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GOOD PRACTICES ON MULTI-MODAL FREIGHT TRANSPORT POLICIES AND TRUCK MANAGEMENT ON HIGHWAYS

TECHNICAL COMMITTEE B.4 FREIGHT



STATEMENTS

The World Road Association (PIARC) is a nonprofit organisation established in 1909 to improve international co-operation and to foster progress in the field of roads and road transport.

The study that is the subject of this report was defined in the PIARC Strategic Plan 2016–2019 and approved by the Council of the World Road Association, whose members are representatives of the member national governments. The members of the Technical Committee responsible for this report were nominated by the member national governments for their special competences.

Any opinions, findings, conclusions and recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of their parent organisations or agencies.

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*World Road Association (PIARC)
Arche Sud 5° niveau
92055 La Défense CEDEX, FRANCE*

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TRANSPORT POLICIES AND
TRUCK MANAGEMENT ON
HIGHWAYS**

TECHNICAL COMMITTEE B.4 *FREIGHT*

AUTHORS/ ACKNOWLEDGEMENTS

This Collection of Good Practices has been prepared by the working group 4.1 National policies for multimodal freight transport and logistics and working group 4.2 Truck traffic on highways for sustainable, safer and higher energy efficient freight transport of the Technical Committee B.4 Freight of the World Road Association PIARC.

The contributors to this Good Practice Collection are:

- Patrick Grass (Austria)
- Hinko van Geelen (Belgium)
- Mohammad Tayyaran (Canada)
- Libor Krejci (Czech Republic)
- Taneli Antikainen (Finland)
- Massimo Marciani (Italy)
- Yoshi Imanishi (Japan)
- ElseMarie Marskar (Norway)
- Martin Ruesch (Switzerland)
- Tiffany Julien (United States)

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GOOD PRACTICES ON MULTI-MODAL FREIGHT TRANSPORT POLICIES AND TRUCK MANAGEMENT ON HIGHWAYS

Well-functioning logistics and freight transport systems are crucial for a prosperous economy and a thriving society. The World Road Association/PIARC B4 Freight Technical Committee examines issues surrounding multi-modal and road cargo transport and reviews practices related to truck management and energy-efficient movement of freight.

Within the freight committee is the B4.1 Working Group whose strategies are to investigate and document countries' national policies for freight transport and logistics, including good practices in evidence-based freight transport policy-making and evaluation of initiatives. In order to gain a better understanding of the types of multi-modal freight policies developed around the world, the B4.1 Working Group created a survey questionnaire to investigate and document member countries' multi-modal national policies for freight transport and logistics. In the survey, the working group looked for national case studies, good practices analysis, and valuable lessons of less successful policies and practices that have been implemented or at least demonstrated under real freight transportation systems and logistics networks. These practices must be feasible, transferable and as innovative as possible.

The strategies of B4.2 Working Group are to investigate countries' transport and development plans, strategy for managing freight transport, and individual measures for freight transport management, including good practices of freight transport management on highways and motorways. In order to deeply understand the freight transport management and strategies on highways and motorways, the B4.2 Working Group conducted surveys on the truck traffic management schemes for sustainable, safer and higher energy efficient freight transport using a questionnaire to member countries.

The purpose of these fact sheets are to highlight projects, initiatives and policies that have been utilized by member countries in an effort to provide increased efficiencies within their respective freight transportation systems. Strategies and solutions from Austria, Belgium, Canada, Czech Republic, Finland, Italy, Japan, Norway, Switzerland and USA offers good practice ideas on a variety of topics such as heavy vehicles charges, long combination vehicle programs, national highway freight program, speed management of vehicles at work zones, ITS based data collection and sharing of truck movements, programs to promote the development of intermodal terminals and private sidings and incentives for modal shift from road to rail transport.

The sharing of information provides valuable insight to the impacts, benefits, success factors and the transferability of these examples to other places and contexts.

For more information on a good practice, we invite you to contact the responsible organization or the author of the fact sheet (see contact info on each factsheet).

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LES BONNES PRATIQUES EN MATIÈRE DE POLITIQUES DE TRANSPORT MULTIMODAL DE MARCHANDISES ET DE GESTION DES POIDS LOURDS SUR LES AUTOROUTES

Le bon fonctionnement de la logistique et des systèmes de transport de marchandises est crucial pour une économie prospère et une société prospère. Le Comité technique sur le fret de l'Association mondiale de la Route/AIPCR B4 examine les questions relatives au transport multimodal et routier de marchandises et passe en revue les pratiques liées à la gestion des camions et à l'efficacité énergétique du transport des marchandises.

Au sein du comité des transports de marchandises se trouve le groupe de travail B4.1 dont les stratégies consistent à étudier et à documenter les politiques nationales des pays en matière de transport de marchandises et de logistique, y compris les bonnes pratiques en matière d'élaboration de politiques de transport de marchandises fondées sur des données probantes et d'évaluation des initiatives. Afin de mieux comprendre les types de politiques multimodales de transport de marchandises élaborées dans le monde, le Groupe de travail B4.1 a créé un questionnaire d'enquête pour étudier et documenter les politiques nationales multimodales des pays membres en matière de transport de marchandises et de logistique. Dans l'enquête, le groupe de travail a recherché des études de cas nationales, une analyse des bonnes pratiques et des enseignements précieux sur les politiques et pratiques moins efficaces qui ont été mises en œuvre ou du moins démontrées dans le cadre de systèmes de transport de marchandises et de réseaux logistiques réels. Ces pratiques doivent être réalisables, transférables et aussi novatrices que possible.

Les stratégies du groupe de travail B4.2 consistent à étudier les plans de transport et de développement des pays, la stratégie de gestion du transport de marchandises et les mesures individuelles de gestion du transport de marchandises, y compris les bonnes pratiques de gestion du transport de marchandises sur autoroutes et autoroutes. Afin de mieux comprendre la gestion et les stratégies du transport de marchandises sur les autoroutes et les autoroutes, le Groupe de travail B4.2 a mené des enquêtes sur les systèmes de gestion du trafic de camions pour un transport de marchandises durable, plus sûr et plus économe en énergie en utilisant un questionnaire aux pays membres.

Le but de ces fiches d'information est de mettre en évidence les projets, initiatives et politiques qui ont été utilisés par les pays membres dans le but d'accroître l'efficacité de leurs systèmes de transport de marchandises respectifs. Stratégies et solutions de l'Autriche, de la Belgique, du Canada, de la République tchèque, de la Finlande, de l'Italie, du Japon, de la Norvège, de la Suisse et des États-Unis offrent des idées de bonnes pratiques sur une variété de sujets tels que les taxes sur les poids lourds, les programmes de véhicules longs routiers, le programme national de fret routier, la gestion des vitesses des véhicules sur les chantiers, la collecte de données sur les STI et le partage des déplacements des camions, les programmes pour favoriser le développement des terminaux et voies de garage privées intermodaux, les mesures d'encouragement au report de transport routier au rail.

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Le partage de l'information permet de mieux comprendre les impacts, les avantages, les facteurs de succès et la transférabilité de ces exemples à d'autres endroits et contextes.

Pour plus d'informations sur une bonne pratique, nous vous invitons à contacter l'organisation responsable ou l'auteur de la fiche technique (voir les coordonnées sur chaque fiche technique).

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BUENAS PRÁCTICAS EN MATERIA DE POLÍTICAS DE TRANSPORTE MULTIMODAL DE MERCANCÍAS Y DE GESTIÓN DE CAMIONES EN LAS CARRETERAS

El buen funcionamiento de los sistemas logísticos y de transporte de mercancías es crucial para una economía próspera y una sociedad próspera. El Comité Técnico de Transporte de Mercancías de la Asociación Mundial de Carreteras/PIARC B4 examina las cuestiones relacionadas con el transporte multimodal y de carga por carretera y examina las prácticas relacionadas con la gestión de camiones y el transporte de mercancías energéticamente eficiente.

Dentro del comité de transporte de mercancías se encuentra el Grupo de Trabajo B4.1, cuyas estrategias consisten en investigar y documentar las políticas nacionales de los países en materia de transporte de mercancías y logística, incluidas las buenas prácticas en la elaboración de políticas de transporte de mercancías basadas en pruebas y la evaluación de iniciativas. Con el fin de comprender mejor los tipos de políticas de transporte multimodal de mercancías desarrolladas en todo el mundo, el Grupo de Trabajo B4.1 creó un cuestionario de encuesta para investigar y documentar las políticas nacionales multimodales de los países miembros para el transporte de mercancías y la logística. En la encuesta, el grupo de trabajo buscó estudios de casos nacionales, análisis de buenas prácticas y lecciones valiosas de políticas y prácticas menos exitosas que han sido implementadas o al menos demostradas en sistemas reales de transporte de carga y redes logísticas. Estas prácticas deben ser viables, transferibles y lo más innovadoras posible.

Las estrategias del Grupo de Trabajo B4.2 consisten en investigar los planes de transporte y desarrollo de los países, la estrategia para la gestión del transporte de mercancías y las medidas individuales para la gestión del transporte de mercancías, incluidas las buenas prácticas de gestión del transporte de mercancías en autopistas y autopistas. Con el fin de comprender en profundidad la gestión del transporte de mercancías y las estrategias de las autopistas y autopistas, el Grupo de Trabajo B4.2 llevó a cabo encuestas sobre los esquemas de gestión del tráfico de camiones para un transporte de mercancías sostenible, más seguro y con mayor eficiencia energética, utilizando un cuestionario enviado a los países miembros.

El propósito de estas hojas informativas es destacar los proyectos, iniciativas y políticas que han sido utilizados por los países miembros en un esfuerzo por aumentar la eficiencia de sus respectivos sistemas de transporte de carga. Estrategias y soluciones de Austria, Bélgica, Canadá, República Checa, Finlandia, Italia, Japón, Noruega, Suiza y EE.UU. ofrecen ideas de buenas prácticas sobre una variedad de temas, tales como los cargos por vehículos pesados, los programas de vehículos de combinación largos, el programa nacional de transporte de mercancías por carretera, la gestión de la velocidad de los vehículos en las zonas de trabajo, la recopilación de datos basada en los ITS y el intercambio de los movimientos de camiones, los programas para promover el desarrollo de terminales intermodales y apartaderos privados, y los incentivos para el cambio modal del transporte por carretera al transporte por ferrocarril.

El intercambio de información proporciona una visión valiosa de los impactos, beneficios, factores de éxito y la posibilidad de transferir estos ejemplos a otros lugares y contextos.

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Para obtener más información sobre una buena práctica, le invitamos a ponerse en contacto con la organización responsable o con el autor de la hoja informativa (véase la información de contacto en cada hoja informativa).

CONTENTS

- 1. PROGRAM TO PROMOTE THE DEVELOPMENT OF INTERMODAL TERMINALS AND PRIVATE SIDINGS (AUSTRIA)**
- 2. BELGIAN KM CHARGE FOR TRUCKS OF +3.5T**
- 3. ONTARIO'S LONG COMBINATION VEHICLE (LCV) PROGRAM (CANADA)**
- 4. SPEED MANAGEMENT AT WORK ZONES (CZECH REPUBLIC)**
- 5. FINLAND'S MARITIME STRATEGY AND ROLE OF PORTS & WATERBORNE TRANSPORT IN MULTIMODAL TRANSPORT**
- 6. USE OF HIGH CAPACITY TRANSPORT (HCT) ON THE FINNISH ROAD NETWORK**
- 7. MAREBONUS INCENTIVE (ITALY)**
- 8. FERROBONUS INCENTIVE (ITALY)**
- 9. PILOT PROJECT FOR ETC2.0-BASED FLEET ASSISTANCE SERVICE (JAPAN)**
- 10. TRANSFER OF GOODS FROM ROAD TO SEA (NORWAY)**
- 11. SWISS HEAVY VEHICLES CHARGE**
- 12. NATIONAL HIGHWAY FREIGHT PROGRAM (USA)**

1. Program to promote the development of intermodal terminals and private sidings



Keywords: multi-modal freight transport policy, subsidy, modal shift, internalization of external costs

DESCRIPTOR IN SHORT

According to the objectives of the Austrian transport policy the Federal Ministry for Transport, Innovation and Technology (BMVIT) supports the **modal shift of freight from road to rail and inland waterways by grants for the development of transshipment facilities** for combined transport and private sidings.

