adriatic Freight Transport cross-border policy instruments, deliverable D 5.1.1 - Analysis of practices to support multimodality.

The report aims to analysis incentive policies or best practices for the enhancement of intermodal freight transport in the Italian and Croatian territories.

CHARGE partners have collected the analysis of practices to support modal shift, in order to define in the whole Italian and Croatian territories the main steps to go through to enhance intermodality issues and to define the kind of incentives to realize for a sustainable intermodal shift.

The document will contribute with actions to support intermodality within the Italian-Croatian legislative framework (regional/national law, characteristics of the legislative intervention needed, legislative process to be followed, actors involved or that should be involved, best practices to transfer etc...) to facilitate a common proposal policy instrument (D. 5.1.2).

For these purposes RAM Logistica Infrastrutture e Trasporti SPA (Responsible partner) has proposed to the Partners a questionnaire to collect more information and to analyse more in-deep the practices to support multimodality.

Moreover, one of CHARGE's aim is to capitalize the gained results of IPA CBC Programme 2007-2013 CARICA project and of previous projects dealing with the development of freight transports in the Adriatic area and their connections to EU member states. For this purpose, previous projects in which is possible to identify "policies" or "project ideas" for the enhancement of intermodal freight transport in Italian and Croatian territories were analyzed and discussed in this report.

This report consists of six chapters, including the introductory and conclusions chapters.

After the first introductory chapter, the second one contains the questionnaire that has been administered by RAM to the Partners. The third chapter presents the analysis previous projects

in which CHARGE partners were involved. In the fourth chapter have been collected best practices and policies in effect in Italian and Croatian territories to support modal shift. In the fifth chapter it has been collected best practices and policies in effect in other territories to support modal shift, in order to define the main steps to go through to enhance intermodality issues.

2. Questionnaire on multimodality

In August 2019, RAM Logistica Infrastrutture e Trasporti SPA proposed to the CHARGE Partners a questionnaire to collect more information and to analyse more in-deep the practices to support multimodality.

The questions given to the partners were as follows:

- Do you know any incentive policies or best practices for the enhancement of intermodal freight transport in the Italian and Croatian territories? (please, enter project references and / or links to institutional sites or attach available documentation)
- If yes, please describe which have or have had a positive impact and which have not.
- Do you know previous projects in which is possible to identify “policies” or “project ideas” for the enhancement of intermodal freight transport in Italian and Croatian territories?
- Do you have any idea or proposal to enhance intermodality issues and also to define the kind of incentives to realize for a sustainable intermodal shift in the whole Italian and Croatian territories?

The original questionnaires completed by the partners are shown in Annex “*Questionnaire on multimodality*”. The answers are summarized in the following paragraphs.

3. Identification of “policies” or “project ideas”

In this paragraph were analysed previous projects in which CHARGE partners were involved mostly funded under IPA Adriatic Programme, Interreg ADRION Programme (projects MultiAPPRO and NEWBRAIN) and Interreg Italy-Croatia Programme (project TRANSPOGOOD).

This analysis has used main results of the work package 3 - Elimination or reduction of Bottlenecks through the Harmonization of Data, activity 3.2 – Identification of main physical and non-physical bottlenecks in the Adriatic area.

The past projects analysed are:

- CARICA
- EASY CONNECTING
- INTERMODADRIA
- ADRIATICMoS
- EA SEA-WAY
- APC
- MultiAPPRO
- NEWBRAIN
- TRANSPOGOOD
- ADRIPASS
- ADRIGREEN

3.1. CARICA

Carica – “*Capitalization of Adriatic-Ionian Reliable Intermodal Connections to support the EUSAIR Action Plan*” project’s main aim was to foster connectivity between the Adriatic-Ionian regions and improve coordination at macro-regional level of the decision-making process on maritime transport sector for joint implementation of strategies and infrastructural investments, with specific attention to the improvement of the Adriatic Motorways of the Sea. Project capitalized the main results of previous projects in terms of common physical and non-physical bottlenecks identified.

CARICA has reorganized a joint transnational database of hard and soft infrastructural bottlenecks impeding the intermodal transport development in the premises of the Adriatic Ionian area in order to share it with decision makers and public and private practitioners.

CARICA has defined the main obstacles towards the development of MoS and related inland networks capitalizing the results of the ADRIATICMOS project and will prepare specific technical and financial feasibility studies for the upgrade of MoS intermodal infrastructures and services.

CARICA has endorsed the recommendations of the completed projects ADRIATICMOS, INTERMODADRIA and EASYCONNECTING with the aim of achieving a comprehensive overview on infrastructure development to be discussed with stakeholders, and deepening the analysis of financing schemes necessary to cope with the current lack of national, regional and local funds, thus also considering the use of PPP. GUIDELINES has been outlined to face the possible transition from public based investment programmes for the development of infrastructures to a PPP based approach, where the public sector is formally requested to drive private efforts towards the development of innovative infrastructures and services.

3.2. EASY CONNECTING

Easy Connecting – “*Europe-Adriatic Sea-Way Freight*” project’s general objective was to strengthen cross-border cooperation throughout the Adriatic area, to find common solutions necessary for improving transport services and infrastructures.

The Project wants to fulfil an implement on the ground the new European transport policies and recommendations (TEN-T Guidelines, 2011 White Paper on Transport) by focusing on the main freight transport corridors and their effective management including all the key stakeholders, by incentivizing the role of ports and logistic platforms towards the deployment of more efficient, safety and environmental solutions. Furthermore, Easy Connecting could be an experimental tool to support the new Adriatic and Ionian Macroregion by stimulating the discussion and provide recommendations on the key transport and logistic priorities to be pursued in the next programming period. Policy makers, public and private stakeholders are the main beneficiaries. Concerning the partnership, the Project has tried to involve all the countries involved in the IPA Adriatic Cross-border Cooperation Programme in order to ensure the wider spread of the project's results. In practical terms the project has 16 partners from 7 different countries: Italy – the Veneto Region, Institute for Transport and Logistic, Abruzzo Region, Marche Region, Chambers of Commerce of Campobasso, Italian Coast Guard, Port Authorities of Venezia, Ravenna and Levante; Slovenia: Chambers of Commerce of Primorska; Croatia: Dubrovnik Neretva Region; Serbia: Alma Mons and Chambers of Commerce of Serbia; Montenegro: The Ministry of Transport of Montenegro; Bosnia: University of Sarajevo Greece: Port of Corfù. Moreover there are 9 associated partners from 3 different countries.

3.3. INTERMODADRIA

Intermodadria – “*Supporting intermodal transport solutions in the Adriatic area*” project's objective was the improvement of the integration of the short sea shipping transport in the logistics chains crossing the Adriatic sea, and more specifically the provision of the best environment for the activation on intermodal rail-sea transport services between the ports and their own hinterlands. For that purpose, the freight route analysis and infrastructural analysis were made.

3.4. ADRIATICMoS

AdriaticMoS – “*Developing of Motorways of Sea system in Adriatic region*” project contributed to the development of the Motorways of the Sea (MoS) in the Adriatic area as a core segment of the transport system of the Eastern Mediterranean, in particular through the elaboration of the Adriatic MoS Masterplan. The project capitalised and extended results of the previous “East Med MoS” projects.

3.5. EA SEA-WAY

EA Sea-Way – “European Adriatic Sea-Way” project’s general objective was to improve the accessibility and the mobility of passengers across the Adriatic area and its hinterland through the development of new cross border (CB), sustainable and integrated transport services and the improvement of physical infrastructures related to those new services.

In particular, specific project objectives were to:

- integrate and upgrade existing and new collective passenger (tourists and residents) transport services to increase the accessibility across Adriatic basin and decrease CO2 emissions;
- explore a better integration of urban and regional connections between ports, airports and main tourist destinations/urban areas;
- develop new or renovate existing infrastructures in the Adriatic port system in order to promote and encourage a more sustainable and efficient passenger transport;
- foster the passenger sea transport and other collective transport means connected to the port system;
- test new governance models in the light of the forthcoming Adriatic Ionian Macro Region.

The project was funded by the IPA Adriatic cross-border Cooperation Programme with a total budget of 6.657.204,68 € (from November of 2013 till February of 2016). Countries included in

the project were: Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia and Slovenia with a total number of 20 beneficiaries and 16 associates.

3.6. APC

APC – “*Adriatic Port Community*” project aimed at developing an IT system prototype based on the “single window” principle, namely a single interface improving the exchange of information among the ports involved in the initiative: Venice (IT), Ploče (HR) and Igoumenitsa (GR).

APC’s goals include streamlining the administrative procedures related to the arrival and departure of ships especially in terms of time, managing the incoming and outgoing flows of goods in port areas and improving the management of parking areas within the port areas. Such system involves the creation of a single interface to enhance the exchange of information collected by means of the different IT systems developed by each partner.

3.7. MultiAPPRO

MultiAPPRO – “*Multidisciplinary approach and solutions to development of intermodal transport in region*” project overall objective is the development of intermodal transport in the Adriatic-Ionian region. The first approach is focused on systematic collection and providing solutions to all bottlenecks, both on a national or regional level. The next approach innovatively and systematically performs promotion of the intermodal transport in the region and also creates a network of promotional centres. Furthermore, to assure high-quality service, the project will design specific port quality measures indicators.

3.8. NEWBRAIN

NewBrain – “*Nodes Enhancing Waterway bridging Adriatic-Ionian Network*” project will increase the level of transnational coordination on planning and implementation of strategic measures and actions to increase efficiency and intermodality, through the setting up of the Adriatic Ionian intermodal and logistic transport Forum and the adoption of the transnational strategy; enhance the investment capacity to upgrade physical and non-physical infrastructures of logistic nodes to contribute to the smoothness of Adriatic Ionian transport solutions and encourage the environmental sustainability of the Adriatic Ionian transport system focusing on the development of intermodal and low carbon solutions and innovations in each involved logistic node.

3.9. TRANSPOGOOD

TRANSPOGOOD – “*Transport of Goods Platform*” project will develop through the capitalization of the main results of the INTERMODADRIA project - an innovative approach to the development of intermodal and multimodal transport in the Adriatic, using coherent and complex tools to enable key stakeholders (shipping, operators etc.) in business. The goal is to develop innovative ICT tool – TRANSPOGOOD platform to find the best solution for transport services. The project's expected results contribute to improving the quality, safety and ecological sustainability of maritime and coastal transport in the program area, promoting multimodality and the use of sustainable modes of transport.

3.10. ADRIPASS

ADRIPASS project (Interreg ADRION Programme) aims at improving maritime-hinterland freight connections to boost growth and economic development of the transport sector in the ADRION region. The project focuses on the identification of soft measures to streamline and enhance the connections on the TEN-T Network recently extended to the Western Balkans, where most Border Crossing Points (BCPs) are located. It also tests specific Information and Communication Technology solutions (Port Community Systems) for streamlining freight

transport in ADRIAN ports, setting standards that could be used within Electronic Data Interchange interfaces.

3.11. ADRIGREEN

ADRIGREEN (Green and intermodal solutions for Adriatic ports and airports) is a project approved under the INTERREG V-A Italy Croatia CBC Programme 2014-2020.

The programme is funded by the European Regional Development Fund under the European Territorial Cooperation objective during the programming period 2014-2020.

The managing body of the Cooperation Program is the Veneto Region, Italy. The national body of the Republic of Croatia coordinating the implementation of the joint programme with other participating countries, is the Ministry of Regional Development and European Union funds.

The project has commenced in January 2019 and it is expected to end by January 2021. The total budget approved for the project amounts to 2.104.217,00 EUR, 85% of which is co-financed through the ERDF fund (European Regional Development Fund). The project will be implemented by 10 project partners.

The main objective of ADRIGREEN project is to improve the integration of Croatian and Italian ports and airports with other modes of transportation in order to enhance the processing of passengers during the summer seasons and to improve environmental performances of the Adriatic maritime and aviation systems.

By identifying and analyzing already existing procedures, the project partners will test a number of intermodal practices in order to evaluate their adaptability and transferability into the Programme area.

4. State of the art in Italian and Croatian territories: analysis of most relevant policy instruments

In this paragraph, CHARGE partners have collected best practices and policies in effect in Italian and Croatian territories to support modal shift, in order to define the main steps to go through to enhance intermodality issues and also to define the kind of incentives to realize for a sustainable intermodal shift.

4.1. Croatia

In Croatia an incentive policy for an intermodal shift named “Exemption from road driving bans” is in effect.

This incentive aims to enhancing mutual integration and interconnection of all internal transport systems for better access to European transport corridors and better integration with transport network of the neighbouring countries, while respecting environmental protection criteria, is one of the measures set by the Strategy for sustainable development of the Republic of Croatia (OG9 30/2009). Act on combined (intermodal) transport (OG 124/2009) stipulates that the Strategy for the development of combined transport in the Republic of Croatia is adopted/made for the purpose of long-term and coordinated development of the combined (intermodal) transport and for encouragement of logistics in the Republic of Croatia.

In order to stimulate the development of combined transport, there are three special instruments (according with the provisions of the Combined Transport Act, OG 124/09):

- 1) Exemption from annual fee for the use of public roads: owners or operators of motor vehicles and trailers registered in Croatia, which are primarily used for transportation to or from the railway terminal for intermodal transport or rail unloading station (at least 80

transfers per year) are exempted from payment of the annual fee for the use of public roads that is paid at the registration of motor vehicles and trailers (transposition of the Directive 92/106/EEC). This provision entered into force on the day of Croatian accession to the EU.

- 2) Exemption from quotas and licenses: minister in charge of transport determines road routes on which the initial and subsequent transport (initial and subsequent transport is transport of intermodal transport units along the road from the point of loading and unloading to the nearest terminal for intermodal transport or unloading station) are exempted from all quotas and permits that are set out in international multilateral and bilateral agreements, encouraging foreign operators to use environmental transport modes.
- 3) Exemption from restrictions on road traffic: restrictions on road traffic set by special provisions (e.g. limitation of road traffic) do not apply to initial and subsequent transport. The most important aspect of the third special instrument adopted by the Republic of Croatia (exemption from road driving bans) to stimulate the development of combined transport is that this incentive is not compulsory according with the provisions of Directive 92/106/EEC but, in spite of this the Republic of Croatia decided to implement and promulgate the scheme.

This incentive does not provide transfer of State resources (direct grants), fiscal measures, economic advantage, financial aid to reduce operational costs of undertakings (e.g. labour related costs/training aid, etc.), startup aid, investment, restructuring aid. It is provide only business advantage based on the exemption from driving bans for road vehicles.

Therefore, this incentive scheme potentially encourages road hauliers to shift road traffic towards maritime, rail and inland waterways by enhancing their business performing freight transport services during restrictions which affect other operators not using CT solutions.

Furthermore, Croatian incentive for intermodal transport is also comprised within the Law on combined freight (NN 120/16) and Ordinance on Incentives for Combined Freight (NN 5/18). The Law regulates distances, incentive measures and conditions for the carriage of goods in

combined freight transport, and Ordinance lays down measures for the implementation of incentives in combined freight transport. The measures are:

- The transport organizer is entitled to a fee of HRK 150.00 per truck, trailer, semi-trailer, with or without a tow vehicle, a removable crate or container of 20 feet or more, with which the combined transport of freight by rail, inland water or sea has been carried out. The incentive must be below the values set out in point 107 (b) of the Community Guideline on State aid to railway undertakings (incentive to reduce external costs - 30% of the total cost of rail transport, up to 50% of eligible costs).
- A railway undertaking for a freight train in combined freight transport shall be entitled to an incentive of HRK 2.00 per train kilometre, which shall be paid as a fee for access to the railway infrastructure.

The incentive must be below the values set out in point 107 (a) of the Community Guideline on State aid to railway undertakings (incentive to use railway infrastructure - 30% of the total cost of rail transport, up to 100% of eligible costs).

- The owner or user of motor vehicles and trailers registered in the Republic of Croatia, who during the 12 months from the date of the last validation of the technical correctness of the vehicle transported cargo in the initial and/or final section to or from the railway terminal for combined transport or loading station, is released from the obligation to pay an annual fee for the use of public roads up to a maximum of 50% payable on registration of motor vehicles and trailers, which is established by a special regulation.

4.2. Italy

4.2.1. *Ecobonus*

In Italy an incentive policy to foster the use of the Motorways of the Sea (MoS) named “*Ecobonus*” was introduced in order to shift freight transport from «all-road» to «road-maritime» alternative.

Over the years the Italian Ministry of Transport (MIT) has identified 32 eligible maritime routes to be promoted by the incentive. The routes were selected according to potential volumes attracted from road traffic (presence of alternative road transport solutions) and the potential socio-economic and environmental benefits by shipping cargo on the given maritime route instead of road. The incentive, which was active from 2007 to 2010, was managed by RAM Logistica Infrastrutture e Trasporti Spa.

The value of the incentive accounts for up to 30% of the RoRo fares charged to truckers, but a minimum of 80 trips/year has undertaken on each route for which the subsidy was requested. A premium is granted to truckers reaching 1,600 trips/year on a single route. Finally, the same boarding volumes has to be maintained for the three years following the end of the subsidy.

The level of the subsidy bases on maritime distance, land distance avoided, and the reduction of external costs achieved through modal shift. The calculation model to quantify external costs was developed by the Italian NGO “Amici della Terra”, incorporating greenhouse gases emissions, atmospheric pollution, noise, congestion, accidents and fuel spillage. According to the mentioned study, €133 of positive externalities can be generated for 100 HGV km shifted from road to sea.

The European Commission in its decision concerning the Italian *Ecobonus* Scheme stated that the amount of money distributed as an incentive should not exceed the differential between the external costs generated by road transport and those generated by sea transport.

Eight international routes have benefitted from the Italian *Ecobonus* over the period 2007-2010. All of the routes but one (i.e. the Civitavecchia-Toulon) connected an Italian port with a Spanish one. Two routes are no longer active: the Civitavecchia-Toulon was operated between 2005

and 2009; the route Livorno- Tarragona was operated between 2006 and 2009. However, the competing route of the latter – the Livorno-Barcelona – is still operated.

As a matter of fact, traffic flows recorded on Ecobonus routes over the latter implementation period (2007- 2010) have been averagely 12% higher with respect to 2006 levels. In fact, between 2007 and 2010 approximately 155,000 trailers were being transported, on a yearly average, on Italian-Spanish Ecobonus routes compared to the 137,000 carried in 2006 and the 105,000 carried in 2005.

If the whole Ecobonus deployment period (2007-2010) is considered, RoRo traffic volumes on Italian-Spanish routes were averagely 12.1% higher compared to pre-scheme levels.