Grants are accessible to any private EU entity providing freight transport services and having at least one operational establishment registered in Austria. The Program is aimed at industrial and commercial companies transferring freight.



BACKGROUND

Promoting the development of private sidings and intermodal terminals is of special importance for a long-term strategy to create **equality in competition between road, rail and inland waterways, environmental protection and traffic safety.**

In Austria, more than two thirds of the cargo transported by rail is loaded/unloaded on private sidings. Since 1995 the Austrian government aids private companies supporting the development of connecting railways and transfer terminals in intermodal transport.

The Program has contributed to improving the prospects of **developing rail-bound door-to-door services**, thus ensuring a balanced development of both road and rail transports. The Program aims at facilitating the funding of the investments necessary to reach this objective, thus ensuring the development of private sidings and intermodal terminals to appropriate standards within due time.

Under the current guideline, aid is granted for **investments for the construction and the extension of infrastructure** for combinations of land-/water-bound modes of transport, in which cargo is handled either containerized or as piece/bulk freight. Furthermore, aid is granted for investments for the construction, extension and optimization of private infrastructure for connecting railways.

ELEMENTS

Scope of the Subsidy: Private Sidings and Intermodal Terminals

Extent: 15 to 50% of the investment, depending on the kind of investment.

The maximum amount of aid per project is EUR 2.5 million for creating new connecting railways, EUR 2.0 million for extending and EUR 300,000 for optimizing existing connecting railways, and EUR 2.5 million for creating and extending transshipment facilities. The maximum aid intensity is 50% of the eligible investment costs. The scheme sets a de minimis limit of EUR 10,000 per project.

Eligible costs: Infrastructure and equipment are eligible.

For example: tracks, loading platforms, tarmacked loading areas, lighting installations, crane systems, weighbridges, tracks on concrete beds or similar installations for handling hazardous goods, enclosure walls, and traction units used (exclusively) on the corresponding connecting railways (but excluding locomotives for open - line operation), locomotives used on the company premises or in their immediate vicinity, as well as facilities designed for shunting rolling stock (cable installations, etc.).

Obligations of the beneficiary: The beneficiary is obliged to use the connecting railway to provide transport services for the duration (of at least five years) and scope are specified by contractual agreement. If the scope of services agreed upon is not provided, the Austrian authorities can reclaim a proportion of the aid granted.

RELATED MEASURES	<p>Accompanying measures are the financial support to certain rail services. Such funding concerns those types of freight transport by rail that are most exposed to competition on the part of road transport due to their cost structure (e.g. single wagon transport, unaccompanied intermodal transport and rolling road). Subsidies contribute to covering additional costs incurred in rail transport but not in road transport.</p>																									
IMPACTS & BENEFITS	<ul style="list-style-type: none"> ✓ Stabilizing the share of rail freight transport in Austria and decrease in transport volumes being shifted to road (more than 19 million tons kept on rail) ✓ Reduction of carbon dioxide emission (1.1 million tons) ✓ Promote modal shift of freight from road to rail ✓ Develop rail transport ✓ Positive impact on environmental protection and transport safety 	<p style="text-align: center;">Potential Reduction of Carbon Dioxide Emission</p> <table border="1"> <caption>Potential Reduction of Carbon Dioxide Emission</caption> <thead> <tr> <th>Year</th> <th>in thousand of tons (metric tons)</th> </tr> </thead> <tbody> <tr> <td>2012</td> <td>95</td> </tr> <tr> <td>2013</td> <td>55</td> </tr> <tr> <td>2014</td> <td>55</td> </tr> <tr> <td>2015</td> <td>385</td> </tr> <tr> <td>2016</td> <td>135</td> </tr> </tbody> </table>	Year	in thousand of tons (metric tons)	2012	95	2013	55	2014	55	2015	385	2016	135												
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SUCCESS FACTORS	<ul style="list-style-type: none"> ✓ Incentive effect apart from developing railway infrastructure and public-benefit service orders ✓ Well-defined objectives of common interest (create preconditions in the origin and destination areas of rail freight traffic) ✓ Direct grant ✓ Payment corresponds to the specific needs of the project 																									
	<p style="text-align: center;">Average Rate of Amount</p> <table border="1"> <caption>Average Rate of Amount</caption> <thead> <tr> <th>Year</th> <th>Permitted Investment Costs (EUR)</th> <th>Permitted Amount (EUR)</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2012</td> <td>340</td> <td>75</td> <td>22%</td> </tr> <tr> <td>2013</td> <td>60</td> <td>22</td> <td>37%</td> </tr> <tr> <td>2014</td> <td>75</td> <td>18</td> <td>25%</td> </tr> <tr> <td>2015</td> <td>410</td> <td>105</td> <td>25%</td> </tr> <tr> <td>2016</td> <td>70</td> <td>16</td> <td>23%</td> </tr> </tbody> </table>		Year	Permitted Investment Costs (EUR)	Permitted Amount (EUR)	Percentage	2012	340	75	22%	2013	60	22	37%	2014	75	18	25%	2015	410	105	25%	2016	70	16	23%
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OUTLOOK & TRANSFERABILITY	<p>The Program was subject to external evaluations. The findings have documented that the program targets - both in terms of shifting traffic from road to rail and with regard to environmental effects - were fully reached.</p> <p>The scheme applies to all business sectors (e.g. commerce, small business and industry, forwarding companies etc.). The scheme and system are transferable to other countries.</p> <p>The developments in the future will be considered beyond the needs of industrial and commercial undertakings transferring cargo.</p>																									

MORE INFORMATION

Contact:

Schieneinfrastruktur-Dienstleistungsgesellschaft mbH
 E-Mail-Adresse
c.kierner@schig.com

Publications:

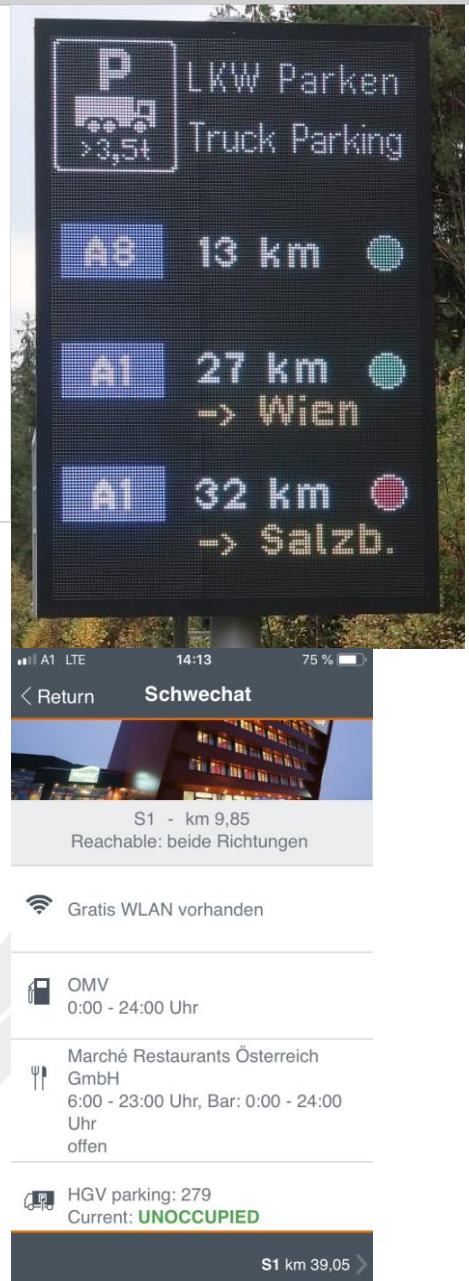
www.schig.com/en/
www.bmvit.gv.at/en

2. Truck Parking in Austria



Keywords: heavy goods vehicles, information about free parking spaces, driving time and rest periods

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">OUTLINE OF THE MEASURE</p>	<p>The truck parking information system assists professional truck drivers with the search for free parking spaces along motorways and expressways in Austria. The project has been developed by ASFINAG, the corporation building, maintaining and operating primary roads (motorways and expressways) in Austria. The aim of the project is to help truck drivers to find a suitable resting place on time in order to meet the rest periods. This also avoids unnecessary traffic searching for parking spaces.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">PROBLEM IDENTIFICATION (TARGETS/PURPOSE)</p>	<p>The big increase in road freight traffic has led to overloaded truck parking areas on the Austrian motorways and expressways at certain times. For the truck drivers at night it is difficult to find a safe and restful sleeping place. Parking spaces on the (small) parking lots, as well as at bigger rest areas and service areas are concerned.</p> <p>In addition, sufficient parking space is also essential for stopping during the day. The adequate supply of truck parking space also has work-related (respect of rest periods) and safety aspects (accidents caused by overtiredness). With the truck parking system, the ASFINAG offers a service to prevent the maximum authorized driving time or a lengthy search for free parking.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">APPROACHES TO FIND A SOLUTION</p>	<p>The capacity utilization of the truck parking spaces is continuously monitored by the employees of the regional traffic management centers with more than 130 Full HD cameras and thus always kept up to date. This means that the utilization rate of parking spaces is always up-to-date. A complex software regulates the display of the free parking spaces on the basis of the individual corridors (e.g. Brenner or Vienna) into which the Austrian motorways are subdivided. The display on the route is on overhead full graphical LED signs or variable full graphical LED text displays.</p> <p>If these are not available in a motorway section, the fixed signs provide the status of truck parking spaces to the truck drivers. In addition, the search for parking is supported by ASFINAG online webcams. These webcams can be viewed, for example, via the ASFINAG homepage, the traffic information service and the ASFINAG "Unterwegs" app, which makes it easy to find the available truck parking spaces.</p>



IMPLEMENTATION

The project was started at the end of 2017 and is being rolled out on 17 motorways and expressways throughout Austria. The real-time operation of the system will start in February 2019.

DIFFICULTIES TO BE OVERCOME

The biggest difficulties in implementing the project were the many different interfaces as well as the strategic and correct positioning of the LED panels. A big challenge is providing the right, useful and up-to-date information that the truck driver needs on his route.

EVALUATING THE RESULTS

Impacts: In the next few years a lot of new truck parking spaces will be built, so a further expansion of the truck parking information would therefore be very useful.

Costs: The total cost of the truck parking project is 12 million euros.

Benefits: The biggest advantage is a relaxed and quick search for a parking space, which increases road safety by well-restrained and concentrated truck drivers.

Success factors: A key success factor is the timely monitoring of the free parking spaces by the operator and the delivery of up-to-date and secure information for the truck drivers.

TRANSFERABILITY TO OTHER COUNTRIES

The transferability to other countries is possible. The current **Full HD camera technology** is now qualitatively so good to perform the parking space monitoring easily. Good quality **LED panels** are available on the market in large numbers. Only the **development of the software** requires a specialized company that can implement the complex requirements.



MORE INFORMATION

Contact:
Federal Ministry for Transport, Innovation and Technology:
Patrick.grassl@bmvit.gv.at

Publications:
<https://www.asfinag.at/en/>

3. Belgian KM charge for trucks of +3.5t



Keywords: kilometer charge, heavy goods vehicles, modal shift

DESCRIPTION IN SHORT



A kilometer charge has been installed for trucks of over 3.5t in the three regions of Belgium and for trucks of category N1/BC (semi-trailer vehicle not exceeding 3.5t). The system is in place since April 2016. Trucks have to be equipped with an OBU (On Board Unit). With the OBU switched on while driving on public roads, the kilometers driven are registered. The regions determined the parts of the network subject to the road pricing and the rate per km. The rate is based on distance, road type, gross vehicle weight and euro emission class.

In Flanders and in Walloon region the km charge is in place for highways and principal national roads. In Brussels-Capital Region trucks have to pay for the use of all roads.