In absolute terms, out of the overall 618,318 trailers that boarded RoRo vessels operating on routes between Italy and Spain over the 2007-2010 period, 87,562 are to be credited to the Ecobonus-related modal shift. Put differently, during the Ecobonus implementation period a yearly average of 21,891 trailers were shifted from the over-congested Italian, French and Spanish road networks to Italian-Spanish RoRo routes.

As specified in the European Commission’s decision (C (2005) 1155 fin), one of the conditions that had to be met in order to benefit from the retroactive refunds granted by the Ecobonus scheme, was that road haulage companies should continue to undertake the same number of yearly trips made on the concerned routes during the incentive implementation period over the three years following the end of the incentive period. According to both the stakeholders and the available data, those road haulage companies that benefitted from the Ecobonus incentive over the 2007-2010 period not only maintained their boarding rates, but are also considered to have increased their number of trips on the involved RoRo routes. Hence, it is assumed that, besides having operated a modal shift equal to a 14.2% share of RoRo traffic on routes between Italy and Spain during the 2007-2010 period, the Italian Ecobonus scheme has consistently sustained RoRo traffic demand on the said routes by the same extent also after the end of the scheme, from 2011 to 2013. In absolute terms, this implies that further 1.332 million tons out of the 9.409 million that were transported over the 2011-2013 period on subsidised routes between Italy and Spain have to be credited to the Ecobonus.

Throughout the whole implementation period €67 million out of approximately €240 million were distributed to road haulage companies travelling on eligible international Ecobonus routes

between Italy and Spain (i.e. approximately 30%). In other words, international routes benefitted from 30% of the total budget, while the residual amount has been devoted to domestic routes.

In addition to the direct costs of the Ecobonus, i.e. the amount of Euros distributed as an incentive to road haulage companies throughout the whole implementation period, all additional costs that were incurred by RAM S.p.a. in order to prepare, execute and monitor the deployment of the Ecobonus scheme must be considered in the evaluation. Road transport operators also incurred administrative costs in order to apply for Ecobonus subsidisy. Indeed, they were required to submit, on a yearly basis, one application form for each eligible route on which they were boarding.



Source: Italian Ministry of Transport

Figure 1 – Italian MoS

Taking into account both user-side and government-side administrative costs, total indirect costs incurred by stakeholders in order to benefit from/deploy the incentive scheme sum up to approximately two working days per year and € 3.66 per trip.

Environmental and socio-economic costs/benefits that are not directly borne/taken by transport users, i.e., the Ecobonus externalities, are not directly and easily quantifiable in monetary terms. However, the use of the Marco Polo external costs calculator and the external costs coefficients

derived from the study by the Italian NGO “Amici della Terra” can support an estimation of such externalities.

The Marco Polo external costs calculator attaches standardised external costs coefficients to environmental impacts (e.g. air quality, noise, climate change) and socio-economic impacts (e.g. accidents, road congestion) of a given amount of cargo carried by different modes (i.e. road, rail, inland waterways and short sea shipping). Each transport-mode specific coefficient is derived by computing the average of the aforementioned external costs per tonne-kilometre transported with a specific transport mode. The external costs calculations, in turn, are based on a combination of data and models results based on a set of robust assumptions. The aim of the said costs calculator is to allow a direct comparison of the change in externalities brought about by competing, mutually exclusive, investment projects, i.e., new transport services. However, in the specific case of the Italian Ecobonus most of the additional traffic was generated on existing routes. Hence, the external costs of short sea shipping transport have been considered only for freight shifted towards RoRo routes that were introduced during the Ecobonus implementation period (2007-2010). Under these assumptions, by transporting the 3.184 thousand tons of freight representing the Ecobonus-induced modal shift on RoRo routes between Italy and Spain, environmental and socio-economic costs drop from €74.9 to approximately €4.4 million. This translates into a net reduction in external costs equal to €70.5 million. Hence, for each Euro invested in the incentive, environmental and socio-economic benefits accounting for approximately €1.1 were generated.

It must be recalled that one condition for the Ecobonus scheme to be approved by the Commission was that the amount of the subsidy should not have exceeded the difference between the external costs generated by maritime and the ones generated by road transport. Such difference was to be computed based on the study completed by the NGO “Amici della Terra”. Coherently with the Commission’s decision, the net change in external costs has also been computed based on the coefficients provided by the said study. Under these assumptions the modal shift triggered by the Ecobonus scheme is believed to have generated environmental and socio-economic cost savings equal to €389 million, translating into a net social benefit of €5.81 for each Euro invested in the incentive.

In terms of modal shift, positive results have been observed both for the implementation period (2007- 2010), as well as for the years following the end of the Ecobonus scheme (2011-2014). Besides leading to significant traffic flow growth during favourable economic periods, the Ecobonus scheme has widely mitigated the sharp drop in demand for maritime freight transport services as a consequence of the 2009 financial crisis, hence contributing to avoid modal back shift.

Considering that most of the freight shifted from “all-road” to “road-maritime” transport mode has been channelled towards already operative RoRo links, the Ecobonus scheme is considered to have generated environmental and socio-economic benefits exceeding its cost.

The Ecobonus scheme did not induce any market distortion. In its working document on the Motorways of the Sea, the European Economic and Social Committee (EESC) identified the Italian Ecobonus as a “well-directed aid without distortion of competition”. By subsidizing road haulage companies, the Italian Ecobonus scheme did not undermine competition among ports and maritime services. Instead, it incentivised road hauliers to shift from “all-road” to “maritime-road” transport mode by selecting the ports and the maritime services that better fit their needs i.e. schedule and origin-destination. Indeed, the selection criteria for route eligibility and the condition that short sea shipping fares were kept constant, excluded distortion of competition with respect to existing maritime services and other ports.

4.2.2. Marebonus

The incentive Marebonus aims to develop the combined road-sea transport mode by creating new maritime services and implementing the existing services, in accordance with the Stability Law for the three-year period 2016-2018, article 1, paragraph 647.

Over 130 million euros for the three-year period 2016-2018 has been disbursed and distributed as follows:

- 45.4 million euros in 2016

- 44.1 million euros in 2017
- 48.9 million euros in 2018

Marebonus is dedicated to ship owners proposing three-year projects for the development of Ro-Ro and Ro-Pax new maritime services in order to support the implementation of the intermodal chain and reduction of the road traffic congestion. Beneficiaries are shipowners with ships for freight multimodal transport or projects for the enhancement of the same services on existing routes, from/to Italian ports, connecting ports located in Italy or in EU Member States or Members of the European Economic Area. The incentive is estimated on the base of the number of ships multiplied for the distance (in km) subtracted to the Italian road viability. This incentive includes also the overheads of part of the amount received to favor the road transport companies using maritime services.

Marebonus ended in the 2018 but it's been refinanced for the three-year period 2019-2021 but with only 9 million euros.

4.2.3. Ferrobonus

The Ferrobonus is an incentive to support combined and transhipped rail transport, enforced by article 3 of the Ministerial Decree No. 592, August 4th 2010, modified by the Ministerial Decree No. 750, October 14th 2010. It is aimed at sustaining combined rail freight transport by using the resources leftover from the “Ecobonus” initiative. The measure funded interventions in favour of combined rail freight transport and transshipment as well as investments for road transport companies looking to lower their environmental impact and improve the development of logistics.

The funds left over from the “Ecobonus” which have been used for the Ferrobonus incentive, are equal to euro 25.7 million. To benefit from this incentive, the companies that commissioned railway transport services in Italy, and in particular that:

- have commissioned, from October 15th 2010 to October 14th 2011, combined and/or transhipped transport services, maintaining at least 80% of the cargo volume (in train/km) in the period July 1st 2009 – June 30th 2010;
- have not commissioned combined and/or transhipped transport services in 2009, but did it from October 15th 2010 to October 14th 2011. The eligibility for the economic contributions was subordinated to operating at least 48 couples of full cargo load trains. Those who benefited from the Ferrobonus had to commit to maintain at least 80% of the cargo volume (in train/km) in the period in the period July 1st 2009 – June 30th 2010, that is, at least 48 couples of full cargo load trains also in the following twelve months.

In order to keep their funding, all companies had to maintain the same traffic volume they had during the period from the 15th of October 2010 to the 14th of October 2011, for an additional twelve months following the disbursement of funds. Failing to do so, would cause the Ministry to reclaim a portion of the disbursed funds. As implementing body of the Ministry of Infrastructures and Transport, RAM was in charge of the operational management of every phase of the incentive.

In general, Ferrobonus aimed to incentivise transports with fully loaded trains that used road transport for the initial and/or final part of their journey and railway transport for the remaining part. Therefore, transports solely using railways for the entire journey were excluded from this incentive. The entire amount of funding offered by the incentive amounted to euro 25.7 million euro with a maximum limit of euro 2 per train-km of combined transport and/or transshipment on national routes from the 15th of October 2010 to the 14th of October 2011. These funds were disbursed after the 14th of October 2011. Data show that only 64 of the 91 companies eligible for the incentive received funding. They highlighted a total trains-km equal to 23,179,327.33 for a total contribution amounting to euro 23,549,498.39 (euro 1.08 per train-km).

One of the main roles of the incentive was to support companies go through the difficult crisis of the whole sector. Data also show an important growth of the freight volumes transported: the

total freight transport volumes via rail in 2014 was slightly superior to 10% of all freight volumes transported with other modes of transport, generating 40.722 thousands of train-kilometre.

For these reasons the Italian Government considers the Ferrobonus experience as a success and it has re-proposed the incentive for the three-year period 2016-2018. The budget for the new Ferrobonus was 20 million euros equally distributed per year (2016, 2017 and 2018).

4.2.4. Other incentives

Furthermore, in 2018, the Ministry of Transport has published the Decree N°221 on 20th April 2018 with which the methods for accessing the grants for the investments of road haulage companies for low environmental impact vehicles destined for intermodal transport have been defined.

Application has to be implemented exclusively by special platform, from 30 July to 15 April 2019 (www.ilportaledellautomobilista.it).

The purposes of this incentive scheme is to encourage the investments of road freight transport companies for the renewal and technological upgrading of the vehicle fleet, for the acquisition of instrumental for intermodal transport, as well as for encouraging collaboration and aggregation initiatives between companies.

Interventions eligible for contribution are:

- Acquisition of new cars, used for the freight transport (3.5 tons) with alternative traction (CNG, LNG, hybrid diesel/electric and full electric);
- Scrapping vehicles of heavy vehicles (greater than 11.5 tons), with simultaneous acquisition of new vehicles Euro VI standard;
- Acquisition, also through financial leasing, of new trailers and semi-trailers, for combined rail transport complying with the UIC 596-5 standard;
- Acquisition, also through financial leasing, of crates and trailers.

The contribution varies between Euro 1,000 to 20,000.00. The contribution thresholds are increased based on the size of the applicant company and the planned investment.

5. Best practices in other countries

In this paragraph, CHARGE partners have collected best practices and policies in effect in other territories to support modal shift, in order to define the main steps to go through to enhance intermodality issues and to define the kind of incentives to realize for a sustainable intermodal shift.

5.1. Spain

In Spain an incentive policy for an intermodal shift named “Direct grants for combined transport operations” had been implemented by Basque Country Minister of Housing, Public Works and Transport from 2008 to 2012. This incentive had aim to promote the use of combined transport among road freight companies (road hauliers).

From Spanish ports, there are currently two Motorways of the Sea in the Atlantic and five in the Mediterranean. Short sea shipping is clearly integrated into port strategies, which are seeking to establish and strengthen multimodal and intermodal transport chains combining maritime short sea shipping with overland - and possibly rail - connections. The State subsidises them in addition to European funding with an annual budget allocated equal to euro 200,000. The Autonomous Community of the Basque Country in Spain approved a grant scheme - similar to the Italian “Ecobonus” scheme - addressed to road transport and transport operators based in that Region (DVOT 2010). The aid awards transport companies, autonomous lorry drivers and transport association subsidies of 30% of the seaway price each time the lorry or semitrailer uses a Ro-Ro service. Reimbursement of a percentage of freight costs where the percentage increases the more journeys executed. Hence, the subsidy was given directly to the road haulier as an incentive to move trailers by sea instead of long-distance road transport. This grant scheme promoted by Autonomous Community of the Basque Country, provided for subsidies for freight vehicles moving between Basque ports (e.g. Bilbao, Santander) and UK.

The Spanish transport corridor covered by this incentive scheme was the so-called “Atlantic” connecting the northern coastline of Spain with closer coastline of UK as well as Belgium.

Efficiency and environmental sustainability of the Basque incentive scheme was assessed by the Spanish association for the promotion of SSS. This assessment was performed using the Shortsea Promotion Centre Spain simulator. Results of simulations produced by this tool were compared the figures elaborated by the Marco Polo Calculator. Despite of a common assumption that environmental impacts of maritime transport are lower than those of road transport, in some cases maritime impacts might increase compared with road transport due to specific geographical / infrastructural / commercial reasons characterizing the covered corridor. Based on the aforementioned simulations, the value of environmental costs for the so-called “Atlantic” corridor are in general unfavourable for the intermodal solution specifically for all the routes of the Bilbao- Portsmouth line as well as most of the routes of the Santander- Portsmouth line.

The use of high-speed vessels in SSS have positive effects in logistics performance and effectiveness in terms of transport time, but because its high fuel usage, it also implies negative environmental effects. In the most cases, the potentially higher environmental costs of using combined transport are simply due to greater distance in km that those of all-road route. Despite of this, the incentive scheme implemented in Basque Country can be considered as a successful example of regional financing supports towards the modal shift.

5.2. Slovenia

In Slovenia three incentive policy to support intermodal shift are in effect:

- Exceptions to traffic restrictions for freight vehicles engaged in road transport combined with transport by rail or ship;
- Increase of total permissible weight of vehicles in pre-carriage and on-carriage;
- Partial compensation for the costs of transport services, research and investments for railway Undertakings.

Legislative and regulatory framework of Combined Transport in Slovenia can be broadly divided:

- Railway Transport Act;
- Decree on Combined Transport (OG RS, No. 4/01);
- Decree on partial compensation for the costs of transport services, research and investments in respect of undertakings which provide specific transport services in railway transport (OG RS, No. 108/2000);
- Resolution on Transport Policy of the Republic of Slovenia Intermodality: Time for synergy (OG RS, No. 58/06);
- Combined Transport Act (OG 124/09).

5.2.1. Exceptions to traffic restrictions for freight vehicles engaged in road transport combined with transport by rail or ship

In Slovenia, on some state highways a time limit for heavy goods vehicles (goods vehicles having a maximum mass exceeding 7.5 tonnes) are introduced and on other roads for these vehicles is introduced all day traffic ban. Time limits on state roads have been introduced under the Regulation restricting traffic on the roads in the Republic of Slovenia, which entered into force in July 2006 and replaced Regulation of 2004. During a time limit of freight traffic on Saturdays, Sundays and holidays, in the restricted areas it is prohibited to transport heavy goods vehicles. The following driving prohibitions apply to heavy vehicles over 7.5 tonnes:

- every Sunday and public holiday from 8:00 to 21:00 hours;
- good Friday from 14:00 to 21:00 hours;
- on the road G1-3 Maribor – Dolga vas from 08:00 on Saturdays until 21:00 on Sundays (on Saturdays between 08:00 and 15:00 only local traffic is permitted).

These restrictions do not apply to trucks carrying goods in the public interest. The Decree on the Reduction of Traffic on Roads in the Republic of Slovenia stipulates that trucks travelling at

the end of the week and during national holidays are exempted from these provisions, if they are involved in the combined transport by rail or by ship.

Support of combined transport by exempting road freight vehicles using piggy-back train or a ferry following the traffic restrictions is the incentive scheme implemented in the Republic of Slovenia according with the provisions of Decree on Combined Transport (UL RS, 4/01).

The traffic restrictions on holidays, weekends and during tourist season (Art. 2 and 3 of the Order on Traffic Restrictions on roads in the Republic of Slovenia (UL RS, 75/11)) do not apply to freight vehicles or groups of vehicles whose maximum permissible weight exceeds 7.5 tonnes which are engaged in road transport combined with transport by rail or ship:

- to a rail or ferry terminal, if they journey using a piggy-back train or a ferry and would otherwise not reach their destination on time (submission of appropriate documentation required);
- from a rail or ferry terminal to the nearest border crossing, if they arrived using piggy-back transport or ferry and if they are able to proceed with their journey to their destination abroad (submission of appropriate documentation required).

Thus, the exception to the time limit also applies to goods vehicles engaged in road transport in combination with a rail or sea. This legal framework has also realized the commitment of the Republic of Slovenia arising from bilateral agreements on combined transport, which Slovenia has concluded with Croatia and Hungary, where these countries signatories pledged that vehicles performing delivery and shipping associated with combined transport are exemption from time limit restrictions on weekends and holidays. Moreover, The Government of the Republic of Slovenia signed the agreements on combined transport with the Governments of Bulgaria, Czech Republic and Slovak Republic and Numerous bilateral agreements for goods transport by road.

5.2.2. Increase of total permissible weight of vehicles in pre-carriage and on-carriage

The incentive scheme enables higher weight limits for road vehicles transporting intermodal loading units, increasing the total permissible weight of road freight vehicles (trucks, HGVs) involved in combined transport (maritime, rail transport, inland waterways) up to 44 tons.

According to the Decree on Combined Transport (OG RS No. 4/01), the increase of a total mass up to 44 tons is allowed in the following specific conditions:

- vehicles carrying intermodal transport unit;
- trailers reinforced for loads in unaccompanied transport;
- coupled combinations of vehicles with five or more axles travelling in combined transport (road-rail) arriving at or departing from terminals, provided that the combination is suitable for the transport of swap bodies.

The total permissible weight of vehicles can be up to 44 tons for the road vehicles performing pre-carriage and on-carriage in combined transport, with the characteristics as follows:

- a towing vehicle with three axles accompanied by an articulated semi-trailer with two or three axles, if it transporting intermodal transport unit or is strengthened for transport in unaccompanied combined transport;
- a group of vehicles with five or more axles, if the group of vehicles is adapted for the transport of swap bodies.

For road freight vehicles, which carry the combined traffic delivering and shipping within the prescribed distance to the nearest rail terminal or port, the Decree on combined transport (OG RS, No. 4/01) allows a maximum authorized mass of up to 44 tons. It defines technical and freight terms of CT. For other goods vehicles, which do not participate in combined transport, namely lower limit of the maximum total weight of these vehicles is prescribed.