BACKGROUND

The Belgian road network is very congested, with a heavily suburbanized spatial structure, about 7 million light vehicles, and 11 million inhabitants. There is a large truck transit (54% of truck vehicle km). Highways have many entrances and exits, which results in a mix of local traffic and long distance traffic. Foreign trucks drove on Belgian roads without paying for the infrastructure. One of the solutions to improve the situation was to install the km charge for trucks > 3,5t.

The **objective** of the km charge is threefold:

- A fair contribution of truck traffic to costs for investments and maintenance of roads;
- Improving mobility by encouraging carriers to work more efficiently (trucks less empty);
- Achieve better environmental performance of the transport system by taxing pollution.

ELEMENTS

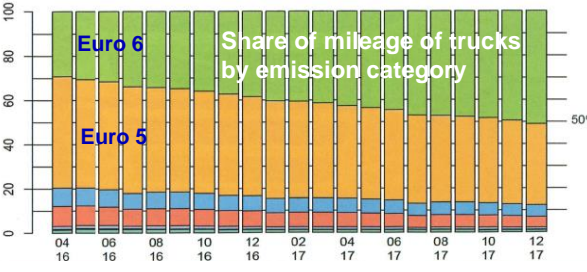

The scope of the charge is heavy vehicles > 3.5t on all public roads (Brussels-Capital Region), and on highways and principal national roads (Flanders and Walloon region)

The charge is based on the following **parameters**: distance driven, road type, gross vehicle weight and euro emission class.

[€ / km]	FLANDERS, BRUSSELS HIGHWAY			BRUSSELS URBAN AREA*			WALLONIA (EX VAT)		
	3.5-12 TONS	12-32 TONS	> 32 TONS	3.5-12 TONS	12-32 TONS	> 32 TONS	3.5-12 TONS	12-32 TONS	> 32 TONS
Euro 0	0,149	0,199	0,204	0,191	0,268	0,297	0,149	0,199	0,203
Euro 1	0,149	0,199	0,204	0,191	0,268	0,297	0,149	0,199	0,203
Euro 2	0,149	0,199	0,204	0,191	0,268	0,297	0,149	0,199	0,203
Euro 3	0,128	0,179	0,183	0,166	0,242	0,272	0,129	0,179	0,183
Euro 4	0,097	0,148	0,152	0,134	0,211	0,240	0,098	0,148	0,152
Euro 5	0,085	0,136	0,140	0,121	0,197	0,227	0,077	0,127	0,131
Euro 6	0,075	0,126	0,130	0,101	0,177	0,207	0,077	0,127	0,131

Every heavy goods vehicle on Belgian roads must have a working OBU. The technology GNSS (Global Navigation Satellite System) allows to record the distance and roads driven for each vehicle, in order to calculate the right charge. Drivers without a (functioning) OBU or who commit fraud, will be detected via detection equipment 24/7 (fixed, mobile and flexible checks).

The km is not a congestion charge. Tariffs are (until now) independent from time of day and driving directions.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">RELATED MEASURES</p>	<p>Accompanying measures have been put in place for Belgian trucks to mitigate the effect of the extra cost for the km charge (e.g. grants up to 80% for sustainable investments, safety measures).</p> <p>Flanders region developed a truck network for the whole region, with traffic signs indicating the recommended routes for trucks from the highways to the industrial zones and business areas. A small part of the concept was implemented; however, they abandoned the rollout early 2017, because the network focused too much on trucks and did not fit into the policy of multimodality.</p> <p>Since then plans are being reviewed with the perspective of connection with water and rail transport. The original plans for the truck network serve as the basis for broader research in which the coherence with the current road network and the kilometer charge is examined.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">IMPACTS & BENEFITS</p>	<p>The km charge contributed to a faster greening of the truck fleet. In less than two years after the start of the km charge, the share of the distance driven by euro 6 trucks has increased from 29% to more than 50%.</p> <p>The km charge system allows to develop a good overview of where and when trucks drive. Monitoring these data has a great potential for improving road safety and traffic flow.</p>	 <p style="text-align: center;">Share of mileage of trucks by emission category</p>
	<p>In the first year (April '16 – April '17), the km charge has contributed 660 million € (Flanders region 63%, Walloon region 35%, Brussels-Capital region 2%). On average, each day the revenues at national level are 2.3 to 2.4 million €. In the second year there was an increase to 686 million €.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SUCCESS FACTORS</p>	<p>Good cooperation between the regions was crucial. Viapass, the interregional entity established for the kilometer charge, certainly has contributed to this success. Belgium was not the first country to implement truck tolling, but it was the first such system that was rolled out in a single country right away. It was introduced in the three Belgian regions that have different mobility policies (as a result of state reforms). It started in the three official languages (French, Dutch, German) and in English. It is also the first satellite-controlled system of such size.</p> <p>Another success factor was the preparation phase. Without this, the system wouldn't have been operational from the first day.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">OUTLOOK & TRANSFERABILITY</p>	<p>Subject to limited adjustments and sufficient consultation with stakeholders, the km charge is a source of inspiration for other countries.</p> <p>Continuing evaluation might lead to further adjustments of the network. This already was the case, to correct some negative effect of trucks avoiding the km charge by driving on roads without km charge.</p> <p>With the km charge for trucks of +3,5t installed, there are considerations to make the system smarter and strive for a greater effect to improve mobility:</p> <ul style="list-style-type: none"> • the further development of the system, for example preferential tariffs at night or off-peak hours); • the conditions for introducing a similar system for passenger cars (study in Flanders region). <p>There are also thoughts about using the camera network and the data from the kilometer charge for other purposes, like the fight against the violation of rules relating to driving and rest periods, tachograph and cabotage.</p>	

MORE INFORMATION

Contact:

Viapass
Rue De Koninckstraat 40, b 19, 1080 Brussels
Tel: +32 2 709 79 40

Publications:

See download page at www.viapass.be

4. Ontario's Long Combination Vehicle (LCV) Program

Keywords: Long Combination Vehicle, LCV, GHG reduction, emissions reduction, safety improvement

DESCRIPTION
IN SHORT

The **LCV program** is a private sector initiative that has been led by the Ontario Trucking Association (OTA) and the Private Motor Truck Council of Canada (PMTC) since 2009. By Canadian standards, an LCV is any vehicle with a length of over 27.5 metres. In the context of Ontario, an LCV consists of a tractor pulling two full length semi-trailers; this will span over 40m in overall length. Ontario recently removed all permit and carrier caps within the Program, allowing an unlimited number of LCVs to traverse the Ontario Primary LCV Network.

BACKGROUND

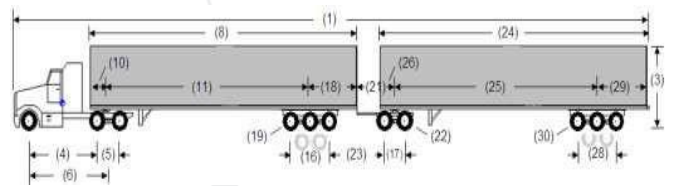
The Ontario Ministry of Transportation (MTO) is committed to creating a greener, stronger economy that is geared towards promoting the efficient flow of goods throughout the province and beyond. The Ontario Long Combination Vehicle (LCV) Program is catered towards **reducing costs** and environmental impacts, and **increasing safety**, as goods flow through trade corridors across the province and traverse its borders. Implementing LCVs has allowed shippers to move goods efficiently, while improving trade interactions and freight movements between Ontario, other provinces, and the U.S.



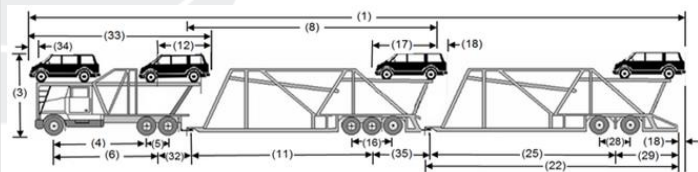
LCV – Long Combination Vehicle
(Photo credit: <https://www.mississauga.com/news-story/3154276-long-trucks-hit-the-road/>)

ELEMENTS

MTO issues permits to carriers that are deemed qualified to handle the operations of LCVs; drivers are fully trained and certified to operate LCVs and –must be experienced with a good safety record. Participating carriers enter into a Memorandum of Understanding (MOU) with MTO, conveying the carriers' understanding of all responsibilities that accompany the operation of LCVs. The OTA has been responsible for the **LCV Driver/Instructor Training Program** for Ontario operations, including overseeing the issuance of LCV Driver and Instructor Certificates required for LCV operations in Ontario. No other organization may provide those services without first obtaining Ministry approval.

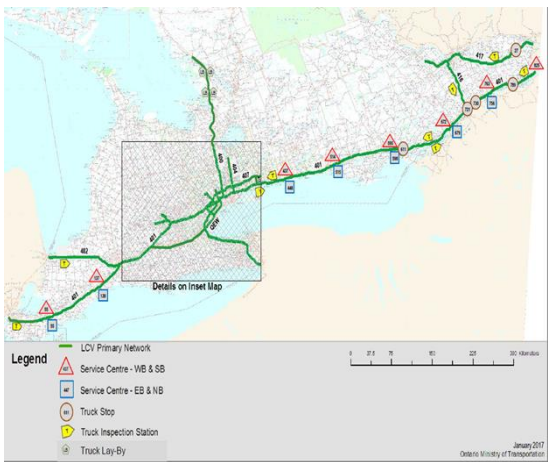


LCV A-Train Double



LCV Twin Stinger-Steer Auto Carrier

<p style="text-align: center;">RELATED MEASURES</p>	<ul style="list-style-type: none"> ✓ A designated LCV highway network has been developed to support the program. LCVs can only operate on this network. ✓ LCVs can only access destination terminals within two kilometres of highway interchanges, and only if routes have been carefully assessed and approved.
<p style="text-align: center;">IMPACTS & BENEFITS</p>	<ul style="list-style-type: none"> ✓ LCVs provide a cost-effective option to transport bulky, lightweight freight across designated routes. ✓ In 2014, LCVs saved 11 million tonnes of GHG from being released into the atmosphere. ✓ The flow of goods is facilitated by the use of LCVs as they replace the conventional two tractor semitrailers required for the identical freight task. ✓ A study of LCV operations in Alberta showed that LCVs of the type allowed in Ontario had 60% fewer collisions than the conventional tractor-trailers they replaced. LCVs also possess superior stopping ability than conventional tractor-trailers due to their required enhanced braking systems. ✓ Since LCVs are subjected to slightly less weight per axle due to their loading, they possess less of a risk of damaging road and bridge infrastructure.
<p style="text-align: center;">SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ Significant reduction in GHG emissions: one-third less compared to two traditional tractor semitrailers completing the same freight task. ✓ Proven safety measures indicating a reduced number of collisions related to LCVs when compared to conventional tractor-trailers. ✓ Provision of training for drivers and oversight of insurance made by the OTA. ✓ Strict parameters placed on carriers to ensure safety and longevity when operating LCVs. ✓ Designated highways which ensure that LCVs are not subject to nor the cause of traffic queues and safety concerns.
<p style="text-align: center;">OUTLOOK & TRANSFERABILITY</p>	<ul style="list-style-type: none"> ✓ The implementation of LCVs has allowed for the efficient transport of goods between neighbouring jurisdictions: Ontario, Quebec, Nova Scotia, and New Brunswick. ✓ Other provinces in Canada have adopted the LCV program, namely: British Columbia, Alberta, Saskatchewan and Manitoba. ✓ The use of LCVs leads to broader socio-economic impacts as they reduce the cost for transportation, reduce GHG emissions and improve road safety.



Primary LCV Network



LCVs will reduce GHG emissions and thereby positively impact the environment
 (Photo credit: <http://business.financialpost.com/executive/smart-shift/the-long-and-winding-load>)

MORE INFORMATION

Contact:
 Joe Lynch, Ontario Ministry of Transportation
joe.lynch@ontario.ca

Publications:
<http://www.mto.gov.on.ca/english/trucks/long-combination-vehicles.shtml>

5. Speed Management at Work Zones



Keywords: speed management, heavy goods vehicles, VMS

**DESCRIPTON
IN SHORT**

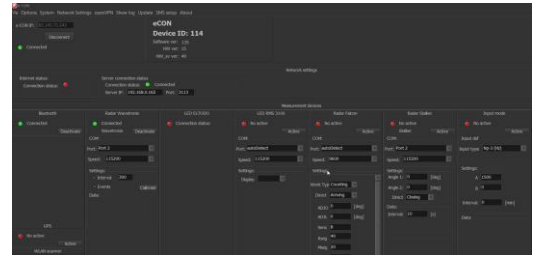
This complex system of **Speed Management at Work Zones** called **viaZONE** is a set of HW and SW instruments that allows influencing driver's behavior by portable or mobile VMS. Unique algorithms for displayed pictographs and VMS messages are called in real-time based on an evaluation of input data from various traffic detectors installed in several predefined profiles of an affected area. System installation and testing proved that drivers adjust their speed in a timely manner and therefore improve throughput of the bottlenecks, reduce GHG emissions and save time and money at highway reconstruction sites.

BACKGROUND

The Czech Republic is a very industrial country with focus on car manufacturing. At the same time mostly road transportation is utilised. Companies involved in automotive industry are frequently working in Just in Time system, therefore timely arrival of supplies is of a paramount importance for them.

Since there had been a need of massive reconstruction of a backbone highway infrastructure, it has been envisaged that such work would cause **significant traffic restrictions** and may lead to **inappropriate delays**. Reduction of road capacity creates so-called bottlenecks on a transport route that causes instability of a traffic flow. As a result, drivers can make mistakes and choose incorrect solutions for the emerged situation. Especially poor application of alternate merging rule, violation of speed limit, failure to observe safe distance, lowered tolerance and consideration of other road users as well as nervousness and ignorance of drivers plays significant role.

Therefore the R&D **project ViaZONE** has been launched to improve Speed Management at Work Zones in the Czech Republic.



ELEMENTS

The **system integrates various types of detectors** that are compatible with all its components. All the detectors can be freely combined according to requirements of an end user and according to specifics of a given installation site.

These detection technologies are currently integrated into the system:

- ✓ Wavetronix SSHD 125 detector – speed, flow rate, classification, occupancy with recognition, of up to 10 lanes. Car to Car or interval output potions.
- ✓ Traffic radar to identify queue length based on traffic flow speed.
- ✓ Bluetooth detector – journey-time detection at every profile. Integrated to control algorithms.
- ✓ IP camera – for visual overview.
- ✓ Weather station.
- ✓ Floating vehicle data (FCD) – the RODOS system – option of navigation to alternative routes.

<p style="text-align: center;">RELATED MEASURES</p>	<p>The R&D project project ViaZONE aimed to develop, manufacture, test and verify „Mobile active dynamic lane management system” in pilot operation. System implementation is especially at locations in front of and inside of road closures during reconstruction of highway infrastructure.</p> <p>System modularity, portability, minimal installation costs, calibration and maintenance requirements, energy efficiency and power grid independence of these components are its main features.</p>	<p style="text-align: center;">Visualisation of function</p>
<p style="text-align: center;">IMPACTS & BENEFITS</p>	<ul style="list-style-type: none"> ✓ Throughput of the bottlenecks improved (vol +25%) ✓ Occupancy of lanes increased (occ +15%) ✓ Reduction of congestions and delays (TT-20%) ✓ Accident mitigation. ✓ GHG emissions are reduced. ✓ Saving of costs. 	
<p style="text-align: center;">SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ 4G / LTE technology for remote communication with the server. ✓ Installation of the system components should take place during the installation of road works facilities. ✓ Fuel cells in protective box with two fuel canisters. ✓ Solar power supply significantly increases the maintenance-free period. ✓ Transition between the harmonization schemes shall not be implemented at intervals of less than three minutes. ✓ In the case of congestion, warning traffic sign queue ahead shall be activated immediately. 	
<p style="text-align: center;">OUTLOOK & TRANSFERABILITY</p>	<p>The system has been successfully tested by pilots and is now used in common practice on the Czech roads. In 2018, a call for tenders will be announced to the supplier of the system on the roads of Czech Republic.</p> <p>There is large potential of transferability of the viaZONE Speed Management at Work Zones to other countries. System has been successfully tested in the Czech Republic, Austria and is continuously developed to assure an up to date standards (V2x). Similar positive outcomes can be reached in most countries. Even though every country is unique in many aspects, driver’s behavior has sufficient similarities enabling implementation of the system with great potential enhancing transportation fluency.</p>	

MORE INFORMATION

Contact:

CDV - Transport Research Centre
 Lisenska 33a
 636 00 Brno
 Czech Republic
<https://www.cdv.cz/en/>

Main Researcher:

Marek Scerba
marek.scerba@cdv.cz

Publications:

<https://www.viazone.cz/en/>

Author: Libor Krejci, CDV, libor.krejci@cdv.cz

6. Finland's maritime strategy and role of ports & waterborne transport in multimodal transport



Keywords: ports, maritime transport, unitized traffic, multimodal & intermodal transport, maritime strategy

DESCRIPTIVE IN SHORT

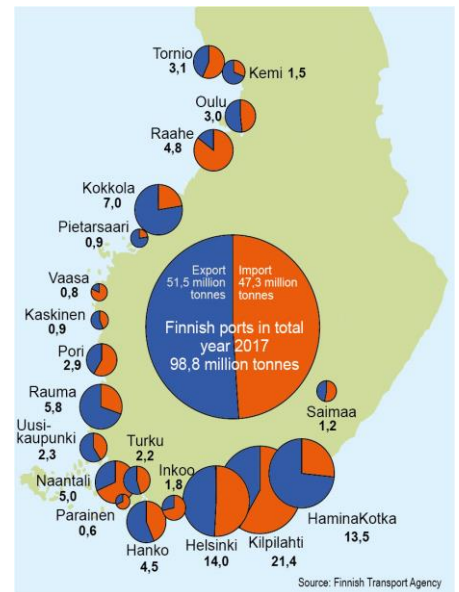
A maritime strategy for 2014-2022 was published in Finland in 2014. Maritime transport is of critical importance for Finland, as over 80% of the country's foreign trade is transported by ships. The port network is extensive, with over 50 ports handling international transports. Waterborne transport is a high capacity and cost-efficient transport mode and the infrastructure costs are less than for other modes. The share of unitized cargo (containers, trailers etc.) has continually increased. These cargo units to and from the ports are mainly transported by trucks on land.

BACKGROUND

A maritime transport vision for 2030, strategic priorities, critical success factors and measures for 2014-2022 included in **Finland's 2014 maritime strategy** were defined together with the maritime sector and operators in this field.

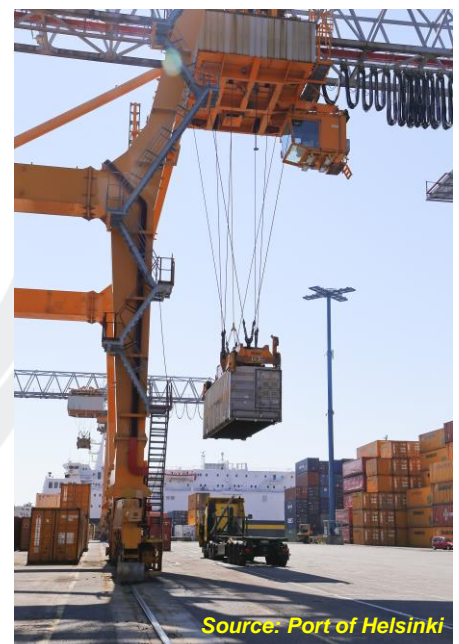
The Finnish ports have developed in or near cities situated along the coastline, often in connection to industrial activities, e.g. forest or metal industry factories. Finnish trade and industry is very dependent on maritime transport, as **83% of Finland's foreign trade is transported by sea.**

The share of unitized cargo is 30% of all sea transports. Its significance is further emphasized considering the value of goods. About 80% of all unitized cargo is shipped through the four biggest unitized cargo handling ports. These transports are mainly transported by trucks on land. **The smooth shift between road and sea in ports is crucial for efficient multimodal transport chains.**



ELEMENTS

- ✓ Change of organization of **ports into limited companies**
- ✓ **Advanced cargo handling technology**
- ✓ Automated and no time-consuming **port gate operations** for trucks
- ✓ **ITS solutions**, e.g. smart queuing systems for trucks arriving at the port to avoid parking and waiting time in the port area
- ✓ **Onshore power supply** for vessels in ports, which reduces emissions into the air
- ✓ Modern, **environmentally friendly vessels and fuels**
- ✓ Continually **increased size of vessels** -> use of economies of scale
- ✓ Well functioning **icebreaking operations** (close co-operation between Finland and Sweden)
- ✓ Nationwide **Vessel Traffic Management System** to ensure safe navigation
- ✓ **National Single Window** for ship reporting formalities
- ✓ New technology, e.g. **automated ships** are being developed



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">RELATED MEASURES</p>	<ul style="list-style-type: none"> ✓ 50% discount on state fairway dues collected from the users of maritime infrastructure 2015-2020 in order to lighten the cost burden of the business sector ✓ Public support for investments in vessels' environmental technology and terminals for liquefied natural gas (LNG) ✓ The cost coverage for the use of rail infrastructure is low, about 10%, which encourages multimodal transport ✓ Legislative proposal to increase HGV length from 25,25 to 34,50 meters. This will enhance the efficiency of transporting sea containers on roads ✓ HCT (High Capacity Transport) pilots allowed since 2013, e.g. for transport of sea containers 	 <p style="text-align: right; font-size: small;"><i>Source: Port of Helsinki</i></p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">IMPACTS & BENEFITS</p>	<ul style="list-style-type: none"> ✓ Waterborne transport is a high capacity and energy-efficient mode of transport. The use of vessels as much as possible in the transport chain (to/from the nearest port) reduces accidents, emissions and other external costs compared to road transport ✓ Less congestion on land transport networks ✓ Less need for expensive infrastructure investments in roads and railways ✓ HCT in container transport-> savings in labor and fuel costs, CO₂ reduction >30% 	 <p style="text-align: right; font-size: small;"><i>LNG vessel. Source: Gasum Ltd</i></p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ Waterborne transport is a cost-efficient mode enabling reasonable transport costs, which contributes to the competitiveness of Finnish companies ✓ Greening of vessels, e.g. LNG vessels and construction of LNG terminals (servicing also road transport) ✓ Icebreakers enable year-round maritime shipping since 1970's ✓ The change of ports into limited companies supports multimodality, as ports are increasingly interested in developing whole transport chains and producing value added for their customers, also outside the port area 	 <p style="text-align: right; font-size: small;"><i>HCT truck. Source: Finnish Transport Safety Agency</i></p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">OUTLOOK & TRANSFERABILITY</p>	<p>The main market for Finland's foreign trade is the EU, but Asia's importance is increasing. Due to Finland's geographical position, maritime transport will remain the dominant mode of transport for international transport. Transport capacity limitations and transport costs of competing modes prevent a large scale shift from sea to land based transport modes.</p> <p>In countries with similar geographical conditions Finland's experiences and practical solutions are transferable. Strict environmental legislation in the Baltic Sea has led to rapid greening of shipping. The new technology developed and taken into use can be transferred.</p>	 <p style="text-align: right; font-size: small;"><i>Remote controlled ship concept. Source: Rolls-Royce plc</i></p>

MORE INFORMATION

Author & Contact:

Taneli Antikainen, Finnish Transport Agency
taneli.antikainen@fta.fi

Publications:

Maritime Transport Strategy for Finland 2014-2022:
https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/77872/Julkaisuja_24-2014.pdf?sequence=1&isAllowed=y

7. Use of High Capacity Transport (HCT) on the Finnish road network



Keywords: HCT (High Capacity Transport), HGV, special permit, maximum truck dimensions and weight limits

DESCRIPTON IN SHORT

The maximum allowed weights and dimensions of heavy goods vehicles (HGV) were increased in Finland in 2013. In addition, High Capacity Transport (HCT) exceeding the maximum length and/or weight limits were introduced. These transports require vehicle and route specific special permits. The experiences gained in the HCT trials have been positive. An extension of the longest permitted length for vehicle combinations operating on the whole road network is also planned. Furthermore, separate drafting of legislative amendments to introduce vehicle combinations that are heavier than currently allowed is being considered.