In short, this policy consist in permission for higher weight limits for road vehicles transporting intermodal loading units enable to engage road hauliers in the incentive scheme because they potentially boost their business by increasing freight volumes per trip.

5.2.3. Partial compensation for the costs of transport services, research and investments for railway undertakings

Objectives of this incentive scheme are:

- Increasing the competitiveness of combined transport and encouraging the use of modern technologies in CT;
- Enforcing the performance of specific services as long as they are in a public interest.

This policy is referred the following regulatory framework. Decree on “partial compensation for the costs of transport services, research and investments in respect of railway undertakings which provide specific transport services in railway transport” regulates in detail provisions for the compensation of transport costs. Decree on “combined transport” defines technical and freight terms of CT. “Resolution on the Transport Policy of the Republic of Slovenia” defines measures for stimulation of intermodal transport and provides conditions for operation of logistic centres. In addition to the above national legislative on CT, bilateral agreements between Slovenia and other States for CT promotion/acceleration has been also established. Slovenia and Croatia concluded bilateral agreement which laying down provisions on mutual acquittance of road user charges (tolls) and payments of other fees for road vehicles in unaccompanied CT from the loading bay to the terminal or from terminal to freight villages within stipulated distances from respective CT terminal. Both countries also agreed to exempt from obligation of obtaining permits for the international road transport in accompanied combined transport (“Ro-La”).

In the Slovenia-Croatia bilateral agreement, the two parties have undertaken to transport to/from the terminal in unaccompanied combined transport mutually acquitted of road user

charges and other fees pay for road vehicles, from loading place to the terminal or from terminal to loading place within a certain distance of each terminal of combined transport. The Slovenian Ministry of Transport is aimed at supporting the development of logistic platforms through investments in the transport infrastructure, focussed on railways as well as with promotion private initiative in development of logistics infrastructure.

Decree OG RS, No. 108/2000 provides (Art. 4) that the State may give carriers that perform combined transport state aid in the form of government benefits for the portion of the funds spent by these carriers for investments, research as well as for the share of transportation costs, if the following conditions are met:

- implementation of the special interest of the State;
- these government benefits provides carriers in intermodal transport an equal economic position with carriers in other types of goods traffic or providing reimbursement of expenses incurred in carrying this because they would not be doing this, if it was performed only because of their economic interest.

Public interest is the key criterion for partial compensation of undertakings' costs, which can be considered a key element for the successful implementation of this incentive scheme as well. But, at the same time, this approach might set potential conflict situation with EU for what concerns State aid procedure according the Treaty on the Functioning of the European Union. For these reasons, Government should regulate the state aids in the way that the conditions would not be applicable in all cases.

5.2.4. Remarks

Slovenia implemented incentive schemes on the one hand with the aim of promoting rail, sea and inland waterway transport as alternatives to road transport, on the other hand with the aim of enhancing competitiveness of the private sector (e.g. railway undertakings, etc.) in the form of:

- Financial incentives which include state compensation to carriers performing combined transport;
- Tax incentives include road tax exemption for foreign motor vehicles, subject to reciprocity;
- Financial incentives which include partial compensation for the costs of transport services, research and investments for railway undertakings;
- Business advantage based on the exemption from driving bans for road vehicles;
- Deregulations from Directive 96/53/EC on max. weights and dimensions of heavy good vehicles and trucks.

One of the main lesson learnt is the importance of setting up a comprehensive national legislation as well as international cooperation and partnership agreements in order to boost regulatory and legal frameworks towards promotion of combined transport solutions.

The State may partially compensate the costs of transport services, research activities and investments of undertakings providing combined transport, if recognising special interests, if thereby achieving equal economical status with other carriers of goods and passengers in other transport modes as well as providing that costs are incurred in transport operation, which is not in pure economical interest.

In this incentive scheme, only transport operators registered in Slovenia are entitled to be granted the state aid. Public interest is the key criterion for partial compensation. It can be considered a key element for the successful implementation of this incentive scheme but, at the same time, this approach might cause potential conflicts with EU regarding State aid according the Treaty on the Functioning of the European Union (TFEU).

5.3. United Kingdom

In United Kingdom an incentive policy to support intermodal shift named “Waterborne Freight Grant Scheme” (WFG) is in effect.

Legislative and regulatory framework of Combined Transport in UK can be broadly divided:

- Transport Act 2000, Part 5, Section 272;
- The Scotland Act 1998 (Transfer of Functions to the Scottish Ministers) Order 2003;
- Transport (Scotland) Act 2001, Part 4, Section 71 & Article 88(3) of the EC Treaty (on State Aids)

The objective of WFG is to support the modal shift of freight from road to water by means of granting support to coastal and short sea shipping services on the condition that they avoid journeys by lorry and that they generate environmental benefits within the UK. Beneficiaries must undertake to move a specified annual freight tonnage by water.

Aid is awarded for a maximum of 3 years against a specified annual tonnage moved by water. In the case of mixed freight/passenger services, a separate accounting system is requested in order to subsidize only the transfer of freight from road to water.

Projects are required to offer worthwhile and quantifiable UK environmental benefits and to be viable after the 3-year subsidy. No more than one project can be financed per line, and no renewal, extension or repetition of the project in question is permitted. In principle a project is distinct from others in terms of route, cargo, services and lorry journeys replaced.

However overlap may happen with other routes (starting point, intermediary stops, port of destination). In such cases the projects must be complementary to each other and the costs and financing of cargo shipping and services must be clearly separable.

Aid is restricted to whichever is the lowest of the following:

- the value of the environmental benefits of mode shift;
- the need for grant support as determined by a financial appraisal of the proposal comparing the water with the road alternative;
- 30% of the total operating costs of the relevant service.

Grant intensity is calculated by the UK competent authorities for each individual project following assessment of its environmental benefit (i.e. monetary value of the lorry-miles saved over the agreed period of the project, based on the latest external costs of road and maritime

transport). The monetary environmental benefit constitutes the maximum amount of grant that can be offered by the UK Government.

The financial need for grant shall be shown over four equal periods comparing costs and revenues of moving traffic by water as opposed to road. The 4th period should show that the service is viable without grant. It should be based on sound evidence supporting the prediction of the type and quantity of goods that will use the service. As a general principle, the minimum aid necessary to achieve the objective is paid, and an absolute ceiling of € 2 million is set per project. When WFG is combined with other national or Community aids, an overall ceiling of 30% of operating costs apply to the combined total of national and Community aids. In such cases there must be a net increase in lorry journeys replaced. The aid cannot be cumulated with public service compensation. The aid is granted by means of a direct non-refundable investment grant. Grants are only paid following receiving by the granting authority confirmation from independent accountants that the contracted tonnages have indeed been transferred from road to water.

The performance of the project is to be monitored by the granting authority on an ongoing basis to ensure that the aid is limited to the strict definition of the project and produces the effects desired.

WFG was initially launched for 6 years (2004- 2010) and continued for 5 years (2010-2015) after modification in 2010 (when inland waterways freight was removed from the scope). Lastly, WFG has been extended by 5 years (till 2020).

Total budget allocated for the initial 6-year period the budget was £60 million and for the following 5-year period the budget was £50 million. Instead, for the 5-year prolongation the new overall budget is £10 million.

WFG beneficiaries are any company (e.g. ship owner) within the EU or EEA operating new or, under specific conditions, existing coastal/short-sea services. Undertakings of all sizes are eligible.

Under the initial WFG, a grant of £578,960 was made in 2005 by the Scottish Government in respect of a Superfast ferry service between Rosyth (Scotland) and Zeebrugge (Belgium).

In 2009 the Department for Transport received its sole application for grant for a Norfolkline ferry service between Rosyth and Zeebrugge (Ro-Ro cargo). The amount of the award was €2

million for a 3-year period from May 2009 to May 2012. The current Rosyth-Zeebrugge service is operated by DFDS Seaways and runs 3 times a week.

No other grant for MOS services have been awarded under the WFG scheme. However, numerous enquiries have been received by the UK authorities over the past several years.

In terms of its effects, new shipping routes stimulated by the WFG have been successful and enabled modal shift to waterborne transport that would not otherwise have been possible.

As of November 2014, a total of 83,559 lorry journeys have already been removed from Britain's roads. The Rosyth-Zeebrugge Superfast ferry service reduced road transportation by approximately 16 million lorry kilometres.

As of November 2014, a grant expenditure of £3,078,944 has delivered modal shift benefits of £15,047,942.

UK authorities concluded that although the number of new shipping routes stimulated by the WFG has been small, they have been successful and enabled modal shift to waterborne transport that would not otherwise have been possible.

The WFG does not target short sea shipping only; coastal services are also covered. The WFG does not target MOS for which Maritime State Aid rules are not optimal. Stakeholders have identified the fixed timeframe of 3 years set forth by the EU decision as being a significant barrier to the WFG operation. According to the UK authorities the need to have much shorter, more targeted grant periods according to the needs of specific programmes has been repeatedly underlined.

5.4. France

In France an incentive policy for an intermodal shift named "Encouraging modal shift" had been implemented by French Ministry (Department in charge of freight & intermodality) from 2013 to 2017. This incentive had aim to Encourage the development of combined transport by compensating partly the additional costs induced by transshipments related to combined transport chains and massification operations.