BACKGROUND

The maximum allowed weights and dimensions of heavy goods vehicles were increased in Finland in 2013. The purpose of this reform was to improve Finland's competitiveness and reduce transport costs to a level closer to that of continental Europe. Due to long distances, transport costs in Finland are higher than in many other countries. Increasing the transport capacity of vehicles allows for a reduction in transport costs and emissions.

Also since 2013, the Finnish Transport Safety Agency has granted permits of exception for even bigger HCT combinations exceeding the maximum allowed length and/or weight limits (up to 34 meter long and over 100 ton vehicle combinations). These special permits are vehicle specific and apply only on certain well defined routes . Based on the experiences gained in the HCT trials, it can for example be concluded that transports of sea containers, general cargo and food products benefit significantly from the extension of the length of the vehicle combination.

The Ministry of Transport and Communications proposed in March 2018 an extension of the longest permitted length for combined vehicles for operation on the whole Finnish road network. The proposal was largely supported by different actors in the consultation process. The new rules are anticipated to enter into force in the end of 2018 or beginning of 2019.

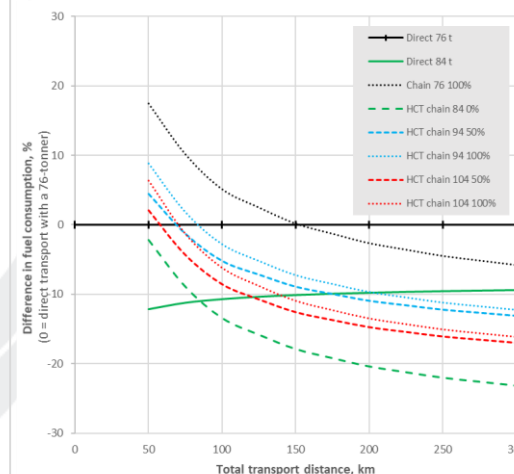
Separate drafting of legislative amendments to introduce combined vehicles that are heavier than currently allowed is also being considered.

ELEMENTS

- ✓ The maximum permitted height of HGV's was increased in 2013 from 4.2 meters to 4.4 meters and the maximum weight from 60 tons to 76 tons (9-axle vehicle combination)
- ✓ Also since 2013, special permits have been granted for High Capacity Transport (HCT) combinations exceeding the maximum allowed length and/or weight limits.
- ✓ Proposal in 03/2018 to extend the longest permitted length for combined vehicles from 25,25 meters to 34,5 meters on the whole road network. This will e.g. enable the transport of two 45ft containers
- ✓ Allowing combined vehicles that are heavier than currently allowed is also being considered.

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">RELATED MEASURES</p>	<ul style="list-style-type: none"> ✓ Heavier trucks can increase road wear, and a large number of bridges have weight restrictions and underpasses have height restrictions. Currently there are around 50 problematic bridges on the main HGV network. The upgrading of roads and bridges is on-going, but requires resources and is time-consuming ✓ The impacts of longer trucks on road infrastructure (intersections, roundabouts etc.) and traffic safety are analyzed and taken into account in designing technical requirements for HCT combinations.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">IMPACTS & BENEFITS</p>	<ul style="list-style-type: none"> ✓ Currently around 50 HCT combinations in operation; the number has continually increased ✓ Bigger size and mass of HGV transport decreases the number of vehicles on the roads ✓ Savings in labor costs, fuel costs and emission costs ✓ CO₂ reduction -5% to -35% for longer combinations, -2% to -20% for heavier combinations ✓ HCT in container transport -> reduction of CO₂ emissions >30% ✓ HCT is not over-represented in accident statistics
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ Clear possibilities to increase transport performance and make logistics chain more efficient -> big support from business community ✓ Good co-operation between shippers, hauliers, vehicle manufacturers, authorities etc. ✓ Realization of savings potential is dependent on the load factor, loading/unloading efficiency etc. ✓ Research has been made regarding impacts of HCT ✓ Strict technical requirements as a prerequisite for receiving special permit allowing the use of HCT
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">OUTLOOK & TRANSFERABILITY</p>	<p>Currently political will to go from HCT trials to Performance Based Standards Scheme, focusing on how well the vehicle behaves on the road, rather than how big and heavy it is, through a set of safety and infrastructure protection standards.</p> <p>Finland is a large and sparsely populated country with small traffic congestion problems. The dimensions of the Finnish road infrastructure are mostly sufficient for the safe and efficient operation of HCT combinations. In more crowded countries, where space is limited to increase the dimensions of the road infrastructure, the use of Finnish-sized HTC vehicles, and thus the transferability of these, may be challenging.</p>

Examples of HCT in Finland (sources: Finnish Transport Safety Agency, Metsäteho Oy):



Source: Metsäteho Oy

MORE INFORMATION

Author & Contact:

Taneli Antikainen, Finnish Transport Agency
taneli.antikainen@fta.fi

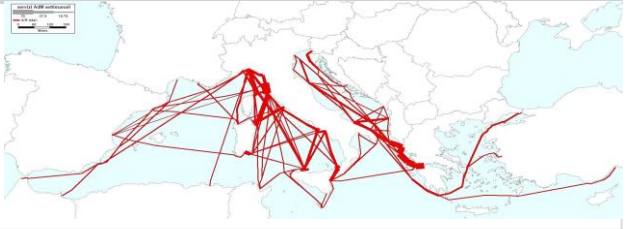
Publications:

Finnish Transport Safety Agency, e.g.:
https://www.trafi.fi/filebank/a/1473422710/7c6f1828ea16e7c6dd32fd4127c82981/22393-HCT_report_wintertime_2015-2016.pdf

8. Marebonus incentive



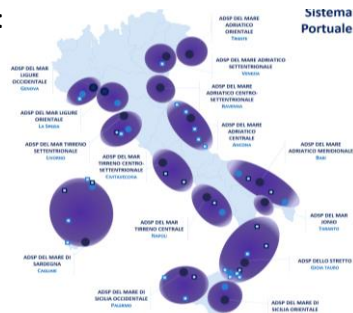
Keywords: maritime transport, incentives, intermodal chain, maritime strategy, combined freight transport

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">DESCRIPTION IN SHORT</p>	<p>The Italian government, through the implementing body Rete Autostrade Mediterranee per la logistica, le infrastrutture e i trasporti Spa (RAM), is boosting the use of Motorways of the sea with the 'Marebonus' incentive (approved by EU with decision C(2016) 8459 19/12/2016).</p> <p>The objective is to support the launching of new maritime services for combined freight transport or the upgrade of existing services for combined freight transport, sustaining the whole intermodal chain and thus generating environmental and social benefits from reduced truck journeys on the road network.</p> <p>Marebonus, with a budget of over 118M €, provides grants to ship-owners (up to 30% of operational costs) with the intention to offset some of the additional costs of switching to a more environmentally friendly mode of transport with the commitment to transfer at least 70% of the aid received as discount or reimbursement to end users/haulers.</p> <div data-bbox="277 845 686 913" data-label="Caption"> <p>Ro-Ro and Ro-Pax services from/towards Italian ports (2017)</p> </div> 
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">BACKGROUND</p>	<ul style="list-style-type: none"> • Ecobonus incentive (2007-2010): launched by Italian Government, it was an incentive for haulers, allocating the subsidy directly to the users of the maritime transport service, in order to promote a gradual shift of heavy goods vehicles from road to sea, by compensating the external costs incurred from road transport in relation to the identified maritime connections on a certain number of eligible routes. Grants were provided as a reimbursement (up to 30%) of incurred costs by haulers. • Italian Strategic Plan for Ports and Logistics (2015) has placed the national port system at the center of the strategy to revitalize the logistics sector in Italy. Marebonus is one of the program included. • EU legislation: Decision C(2016) 8459 19 December 2016. The EU Commission approved the 'Marebonus' program as an instrument to support the demand of Motorways of the Sea (MOS), involving also shipowners serving MOS lines.
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">ELEMENTS</p>	<p>Beneficiaries: ship-owning companies (also consortia or slots agreement), based in EU or in the European Economic Area, which submit 3-year projects for the improvement of new shipping services Ro-Ro and Ro-Pax for multimodal transport of goods or of the services on existing routes, arriving and departing from ports in Italy, connecting ports situated in Italy, in other EU Member States or in the European Economic Area.</p> <p>Mechanism: the incentive may vary until an established maximum of € 0,10 per embarked units multiplied by each kilometer of road avoided. Eligible routes and distances in kilometers of road avoided are contained in a decree issued by the Italian Ministry of Infrastructures and Transport.</p> <p>Indirect contribution sharing system: in order to reinforce the intermodal chain and the financial sustainability of the projects to be implemented, the beneficiary must allocate annually, for customers who have made at least 150 shipments of transport units per year, a quota of at least 70% of the grant received. That percentage is raised to at least 80% for firms that have embarked at least 4000 shipments of transport units per year.</p>

RELATED MEASURES

The Italian Ministry of Infrastructures and Transport has been implementing a series of measures in order to implement the national transport and logistics system, such as:

- a new ports' governance:
 - ✓ 15 Port System Authorities (PSA) 58 ports vs. 24 Port Authorities
 - ✓ PSA national coordination Conference
 - ✓ Partnership for Logistics and Transport
- Simplification, new regulation and procedures
- Incentive to promote rail transport (Ferrobonus)
- Important investments in all transport modality (ports, rail, roads and motorways, metropolitan cities, airports)



IMPACTS & BENEFITS

An annual **saving of externalities** estimate over € 260 million, subtracting each year from road an equivalent in cargo units of more than 800,000 trucks (nearly 650 million vehicles/km transported), with a total length of more than 16 million linear meters used for freight in the new or improved maritime services.

The first analysis on approved projects demonstrate that the **unit value of the contribution** for each embarked unit should be between € 0.03 and € 0.05 (year 2017/18).

1.1 Bill. in terms of potentially subtracted Km from road	<ul style="list-style-type: none"> •9% from new maritime services •5% in terms of increase that can be generated by the improvement of existing services
1.6 Mil. in terms of loaded units	<ul style="list-style-type: none"> •11% from new maritime services •5% in terms of increase that can be generated by the improvement of existing services
52 projects	<ul style="list-style-type: none"> •11 new maritime services •41 improvement of existing services

* Vehicles from 17,1 tons; ** 100% electric traction
Source: PWC SpA, 2015

Externalities	Road Transport €/1000tkm*	Rail Transport €/1000tkm**	Maritime Transport €/1000tkm
Air Pollution	4,91	1,111	1,81
Greenhouse Gases	5,32	-	1,5
Accidents	1,23	0,001	-
Congestion	14,85	0,250	-
Noise	0,09	0,131	-
Total	26,40	1,492	3,31

Other benefits are represented by: the launch of a new season of start-up of the Motorways of the Sea; the re-balancing of the freight transportation system by developing multimodal shipping/road transportation both from an economic and social perspective.

SUCCESS FACTORS

- The main sector players involved in the program, ship owners and haulers, demonstrated their high participation already during the project submission step. This means the achievement of a growing integration in the whole logistics supply chain;
- activation of intermodal services and improvement of the existing maritime services;
- improvement of successful previous initiatives (Ecobonus in particular);
- the strengthening of overall results with other ongoing programs (investments on High Duty Vehicles and on intermodal trailers and semi-trailers, Ferrobonus, etc.).