Legislative and regulatory framework of Combined Transport in France can be broadly divided:

- Law n.2009-967 of 3rd August 2009 on the programming of the implementation of the Grenelle Environment;
- Law n.2015-992 of 17th August 2015 on the energy transition towards green growth;
- European commission Decision of 19/06/2014 adopting French State aid in support of modal shift.

The objective of this incentive scheme is the development of combined transport by compensating partly the additional costs induced by transhipments related to combined transport chains and massification operations.

The scheme aims at enabling combined transport operators to establish a competitive price encouraging the development of combined transport therefore modal shift.

Modes of transport covered are:

- rail/road;
- inland water/road;
- inland water/rail;
- short sea shipping/road.

The French Ministry (department in charge of freight & intermodality) publishes annually a call for expression of interest in the OJEU, the French BOAMP, and on the Ministry website. The call aims at collecting combined transport traffics as operated over the last year. The State signs a contract with each eligible company having answered to the call and reported their traffics. The amount of the aid is calculated on the basis of the truck equivalent units (UTI) transhipped.

The global amount of the aid depends on the annual State budget decision Regions, local authorities, or other public entities can contribute too depending on their resources (annual budget allocated 25-30 M€ - 140 M€ over 5 years).

Furthermore, the incentive scheme provided the reduction of 75% of the axle tax upon heavy goods vehicles operating dedicated pre & post trips by road combined with other modes (i.e. along a combined transport chain) and aid for the operation of freight combined transport services (rail, inland water, SSH except feedering). The aid shall remain below 30% of the total cost of transport including other possible aids for the same transport service.

Assessment of the period 2008-2012 demonstrated:

- a global increase of combined transport in France since 2008, except in 2009 due to the financial crisis. To face the crisis, combined transport operators had to reorganise their transport plans leading to a full recovery in 2011 (i.e. back to the levels of truck equivalent units achieved before the crisis);
- the traffic of truck equivalent units increased by more than 10% and the number of combined transport operators having received the aid increased by almost 11%, demonstrating therefore the attractiveness and efficiency of the scheme;
- the combined transport traffics receiving the aid have increased from 6 billion ton-kms in 2008 to 8.5 billion ton-kms in 2012. Only for maritime combined transport the traffic has stagnated with a unique operator having received the aid over the whole period;
- monetisation of externalities shows gains achieved: 9% for CO2 emissions, 44% for pollution, 6% for noise, 30% for safety, 11% for road congestion representing a global saving of almost 800 M€.

The scheme helps combined transport to build up and become more competitive against the all road transport model. It is appreciated by all the beneficiaries because it is transparent and applies equal criteria for all modes of transport (the main criterion being the transshipment operation).

However, few dead-weights have been spotted (the year when aids have increased by 50% some costs have incurred the same amount of increase). Also, some beneficiaries did not grasp the benefit of the aid in order to revise their business / operational model.

5.5. France and Spain

In France and Spain an incentive policy for an intermodal shift named “International Agreement France-Spain” is in effect.

This incentive has aim to encourage the development of combined transport by compensating partly the additional costs induced by transshipments related to combined transport chains and massification operations.

Legislative and regulatory framework of Combined Transport between France and Spain can be broadly divided:

- International Agreement of 2006 between France & Spain establishing an Intergovernmental Commission (CIG) for the selection, implementation and monitoring of MOS project(s) between France & Spain;
- International Agreement of 2009 on the selected MOS project(s) between France & Spain and their implementation and monitoring;
- Convention(s) of implementation, operation and financing of MOS service(s) established between France, Spain and the selected operator(s);
- Article 88(3) of the EC Treaty (on State Aids).

Through this incentive scheme, France & Spain wish to promote the development of MOS with a view to offer a sustainable solution to freight transport and limit road traffic across the Pyrenees mountains.

In this context, MOS shall offer an intermodal door-to-door transport service between ports of international dimension enabling a significant modal shift from road to maritime. The incentive scheme falls within the framework of the TEN-T and its priority project 21.

The aid is granted to new or existing service(s), provided that such service(s) comply with MOS requirements and the terms of references of the call for proposals launched under the patronage of CIG.

The aid is capped in amount and duration and takes the form of direct subsidy(ies). It can be complemented by EU funding (e.g. Marco Polo, TEN-T, CEF including financial instruments, except EU funding).

To comply with EU rules 2 options are possible:

- States grant a subsidy limited to a maximum of 35% of the eligible costs for a period of 5 years (conditional to EC approval);
- States give subsidy limited to a maximum of 30% of the operating costs for a period of 3 years (in accordance with EC guidelines on State aid for maritime transport).

Applicants should be at least a shipping company and the port authority or port operator of the ports involved. Other stakeholders might join the consortium such as ship-owners, road or rail hauliers, logistics companies, freight forwarders, financial institutions, etc. They responded to a call for proposals launched conjointly by France & Spain in 2007, and compliant with TEN-T framework/criteria. One or several MOS lines can be supported under the same call for proposals provided this is technically and economically relevant.

The MOS proposal(s) shall demonstrate that break-even is achieved following the period of subsidy and include a business plan over 10 years of operation. It shall also present the complementary sources of financing needed and demonstrate their safeguarding. The amount of the aid depends on the definition of the service(s) proposed by the applicant(s).

Port authority(ies) applying shall express their support to the MOS project, describe their current capacity and/or the need for investment in infrastructure or upgrade of facilities and equipment necessary to operate the MOS service(s), as well as their applicable fares.

Evaluation criteria of the proposals include:

- the volume of freight traffic shifted from road to maritime through MOS service(s). Proposals falling below the minimum traffic volumes specified in the call(s) for each year of operation are not eligible;

- the quality of the project(s), e.g. time to implementation, intermodal connections and ports accessibility, service(s) frequency/regularity, quality of ports facilities includes ICT, integration within the TEN-T network;
- the economic and financial performances of the project(s) including credibility and sustainability of the project(s), relevance of the candidate(s), customers engagement, soundness of the business model.

Under the patronage of the CIG, a Convention of implementation, operation and financing of the proposed MOS service(s) is then established between France, Spain and the selected operator(s). The Convention specifies the rules for granting States subsidies, the rights and obligations of the States and the operator(s) respectively, as well as implementing rules (e.g. insurances, guarantee, fare policy, schedule, service(s) specifications), parameters and quality criteria for the MOS service(s). The Convention has a minimum duration (e.g. 7 years) and it does not warranty a right of exclusivity to the operator selected. However, States commit themselves to not subsidise competing MOS in parallel, or to support twice the same MOS or sections of MOS. The MOS line(s) may include short sea shipping section(s) and could be extended or connected to other port(s) in EU or third countries (although these extensions or connections are not supported by the incentive scheme).

Compliance with the requirements of the TEN-T and eligibility criteria of the Marco Polo programme apply to the incentive scheme. As a result, States might propose to integrate their MOS line(s) to the TEN-T network.

The MOS service(s) is to be implemented within 1 year maximum after the signature of the Convention. In case the operator(s) do not implement the MOS service(s) according to and till the end of the Convention, subsidies will have to be paid back while fines might also apply. States will monitor the good implementation of the Convention on the basis of annual & quarterly reports (financial & operational) from the operator(s).

The international agreement between France & Spain has no duration. State aid can be granted at any time following approval by the EC and depending on States budget availability. The total

budget allocated by Spain to support MOS services is €30 million. French budget to support MOS and short sea shipping services is €41 million.

Expected effects after 5 years of operations are:

- the annual traffic volume will reach 100,000 trucks (or equivalent trucks). This represents a target of 5% to 15% of the alternative road corridor(s);
- frequency of service(s) shall increase over time to accommodate increase in traffics/demand (e.g. additional rotations and/or vessels).

The analysis points out that the main strengths of this incentive scheme are:

- Shipping lines supported through the scheme demonstrate the existence of a market & environmental benefits;
- The scheme procedure enables States to define very specific requirements (i.e. targets, services specifications);
- Well defined governance and close monitoring of service(s) implementation and associated results (i.e. through the CIG).

Although, the main shortcomings of this incentive scheme are:

- Length of State aid clearance procedure i.e. in effect start up aid is available way too long after the readiness of the launch or upgrade of the MOS service(s);
- Only 2 MOS proposals received in response to the call (1 just starting and 1 stopped);
- Administrative heaviness;
- Dependency to vessels suitability, availability, efficiency, and affordability.

One of the MOS subsidised has stopped due to financial loss, i.e. despite good traffic volumes (average load factor of 72%) operating costs were too important. Moreover, the demand is very sensitive to price what limits the possibility to increase tariffs, and commercial discounts might safeguard traffics but jeopardise profitability.

MOS services are very sensitive to endogenous factors such as reliability, frequency, arrival/departure time, balance of trade, type of vessels, etc., as well as exogenous factors such as political context, weather conditions, ports fares/taxes, logistics chains, broad stakeholder cooperation, etc. Although the terms of reference and the Convention are very detailed, several (major) uncertainties remained in the proposal(s) received.

For those reasons, States should conduct audit and complementary feasibility study to support a deeper assessment/scrutiny of the proposal(s) called for.

5.6. Austria

In Austria an incentive policy for an intermodal shift named “Programme of Aid for Innovative Combined Transport” is in effect.

This scheme was put in place to achieve a modal shift of freight traffic from road to alternative modes of transport. The programme provides financial support to foster private investment in the field of combined transport, in particular by supporting investments in new technologies and concepts intended to improve the quality of services offered.