OUTLOOK & TRANSFERABILITY

- Growing importance of the maritime transport modality, in particular of Motorways of the sea, in Italy:
 - Ro-Ro: market share: more than 20% of the Ro-Ro tons in EU 28
 - Italy second in Europe for tons moved in 2016
 - Growth (2014-2017): Italy: **+23,5%** (vs a GDP growth of 3,5%) Europe: + 7,3%
 - Ro-Pax: Italy first position in Europe for non-cruise passengers in 2016
 - 4,8 million passengers on international routes in 2016, of which about 1.3 million related to non-EU connections
- The scheme and system of the Marebonus can be applied in other countries. This has been also proved by the approval of the incentive system by EU.
- Based on the Ecobonus experience a European incentive scheme is going to be defined, through the Med Atlantic Ecobonus project, co-financed by EU funds (CEF). The initial scope of the project was the Atlantic and Mediterranean markets but the study is structured considering the potential transferability of the scheme to other EU regions and modes and it is being analyzed considering its different elements (technical, legal, financial, technological, etc.) and the consensus reached.

MORE INFORMATION

Author & Contact:

Francesco Benevolo, RAM Logistica, Infrastrutture e Trasporti Spa
fbenevolo@ramspa.it

Publications:

www.ramspa.it

9. Ferrobonus incentive



Keywords: freight rail transport, incentives, intermodal chain, railway, combined freight transport

DESCRIPTION IN SHORT

Following the first Ferrobonus Incentive (2011) the Italian government, through the implementing body Rete Autostrade Mediterranee per la logistica, le infrastrutture e i trasporti Spa (RAM), decided to sustain the use of railways with the 'New Ferrobonus' instrument (approved by EC with decision C(2016) 7676 November 2016).

The objective of Ferrobonus is a reduction of the heavy vehicles on the road, in order to: achieve an important savings in external costs and pollution; rebalance the freight transportation system by developing multimodal rail/road transportation (reducing social costs of mobility, environmental pollution and increasing efficiency and safety of roadway chain); encourage the road haulage in using the railway network.

Ferrobonus, with its budget of 60M €, provides grants to Multimodal Transport Operators (MTO) and enterprises that provide intermodal freight transport services and/or transshipment with block trains.

BACKGROUND

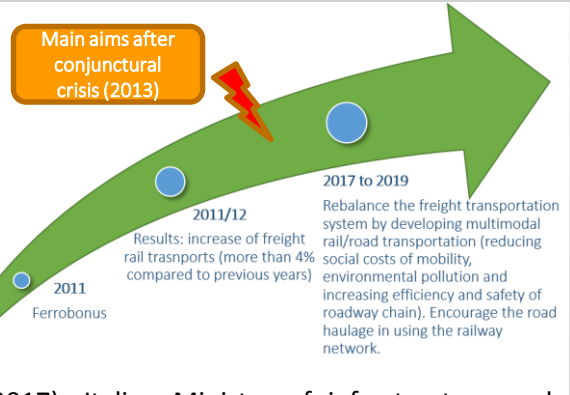
Ferrobonus incentive (2010-2011): launched by the Italian Government, it was an incentive to support combined and transshipped rail transport. It was enforced by article 3 of the Italian Ministry of Infrastructures and transport Decree No. 592 04/08/2010 (and modified by the Decree No. 750 14/10/2010).

• **Italian legislation:**

- ✓ art. 1, c. 648 and 649, Legge di Stabilità 2016;
- ✓ Decree 14 July 2017, n.125 (GU n.190 16/08/2017): Italian Ministry of infrastructure and transports has introduced the new Ferrobonus regulation.

• **EU legislation:**

- ✓ Decision C(2016) 7676 24 November 2016 - SA.44627 (2016/N), the EU Commission approved the 'Ferrobonus' as an instrument to support the rail transport;
- ✓ European Community guidelines on State aid for railway undertakings (2008/C 184/07).



ELEMENTS

Beneficiaries: MTO and enterprises that:

- ✓ are settled within the European Economic Area (EEA);
- ✓ use intermodal transport services and/or transshipment with electric drive block trains;
- ✓ will maintain, for the first 12 months from the entry into force of the Decree, a traffic volume (in terms of train*kilometre ran on national network) equivalent to that effected in the course of a reference period (the mean volume of traffic in the three-year period, 2012-2014);
- ✓ commit themselves to increase this traffic volume for following periods of 12 months.

Incentive Mechanism: the maximum amount of the subsidy cannot exceed 2.50 euro per train*km. Minimum eligible trip length is up to 150 km (trip in foreign territories are eligible but not reimbursable) except for connections between ports and interports.

Indirect contribution sharing system: the MTO, during the period of financing, is obliged to allocate, in favour of their own clients who commissioned the railway transport services, a fee discount of at least 50% of the total subsidies received.

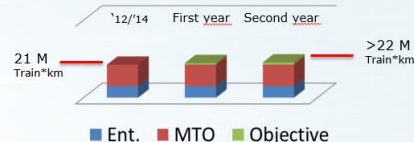
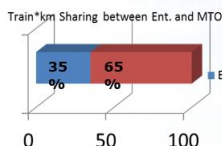
RELATED MEASURES

- The Italian Ministry of Infrastructures and Transport has been implementing a series of measures in order to improve the national transport and logistics system, such as:
- move from the High Speed Rail to the AVR Network.
 - Infrastructures: rail freight corridors from the Alps to the Sea.
 - Operational and documentary simplifications for intermodal transport:
 - ✓ extension to trailers and semi-trailers used in intermodal transport operations of exemption for transport carried out under exceptional conditions;
 - ✓ possibility of authenticated copies of circulation paper for trailers and semi-trailers.
 - Other incentives: regional initiatives integrating the national Ferrobonus; train paths subsidy; train Drivers training; adjustment of anti-noise norm wagons; subsidy on concession for port terminal operators.
 - Investments in all transport modality (ports, rail, roads and motorways, metropolitan cities, airports).

IMPACTS & BENEFITS

From the data obtained by proposals it was possible to create the following scenarios:

- the contribution per train*Km can be around € 0,80 for the first year and raising until around € 1,50 in the second year. Thus this level of contribution will be summed up with other contribution deriving from regional resources.
- From 2012 to 2014, the total amount of train*km has been around 21 million, 65% is by MTO.
- The perspective is to reach a more than 22 millions of train*km within two years (around 5% of growth).



* Vehicles from 17,1 tons; ** 100% electric traction
Source: PWC SpA, 2015

Externalities	Road Transport €/1000tkm*	Rail Transport €/1000tkm**	Maritime Transport €/1000tkm
Air Pollution	4,91	1,111	1,81
Greenhouse Gases	5,32	-	1,5
Accidents	1,23	0,001	-
Congestion	14,85	0,250	-
Noise	0,09	0,131	-
Total	26,40	1,492	3,31

SUCCESS FACTORS

- Beneficiaries have to maintain:
- for 12 months (2017/2018), a volume of intermodal and/or transshipment railway traffic (trains*km ran on the Italian national network), not lower than the average traffic volume of the 3-years reference period (2012-2014);
 - increase this railway traffic volume during the following 12-month period (2018/19);
 - maintain, for a further 24 months, the last railway traffic volume reached during the incentive period.

OUTLOOK & TRANSFERABILITY

- Regional initiatives: Liguria, Piedmont and Lombardy have decided to adopt regional incentive measures based on Ferrobonus. With their own resources they will provide a "surplus" of incentive for those trains departing and/or arriving in their respective regional territories.
- Trend 2014-2016 :

2014: 43.7 millions of trains/year	Railway (train/km): +8,9%
2015: 45.5 (+ 4%)	Highways (veic/km): +8,6%
2016: 47.6 (+ 4.6%)	GDP growth : +2,0%
- More Rail companies and growth of traffics from/for South Italy + 12.66%
- Market share of private companies: from 37.7% to 43.1%

MORE INFORMATION

Author & Contact:

Francesco Benevolo, RAM Logistica, Infrastrutture e Trasporti Spa
fbenevolo@ramspa.it

Publications:

www.ramspa.it

10. Pilot Project for ETC2.0-based Fleet Assistance Service



Keywords: electronic toll, transport management, probe data, GPS logs, oversize/overweight load permits

DESCRIPTION IN SHORT	<p>ETC2.0 collects probe data by the Vehicle-Infrastructure integration system which enables a high-speed and high-capacity two-way communication with the road embedded antenna called "ITS spot".</p> <p>The pilot project demonstrates improved efficiency of fleet management for haulers and safety of driving by providing probe data via ETC2.0.</p>
BACKGROUND	<p>In October 2014, a new service called "ETC2.0" Started. ETC2.0 provides advanced information on expressways and major national highways through the communication between ITS spots and onboard units (OBU) , in addition to the electronic toll collection function.</p> <p>The benefits of ETC2.0 have been examined through pilot projects since 2015.</p>

On Board Unit of ETC 2.0

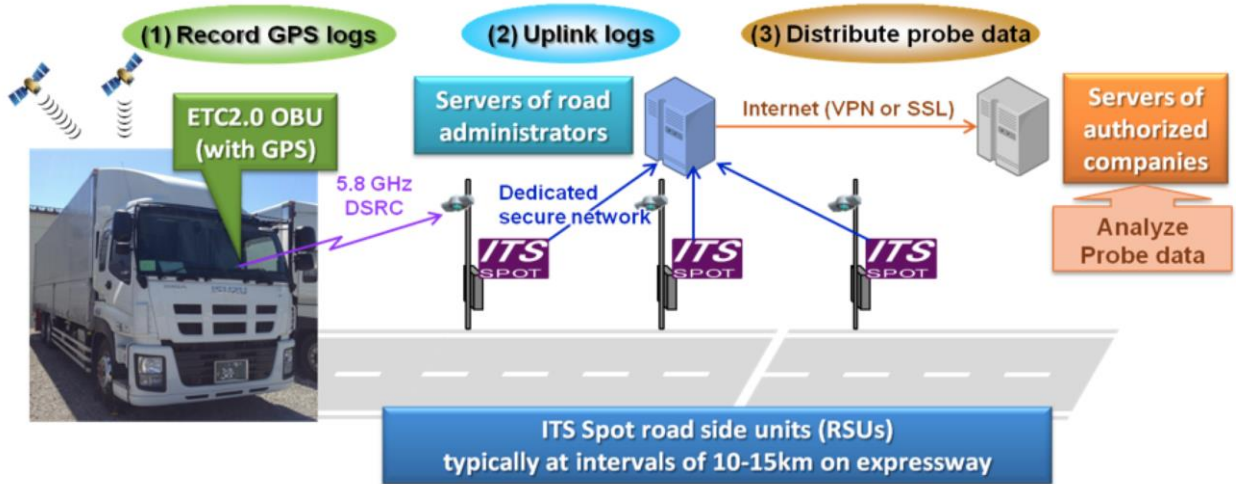


ITS Spot (roadside antenna)



Data collection: The process of the ETC 2.0 probe data collection consists of : (1) Record GPS logs on the ETC2.0 OBU installed on each vehicle; (2) Uplink logs from the ETC2.0 OBU to the ITS spot road side unit and then to the servers of road administrators; (3) distribute probe data to the servers of authorized companies and analyze the data. The probe data includes: travel record (time, position and speed) and behavior record (time, deceleration and speed).