Legislative and regulatory framework of Combined Transport in Austria can be broadly divided:

- The “*Allgemeine Rahmenrichtlinien für die Gewährung von Förderungen aus Bundesmitteln*”;
- The 51st Order of the Federal Minister for Finance 2004;
- The Guidelines of the Programme of Aid.

The aid takes the form of non-reimbursable subsidies. For all the subsidies, the minimum amount to be granted is € 8,000 and the maximum is limited to € 800,000 per project or per beneficiary and year. A project may only receive aid once.

Beneficiaries are transport undertakings, as transshipment and logistic companies, forwarding agents, port-operators, shipping and railway companies. The scheme addresses EU companies having registered offices, agencies, branches or subsidiaries in Austria.

Depending on the types of measure the aid intensity varies. Aid is granted for 3 types of measures:

- Acquisition of innovative technologies and systems to improve combined transport systems. It includes innovative transshipment/loading technologies (e.g. horizontal transshipment technologies) and logistic systems, systems of communication for users of combined transport. For this type of measure the aid intensity is up to 30% of eligible costs.
- Acquisition of equipment for combined/ intermodal transport. It includes inland and land containers (excluding maritime containers), swap bodies, especially with innovative features, special vehicles and containers for combined transport (e.g. driverless transport systems, ACTS vehicles), adaptations of semitrailers to facilitate loading, adaptations for initial and subsequent road transport equipment, adaptations of ships lighters for containers and WAB (exchangeable container) transport. For this type of measure the aid intensity is up to 30% of the eligible costs.
- Feasibility studies. It includes feasibility studies for specific implementing measures, including preparations for international cooperation, in the area of combined transport, such as goods transport in the framework of EU programmes (e.g. CEF, EUREKA, INTERREG) with a high national and international interest. For this type of measure the aid intensity is up to 50% of the eligible costs.

In case of cumulation with national or Community subsidies the maximum aid levels established by each measure shall be respected. Where the eligible project costs are lower than foreseen and the other aid conditions are met, the aid is proportionally reduced.

Additional conditions apply to the selection of projects are:

- The aid recipient must be in a good financial position;

- The project will only receive aid if it cannot be carried out on the required scale without State aid and/or the aid represents a major incentive to expedite the implementation of the project;
- The total funding, taking into account the State aid, must be secured;
- The profitability of the project according to general commercial principles must be guaranteed;
- The planned measure may not lead to unacceptable distortions of competition between the transport modes or terminals.

Furthermore, projects are selected taking into account:

- the degree of innovation of the measure;
- the achievable modal shift;
- the type of goods to be shifted (esp. dangerous goods);

The assessment of the project is based on:

- annual accounts for the last 3 years;
- business forecasts;
- project description;
- project cost breakdown;
- financing plan;
- description of the economic impact of the project (profitability, capacity utilisation);
- description of the impact (regarding competitiveness of combined transport vis-à-vis competing services, as well as on the environment, reduction in traffic and safety);
- forecast modal shift in tonnes, tonne- kilometres, consignments and loading units (in each case broken down into main section and road section of journeys); time series over the last three years, ratio to annual and planned transport volumes.

The aid is paid in instalments in proportion to the proven progress of the project. Payment of the aid is made after settlement of the project and submission of proof that the remaining aid conditions and requirements have been met.

The examination of the supporting documents and other evidence is carried out by the ERP (European Recovery Programme) Fund on behalf of the Federal Ministry for Transport, Innovation and Technology.

The programme exists since 1999 and has been renewed several times for the period 1999-2002, 2003- 2008, 2009-2014, 2015-2020.

Total budget allocated for the period 2015-2020 is € 18 million (i.e. a 25% reduction compared to the previous period).

The evaluation of the implementation of the Programme of Aid for Innovative Combined Transport for 2009-2014, highlighted several achievements made in line with the European transport policy.

The programme achieved a shift of road transport to other modes of transport of about 48 million tonnes during the above period. The overall cumulated shift away from road reached 58 billion kilometre-tonnes. This means that the set objective for the scheme of an average shift of 2 billion kilometre-tonnes per year was by 4 times surpassed with an average of some 9.5 billion kilometre-tonnes shift per year. In the above period, 653,000 tonnes of carbon dioxide per year were not emitted, while the NOx emissions were reduced by 5010 tonnes per year. Fostering innovations is a good mean of fostering private investments. The scheme is straightforward and transferable, and it is easy to articulate with EU programmes.

Such type of aid results in tangible outcomes / results but do not necessarily create new services because the scheme focused on services quality enhancement in order to drive modal shift forward. Furthermore, it is difficult to evaluate whether positive effects are long lasting.

6. Towards the future: The Med Atlantic Ecobonus incentive scheme

The Med Atlantic Ecobonus (MAE) Action is a policy study carried out by Spain, France, Portugal and Italy with the financial support of the European Union (EU) through the Connecting Europe Facility (CEF).

The study performs two main objectives:

- Set out a proposal on the potential use of eco-incentive measures at EU level to develop sustainable freight transport services in the Trans-European Transport Network (TEN-t) through a common approach.
- Develop a complete *ex-ante* analysis implementing the common approach for a case-study, as an example to prove the impacts of such approach.

The Action ends at proposal level and is intended to the debate. Therefore, it aims to be of use of the European Commission (EC) and the Member States (MS) to drive a formal debate towards the possible implementation of eco-incentive measures in the future, extending the scope of the existing EU funding programs in the field of sustainable freight transport services (e.g. CEF).

The main goal of the eco-incentives is to trigger relevant decisions in the transport market that could bring the greatest socio-environmental benefits to the EU (globally) and to the MS (locally) on a market basis.

Carbon emissions, air pollution and social costs (congestion, accidents and noise) are the main socio-environmental factors and the ultimate goals of public support towards sustainable mobility, with different means of achievement (e.g. integration, optimization, modal balance, resource efficiency, technology, alternative fuels, etc.). The eco-incentive measures target these factors and allow the market to decide on the means to reduce them.

With the above scope, the eco-incentive measures seek to complement other existing approaches to support sustainable freight transport services, such as:

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- Regulation, setting the minimum environmental standards for all modes of transport
- Charging (negative incentives), following the *pollutant pays* principle
- Action grants, in the form of reimbursement of eligible costs when there is a funding gap amount (i.e. the current CEF approach)
- State aids, in compliance with the compatibility rules applicable in the EU market
- Financial instruments

The eco-incentive measures broaden the scope of the list above by considering a type of incentive which is proportional to the specific socio-environmental merits that are attained by the market through specific actions.

Within the provisions of the financial rules applicable to the general budget of the EU, the eco-incentive measures should be conceived as a form of action grants not linked to costs and based on the achievement of actual and demonstrated socio-environmental merits measured through relevant tools.

The fact that the eco-incentive is not linked to the cost of the action but is proportional to a socio-environmental merit would stimulate and give more flexibility for the market to decide upon those actions which could contribute most to achieve the greatest socio-environmental merit possible. Then the EC and the MS would still have the possibility to limit the type of actions that can be considered as eligible for eco-incentive measures, but with more flexibility than they do currently (i.e. not necessarily restricted to specific requirements set out in sector-specific rules). In doing so, the eco-incentive measures ultimate target is to speed up transition towards sustainable patterns in freight mobility. The aim is to reward actual socio-environmental merits on a rolling basis, not to compensate for the funding gap amount of green investments (which in the long run might be difficult to demonstrate for certain actions, even if they bring great socio-environmental benefits), or to compensate for the initial losses in the launching or upgrading of new services (i.e. start-up aids).

By way of illustration, regulatory measures have proved to be the right approach when the market is ready for the uptake of binding standards. The implementation of the EURO standard on heavy goods vehicles (HGV) fleets or the next cap for sulfur content in marine fuels by 2020 are examples of successful and accepted (though challenging) regulatory measures. However, the way regulatory measures are used depends on the mode of transport. As an example, given the intrinsically global character of the maritime transport the EU has to regulate for this particular mode at the pace of the International Maritime Organization (IMO), which is not the case for the inland modes.

Moving to positive incentives, action grants in the form of reimbursement of eligible costs have proved to be a good approach as well when there is a funding gap amount to compensate, such as in infrastructure investments, facilities or pilot actions (e.g. on experimental technologies or innovative solutions, also in freight transport services). This is the approach in the current CEF, where eligible costs are restricted to certain actions through pre-established criteria with reference to sector-specific requirements.

However, this might not be the most effective approach for triggering decisions with great socio-environmental benefits that either demonstrate null or very low funding gap amount, or do not correspond to pre-established eligible costs for any reason not related to the actual contribution of the action to reducing socio-environmental impacts.

In a context of very ambitious challenges in freight mobility for the coming years with regards to the environmental and social impacts of transport, the eco-incentive measures bring a new and complementary approach to stimulate and accelerate the market uptake of those actions that could make the greatest contribution to reducing external costs.

Following the common EU approach, a complete *ex-ante* analysis has been performed as an example to prove the impacts of such approach on a possible eco-incentive scheme of the interest to the MS involved in the MAE Action: Portugal, Spain, France and Italy (named as the case-study).

Following the regional approach, the targeted market for the eco-incentive measures in the case-study is the MoS ferry and ro-ro transport activities servicing alternative routes to the road transport in the West Mediterranean and the Atlantic regions.