ELEMENTS



Probe data:

- **Travel record** : time, position (longitude, latitude), speed
→ stored every 200m, or every 45° change in the driving direction
- **Behavior record** : time, acceleration, speed
→ stored when the deceleration exceeds the threshold value

ELEMENTS	<p>Data Utilization: A logistics company has carried out the field experiment of ETC 2.0 probe data collection. The company first set up an ETC2.0 OBU on each vehicle and probe data are collected from it. The collected probe data were then sent to the application service provider for analysis. The analysis revealed that half the drivers wait over 1 hour to start the unloading. Then, the company could predict the arrival time using travel record data and reduce drivers' waiting time. In addition, the company could know potential accident spots using behavior record data and improve drivers' safety. The examples of application can be: predicting arrival time; delivery planning; identifying sudden breaking spot; creating daily travel report.</p>	
RELATED MEASURES	<p>[“ETC2.0 benefit for oversize/overweight load permits”]</p> <ul style="list-style-type: none"> • In January 2016, Japan introduced a new simpler application procedure for ETC2.0-ready oversize/overweight vehicles. • This new procedure allows an applicant with ETC2.0-ready vehicle to use multi routes among the roads designated as “recommended roads for heavy trucks” and apply for use of the multi routes in a single application, whereas other applicants need to individually apply for each route. • This new procedure also allows applicants to select effective routes to avoid traffic congestion and accident, possibly resulting in improved logistics efficiencies. • With the probe data, the authority can identify violators more easily. 	
IMPACTS & BENEFITS	<p>Key findings of the pilot project include:</p> <ul style="list-style-type: none"> • Improved reliability of scheduled arrival time means shortened waiting time for loading/unloading operation • Driving records from probe data, including sudden breaking, provides authority with the basis for guiding drivers for safer driving 	
SUCCESS FACTORS	<p>The two-way communication-based ITS spots had been installed along expressways at intervals of 200m in 1,600 locations across the country, which automatically provide locations, status, speeds and routes of vehicles. This enables services that can improve efficiencies of fleet management and safety of drivers.</p>	
OUTLOOK & TRANSFERABILITY	<p>The two-way communication system between vehicles and roads requires beacons installed along roads, which can be costly. The system is transferable if this challenge is overcome.</p>	

MORE INFORMATION

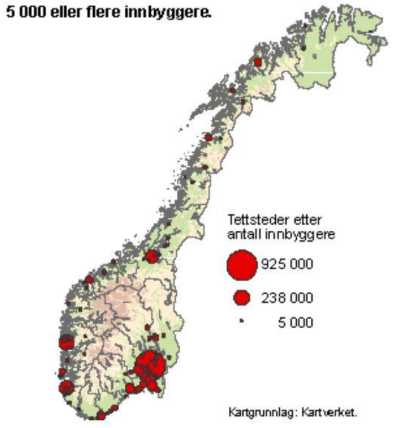
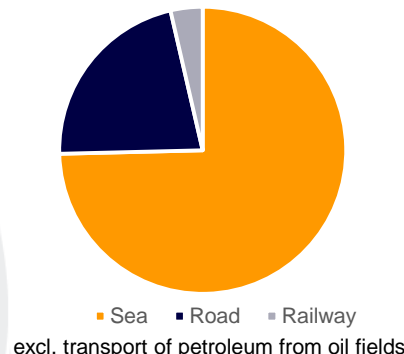
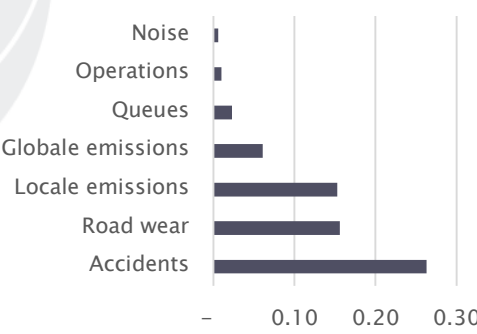
Contact:
 Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
 :road_bureau_info@mlit.go.jp

Publications:
Japanese only
<https://www.go-etc.jp/etc2/etc2/index.html>

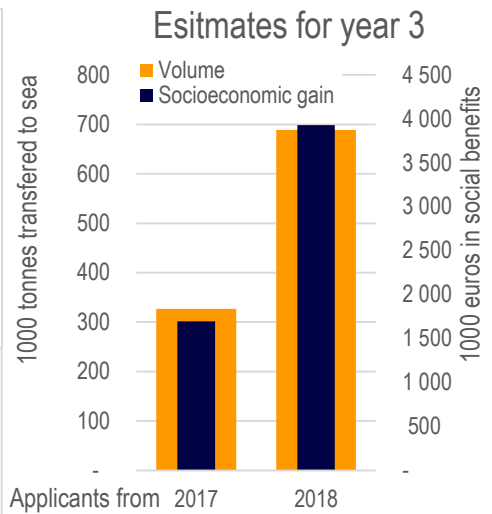
11. Transfer of goods from road to sea



Keywords: heavy goods vehicles, modal shift, incentive scheme, aid scheme, reduction of external costs

<p>STATUS AND TARGET</p>	<p>In Norway a large part of the population and production is located close to the sea, and about 75 percent of the transport work on Norwegian territory is covered by ships (over 80 percent when transport of petroleum products from the Norwegian oil and gas fields is included). Road transport covers above 20 percent of the total and more than 40 percent of the inland transport work. The Norwegian government shares the EU's ambition to reduce long-haul road transport by 30 percent by 2030. As part of our national multimodal freight policy, in 2017 Norway introduced an AID SCHEME FOR SHORT SEA SHIPPING to transfer of goods from road to sea. This system is operated by the Norwegian Coastal Administration and is available to all transport companies.</p>	
<p>BACKGROUND</p>	<p>The greatest disadvantages, i.e. external costs of freight transport by road in Norway are road traffic accidents, harmful emissions and infrastructure wear. Other less dominant external costs are queuing, noise and operations. Transport by sea on the other hand has considerably fewer disadvantages. When road transport is shifted to sea, external costs are reduced, thereby creating socioeconomic gains – which in terms define the level of aid awarded to each project.</p> <p>Calculations by the National Freight Transport Model indicate an interesting, but smaller effect of this type of incentive scheme. However, applications from 2017 and 2018 indicate a significantly larger impact on the modal share.</p>	<p>5 000 eller flere innbyggere.</p>  <p>Tettsteder etter antall innbyggere</p> <ul style="list-style-type: none"> 925 000 238 000 5 000 <p>Kartgrunnlag: Kartverket.</p> <p>Freight transport – modal split</p>  <p>Sea ■ Road ■ Railway excl. transport of petroleum from oil fields</p>
<p>ELEMENTS</p>	<p>In terms of utility the aid awarded is set equal to the expected socioeconomic utility value. The Coastal Administration has made a map-based program for easy calculation of socioeconomic benefits.</p> <p>Funding is only granted to new freight routes aimed at shifting goods from road to sea. A proposal must document the socioeconomic benefits, verify that the proposed freight route depends on financial support, as well as convince the Coastal Administration that the route will become economically viable after the grant period. The proposed freight routes have to be in operation within a year after accepting the terms of the grant. The grant period is maximum three years. As such, the cost-benefit of the first three years can be zero when the government's administrative and financial costs are excluded. Long-term effects will contribute to lowering the external costs of transport.</p> <p>Half of the applicants approved in 2017 managed to meet the scheme's demands. They represent 28 percent of the initial volume of 2017.</p>	<p>External costs for large trucks</p>  <p>– 0.10 0.20 0.30 euros per liter fuel</p>

<p>RELATED MEASURES</p>	<p>The Norwegian National Transport Plan contains accompanying measures to support freight transport by all modes, including measures to promote combined transport especially. Freight transport by rail has been granted a package of measures at a value of 18 billion NOK (2 billion €) including new/upgraded terminals, enhanced stability and opening for longer trains. Based on the success of this scheme, the Department of Transport is investigating an incentive scheme for freight transport by rail.</p>
<p>IMPACTS & BENEFITS</p>	<p>Shift from road to sea leads to:</p> <ul style="list-style-type: none"> ✓ Reduction of road transport accidents ✓ Reduction of harmful emissions ✓ Reduction of road wear and need for maintenance ✓ Reduction of noise and queuing ✓ Increased economic activity for the shipping industry ✓ Better sea transport for other users
<p>SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ Highly demanded by shipping companies ✓ EU approved ✓ Approving applicants with high cost-efficiency and vessels with low emissions and high degree of filling ✓ Approving applicants with low negative impact on other routes on sea and railway ✓ Well prepared implementation process ✓ Simple and reliable application system with low administration costs ✓ Accepted by trucking and railway companies ✓ Public acceptance
<p>OUTLOOK & TRANSFERABILITY</p>	<p>The impacts of and experiences with the introduction of our incentive scheme exceeds expectations. However, some applicants have experienced difficulties starting the approved routes and/or securing sufficient volumes. So far, the one-year deadline seems to be the hardest criterion to meet.</p> <p>The scheme does not favor or discriminate based on the sea carrier's environmental footprint. The effect of the initiative on climate goals has thus not been fully utilized.</p> <p>The financial support offered through this scheme is limited to the level of socioeconomic gain in Norway. Further developments may include cooperation with Sweden to increase the amount of financial support. In the medium and long term, also other European countries could join the scheme.</p> <p>The scheme is transferable to other countries. It can be adjusted to other national needs (financing, demand management, reduction of environmental impacts etc.) and framework conditions (policy goals, etc.).</p>



So far 28% of applicants from 2017 have met the initial demands. Applicants from 2018 have not yet started (per September 2018).

1 000 tonnes transferred in year 3

Applicants from 2017:

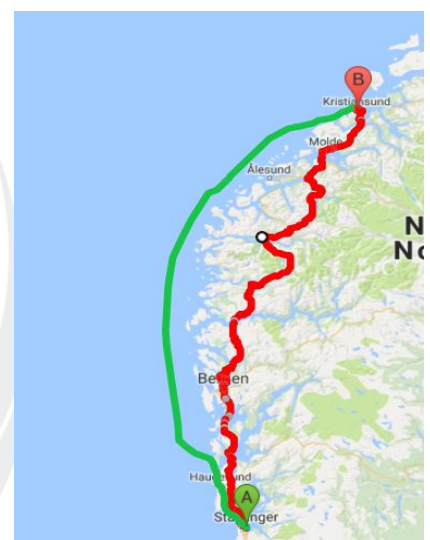
Stavanger-...-Hammerfest	40
Stavanger-Bergen-Florø	310
Moss/Drammen-Oslo	90

Applicants from 2018:

West coast-Hirtshals	90
Oslo-Kristiansand	90
Oslo-Kiel	500

Total 1 120

The lasting CO₂- reduction is estimated to 30 000 tonnes yearly



Example of a new route

MORE INFORMATION

Contact:

Kystverket (the Norwegian Coastal Administration):
Erika Marlen Støylen,
erika.marlen.stoylen@kystverket.no

Author: Else-Marie Marskar, Norwegian Public Roads Administration, else.marie.marskar@vegvesen.no
22.06.2018, Version 1.0

Publications:

About the incentive scheme (only in Norwegian):
<http://www.kystverket.no/Maritim-infrastruktur/sjotransport/insentivordning-for-overforing-av-gods-fra-veg-til-sjo/tilskot-til-godsoverforing-fra-veg-til-sjo/> (2018)

12. Swiss Heavy Vehicles Charge



Keywords: kilometer charge, heavy goods vehicles, internalization of external costs, modal shift

DESCRIPTON
IN SHORT

As part of the national multimodal freight policy Switzerland introduced 2001 a **HEAVY VEHICLES CHARGE (HVC)** for trucks > 3.5t which has to be paid by all transport companies on all public roads. The tariff is based on max. gross weight, kilometers driven and emissions category. The introduced electronic charge collection system makes it possible to record the data needed for charging without interrupting the flow of traffic. The revenues are mainly used for new rail infrastructure and improving the road and rail infrastructure. The system is operated by the Swiss Customs Authority. The heavy vehicles charge replaced the previous flat rate tax for trucks.





BACKGROUND

In Switzerland the maximum weight limit for trucks had been 28 tons for many decades, whereas in the European Union it is 40 tons. Therefore there was growing pressure to increase the max weight of trucks in Switzerland. Switzerland increased the max weight to 34 tons in 2001 and 40 tons in 2005. To **limit the negative impact on rail freight**, Switzerland implemented the Heavy Vehicles Charge to compensate for the productivity gains and to avoid a modal shift from rail to road. Moreover the HVC should give an incentive for creating a larger shift from road to rail freight transport. Consensus has been formed within Swiss transport policy that transport should pay for all the impacts it produces. By **internalizing all costs** a disproportionate growth in road transport can be stopped. Switzerland has included the costs of externalities, such as environment and health impacts, to calculate an appropriate HVC.