This market segment is currently performing with around 200.000 HGV per year in average. This traffic is very sensitive to the maritime price since there is an alternative route by road. On the other hand, vessels in this market usually sail at higher speeds to secure frequencies that are attractive to the road haulers, which in turn produces higher emissions. Moreover, shipowners have been using smaller vessels to get viable utilization rates. Finally, fleet designs in this market have been considering classic marine fuels for the vessels in order to minimize costs and to offer competitive prices to the road haulers (a scenario changing by 2020). As a result, the environmental performance of the maritime leg is not optimized in this market. Conversely, road has significantly reduced emissions over time (specially air pollution factors) as a direct consequence of the transition in HGV environmental performance from the EURO III to the EURO VI standard. However, road transport is still responsible for significant social impacts, particularly due to congestion, which concern the MS involved. Moreover, congestion is especially severe in two sensitive areas such as the cross-border sections of the Pyrenees and the Alps in the Atlantic and the Mediterranean core network corridors (CNC).

All of the above makes the targeted market well suited for an eco-incentive scheme with the main goal of improving the environmental performance of the MoS through specific actions (incurring costs to the shipowners), while reducing social costs of road transport. The merit to be incentivized is the external costs saving from freight units using the greener MoS compared to the road-only alternative. Following the Italian Ecobonus approach, which is recognized as a best practice by the EC and the ECA, the eco-incentive would be granted to the users of the maritime services. In other words, the eco-incentive would only apply if maritime operators implement actions improving the environmental performance of the maritime leg (green actions) and the road operators remain using the maritime services. With this approach the eco-incentive is implemented in a non-discriminatory way (i.e. demand approach), deadweight is minimized (i.e. green action as a requirement to benefit from the scheme) and funding is made conditional upon results (i.e. eco-incentives will be granted upon proof of boarding).

The following eligibility criteria have been considered for the case-study (all criteria should be considered together), including 5 years as eligible period (2020-2024). It must be emphasized that these eligibility criteria do not relate to any institutional action already committed by the promoters of the study and must be taken as an example at this stage. In fact, these eligibility criteria might be revised (enlarged or restricted) should this example is moved to an implementing action in the future:

- Only maritime services consisting in international lines with no more than 2 stops or one enroute call.
- Direct beneficiaries shall be the users of the maritime services upon proof of boarding and proof of purchase (i.e. provided by the transport operator and the shipowner). By users it is meant the purchasers of the maritime ticket. Users will also be responsible for the proof of the boarding event.
- Lines shall go from / to a port of the implementing MS to / from another EU port or between ports of the implementing MS.
- Domestic services are not eligible in the example.
- Only maritime services having a door-to-door road alternative in operation are eligible (i.e. no pure channel crossing lines).
- Only ro-ro, ro-pax or con-ro vessels are eligible (for ro-pax and con-ro, only freight on ro-ro units is eligible).
- Regular services with a minimum frequency of 1 departure per week by a dedicated vessel (i.e. no seasonal services).
- Services consisting of new or upgraded lines producing external costs savings per transported unit compared to the road-only alternative. Such merit shall be demonstrated and monetized using the scheme's external cost calculator tool and incur direct costs to the shipowners by means of green actions improving the environmental performance of the maritime service.

- Only accompanied or non-accompanied trips of rolling cargo, intended as freight that can be loaded and unloaded autonomously on the vessel (i.e. no cranes used), may be considered eligible. New cars would be considered eligible as long as they are loaded on trucks.
- Direct beneficiaries shall commit to a minimum number of trips (100 trips a year).
- Maritime services shall be open to all users under the same conditions and in a non-discriminatory way.
- Only services using vessels complying with 2020 sulfur cap (or its equivalent with abatement technologies) are considered eligible

Then, the following scenarios are compared:

- A baseline scenario, with all MoS switching from high sulfur fuel oil (HSFO) to marine gasoil (MGO) or to low sulfur fuel oil (LSFO) to comply with the International Maritime Organization (IMO) 0,5% sulfur cap by 2020. As result an estimated increase of 12% in the sea rates is considered (due to the higher price of these fuels), leading to modal back shift effects. No eco-incentive is granted in this scenario (i.e. regulation merit)
- A green scenario, with all MoS switching to LNG and the sea rates maintained. An eco-incentive is granted in this scenario, thus leading to a modal shift effect. The choice of LNG for the green scenario is exclusively based on the assumption that this option may be the greenest at this time. Thus, it will return the maximum eco-incentive possible and allow the estimation of the maximum budget needs, which is an objective of the *ex-ante* analysis.

The same MoS are considered for simulation in both scenarios (i.e. no market development as a result of the eco-incentive). In particular, 5 MoS in the West Mediterranean and 6 MoS in the Atlantic. Most of these MoS are existing services at this time or having existed in the past.

Following to these scenarios, three tools have been designed and calibrated *ad hoc* for the *ex-ante* analysis:

- i. An external cost calculator, to calculate the eco-incentive and assess the socio-environmental impacts
- ii. A transport modelling tool, allowing for the following outcomes in combination with the external cost calculator:
 - Effects on demand in the scenarios with and without eco-incentive
 - Net external costs savings comparing both scenarios
 - Total eco-incentive given (i.e. the maximum budget needs for the proposed scheme)
 - Additional incomes to shipowners through the additional demand due to the modal shift effect
- iii. A shipowners' perspective tool, estimating the additional net incomes to shipowners as a result of the additional demand (due to the modal shift effect) and assessing the extent to which these additional incomes are attractive enough for the shipowners to implement the green actions (LNG investments in the case-study).

The complete impact assessment is performed with these three tools for both the West Mediterranean and the Atlantic regions. A brief summary of the results is included below, in aggregate for both regions.

Overall, the assessment proves positive impacts. The eco-incentive measure proves its ability to trigger the green actions improving the environmental performance of the MoS while reducing social costs from road transport (both goals of the eco-incentive scheme, as designed).

Finally, as part of the *ex-ante* analysis, a possible implementing process has been outlined, as example. In brief, and on the one hand, such process includes the procedures that MS would need to complete to secure the funding (both from the EU and the MS). On the other hand, once funding is secured, the procedures that MS would have to implement to launch and manage the eco-incentive scheme.

7. Conclusions

The analysis of these incentive schemes towards multimodal transport in Italy, Croatia and in other countries has resulted in the following findings.

As regards the intensity of financial support, it is limited at 35% or 30% of the eligible costs over 5 or 3 years (as per State aid rules) and in it is depending on the environmental benefits or as per financial appraisal. For most of the case, the incentive scheme are direct grants (start up aid, discount on cost of transshipment, subsidy to seaway price, operating costs, vehicles hiring, equipment, technologies, staff training), possibly complemented by grants for infrastructure or fiscal measures.

The sources of funding are from States budget, earmarked in relevant national legislative and associated financial frameworks with variable annual budget to euro 30 million.

Beneficiaries are mainly road haulers companies, combined transport operators or freight forwarders, rail operators, shipping companies (any EU beneficiary & routes / lines). Beneficiaries and routes are identified and selected through calls for expression of interest.

Specifically, Croatian incentive does not provide transfer of State resources (direct grants), fiscal measures, economic advantage, financial aid to reduce operational costs of undertakings (e.g. labour related costs/training aid, etc.), startup aid, investment, restructuring aid but it is provide only business advantage based on the exemption from driving bans for road vehicles. Therefore, this incentive scheme potentially encourages road hauliers to shift road traffic towards maritime, rail and inland waterways by enhancing their business performing freight transport services during restrictions which affect other operators not using CT solutions. For these reasons, this scheme has high potentiality to be implemented in other places/countries.

Instead, in Italy the short-term nature of the incentive schemes has held back shipping lines from committing to long-term investments to structurally change/enhance the provided services (e.g. offering a higher number of sailings per week, refurbishing/upgrading port facilities, investing in green technologies etc.). In case similar incentive schemes are implemented in the future, the duration of the scheme cycle should be extended to offer longer term

visibility/certainty, in order to have more means to act on the supply side as well, as is currently being done in the rail sector in Europe.

The time-management of the incentive schemes might be enhanced with appropriate publicity being made well in advance. If such an incentive schemes are announced at without a proper dissemination campaign, it is inevitable that instead of incentivising the shift to another transport mode, it will just result in part of the transportation costs being transferred from private companies to the State, i.e., to tax payers.

Moreover, in the case of the Ecobonus scheme has doubtlessly increased the awareness of road haulage companies with respect to RoRo transport services. Many new Italian and Spanish users (road hauliers) have formed partnerships in order for unaccompanied trailers travelling from Italy towards Spain, and vice-versa, to be picked up at the ports, driven until their final destination and back to the ports by the road haulage companies of the given destination country. Allowing for a larger number of trailers to travel unaccompanied leads to a considerable increase in the efficiency of freight transport. Hence, it is suggested to promote the creation of partnerships of this kind in the context of the establishment of a new scheme.

Therefore, a coherent promotion of a scheme for intermodal transport in Italian and Croatian territories is needed. An intermodal strategy is needed at country level to guide public and private investment.

Specifically, the overall strategy for combined transport development should investigate (re-) activating incentive scheme in favor of intermodal transport such as:

- Derogation from Directive 96/53/EC governing the weights and dimensions of HGVs;
- Exemption from driving bans for road vehicles (e.g. weekend ban, etc.);
- Vehicle tax exemption of up to 100% for vehicles used exclusively in terminal pick-up and delivery operation;
- Exemptions from road usage fees or tolls for vehicles in CT;
- Incentive scheme for purchase and use of intermodal equipment.