On Board Unit (OBU)



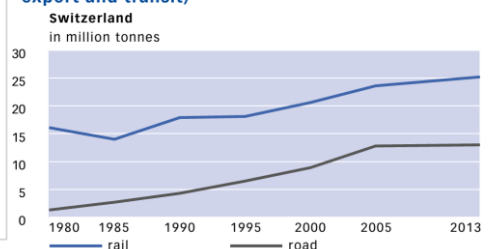
Examples of the calculation of the fee

tariff level in centimes ¹			kilometres travelled in Switzerland	truck and trailer ²	Fee in CHF
1	2	3			
3,10			300	without trailer 	x 18t 167,40
2,69			300	truck and trailer 	x 30t 242,10
2,69			300	articulated lorry ³ 	x 30t 242,10
	2,28		300	truck and trailer 40t 	x 40t Euro IV/V: 273,60 Euro VI: 246,00

- 1) = tariff per tonne and kilometre (tkm)
Level 1 = category 1 (corresponds to EURO 0, 1 and 2)
Level 2 = category 2 (corresponds to EURO 3)
Level 3 = category 3 (corresponds to EURO 4-6)
- 2) maximum permitted weight according to the vehicle registration documents. In case of trailers and other combined vehicles the total of the weights are added.
- 3) separately matriculated articles: net weight articulated lorry and relevant weight of the trailer respectively.

Some vehicles (e.g. coaches) are charged at the bases of flat rates.

Total transalpine goods transport (domestic, import, export and transit)



ELEMENTS

Scope of the Charge:

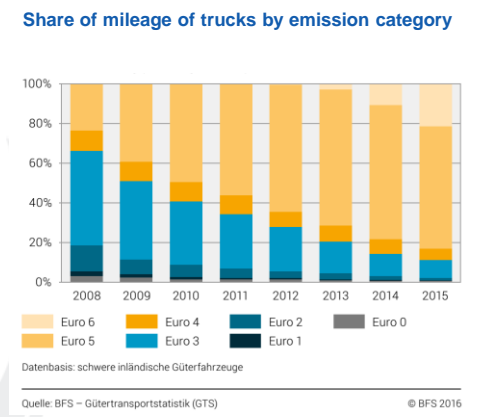
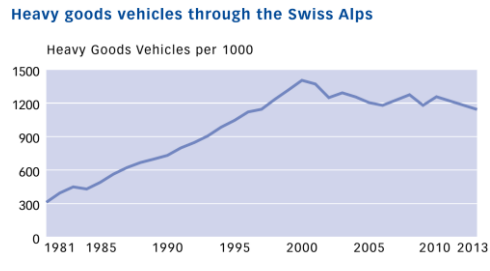
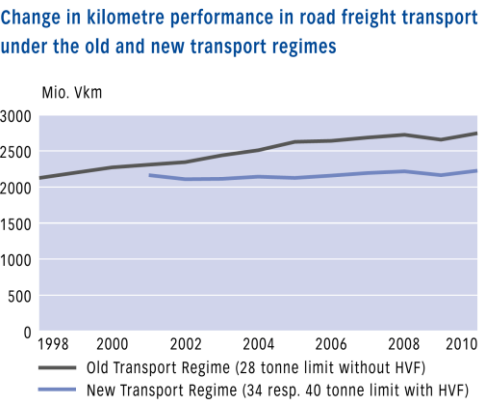
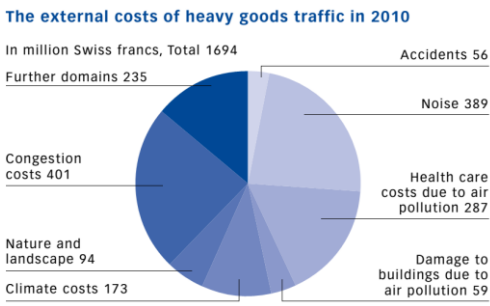
Heavy vehicles > 3.5t on all public roads **Tariff: Charge = tariff x distance x max. gross weight** (see calculation example on the right). The tariff considers the emission standard of a truck. The evolution of the composition of the vehicle fleet is considered.

Electronic charge collection system:

Vehicles with On Board Unit (OBU): The **OBU** of the truck is able to record the vehicle kilometers through an **electronic connection to the tachograph**. It allows also an automatic activation and deactivation at the national border through radio connections. It can monitor also the vehicle performance and switching at the border using GPS and a movement sensor. There is also a **sensor for trailer detection**.

Vehicles without OBU: An **identification card** is used to record the data at clearance terminals at the border. There are **special regulations** for trucks in intermodal transport, timber transport, bulk milk transport and in livestock transport.

<p>RELATED MEASURES</p>	<p>The Freight Traffic Transfer Act contains accompanying measures to support rail transport, including funding to promote especially combined transport. In addition to rail liberalization, transalpine rail routes with transalpine tunnels are also very important. One example is the flagship Gotthard Tunnel project, which is 57 km long.</p>
<p>IMPACTS & BENEFITS</p>	<ul style="list-style-type: none"> ✓ Increased average truck loads from 6 to 12t and reduction of truck trips ✓ Reduction of truck mileage (20%) and empty trips ✓ No significant shift to vans or minor roads ✓ Reduction in transalpine road freight traffic ✓ Renewal of the fleet to environmental friendly vehicles ✓ Only very limited increase in inflation ✓ Very limited detour traffic via Austria and France <p>Please be aware that the impacts are caused by the charge and the increased weight limit.</p>
<p>SUCCESS FACTORS</p>	<ul style="list-style-type: none"> ✓ Good preparation of the implementation of the scheme ✓ "Simple" and reliable system ✓ Charge has to be paid on all public roads (not only on motorway, so there is less detour traffic on minor roads) ✓ Sound calculation of the charge based on internalisation of external costs (which can stand a legal check) ✓ Charge based on maximum permitted weight and not load (incentive to increase load and reduce empty trips) ✓ Cost-efficiency of the system ✓ Public acceptance
<p>OUTLOOK & TRANSFERABILITY</p>	<p>The heavy vehicles charge is an important part of the multimodal Swiss freight transport policy. The impacts and experiences with the introduction of the heavy vehicles charge are very positive regarding efficiency of road freight, modal shift, reduction of emissions, operation of the system and revenues generated. Negative side effects are very limited. Further developments include the introduction of the European Electronic Toll Service (EETS) for foreign trucks. In medium and long term greenhouse gas emissions or noise could be implemented in the charge. The charge could also become location and time dependent which would allow a more advanced demand management.</p> <p>The scheme and system are transferable to other countries. It can be adjusted to other national needs and requirements (financing, demand management, reduction of environmental impacts etc.) and framework conditions (policy goals, etc.).</p>



MORE INFORMATION

Contact:
 Federal Office for Spatial Development:
christian.egeler@are.admin.ch
 Swiss Customs Authority:
miriam.sahlfeld@ezv.admin.ch

Publications:
 Fair and efficient: The distance related Heavy Vehicle Fee in Switzerland (2015), available from
www.are.admin.ch

13. National Highway Freight Program



Keywords: State freight plans, FAST Act, multimodal freight policy, freight formula funds

**DESCRIPTION
IN SHORT**

The Fixing America’s Surface Transportation (FAST) Act of 2015 specifies goals for improving the performance of the National Multimodal Freight Network to ensure that it provides a foundation for competing in the global economy. Specifically, the FAST Act establishes a National Multimodal Freight Policy with goals to guide decisionmaking and requires the development of a strategic plan to implement these goals. The legislation also establishes a National Highway Freight Program (NHFP) with \$6.3 billion in formula funds over 5 years for States to invest in freight projects.

BACKGROUND

On December 4, 2015, legislation was signed for the first long-term transportation reauthorization act in a decade, the FAST Act. **This Act provides 5 years of funding certainty for infrastructure planning and investment, including \$305 billion over FY 2016-2020 for all modes.** The Fast Act establishes a national policy for maintaining and improving the condition and performance of the National Multimodal Freight Network (“the Network”), to ensure that the Network provides a foundation for the U.S. to compete in the global economy. The FAST Act specifies goals associated with this national policy related to the condition, safety, security, efficiency, productivity, resiliency, and reliability of the Network, and also includes goals to reduce the adverse environmental impacts of freight movement on the Network. The FAST Act includes the following program:

- NHFP: Provides \$1.2 billion per year on average for States per a formula, for construction, operational improvements, freight planning, and performance measures. Up to 10 percent of this budget can be spent on rail, port, or intermodal projects.

To implement the NHFP program, the FAST Act:

- Requires a national freight strategic plan that identifies multi-modal freight policy goals and strategies to meet them.
- Requires the designation of a National Multimodal Freight Network.
- Requires the designation of a National Highway Freight Network (NHFN).
- Requires State freight plans.
- Encourages State freight advisory committees.



Source: Federal Highway Administration

ELEMENTS

State Freight Plans: To use funding provided under the NHFP, each State is required to develop a freight plan, which comprehensively addresses the State’s freight planning activities and investments (both immediate and long-range). As of August 2018, there are **47 States with FAST Act compliant freight plans**. A State may develop its freight plan either separately from, or incorporated within, its statewide strategic long-range transportation plan.

Among other requirements, a State freight plan must:

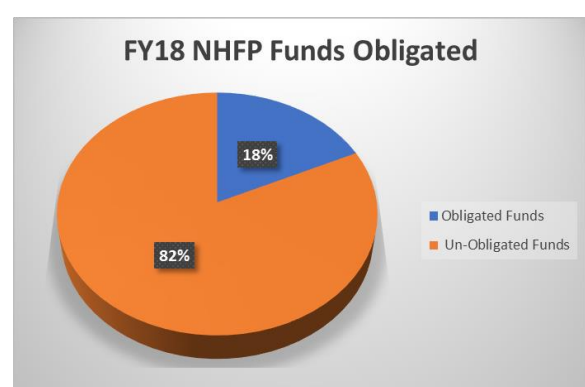
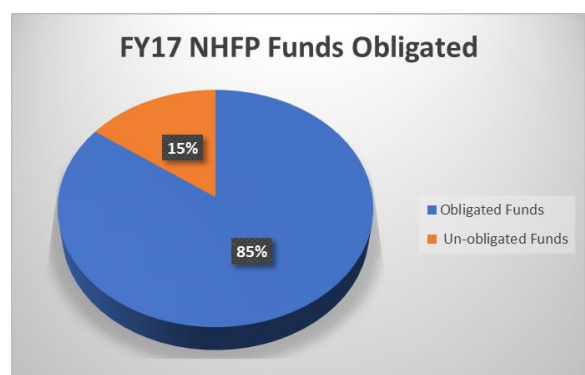
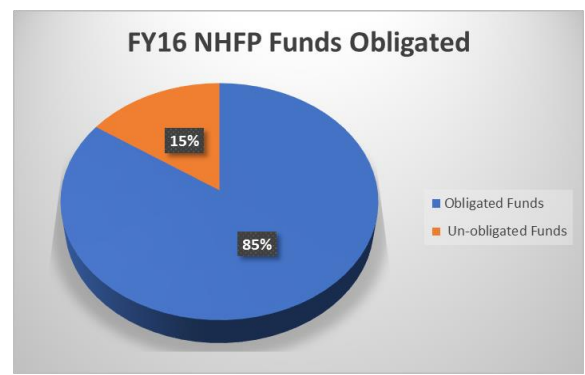
- Cover a five-year forecast period;
- Be fiscally constrained;
- Include a “Freight investment plan” with a list of priority projects; and
- Describe how the State will invest and match its NHFP funds.

The State must update its freight plan at least every five years, and may update its freight investment plan more frequently than the overall freight plan.

[Guidance on State Freight Plans and State Freight Advisory Committees](#)

RELATED MEASURES	<p>The Federal Highway Administration (FHWA) has finalized six interrelated performance rulemakings to implement the Transportation Performance Management (TPM) established by the Moving Ahead for Progress in the 21st Century Act (MAP-21) and the FAST Act.</p> <p>Freight Reliability Measure</p> <p>What: Measurement of travel time reliability on the Interstate System (Truck Travel Time Reliability (TTTR) Index). Why: Through MAP-21, Congress required FHWA to establish measures to assess performance in 12 areas, including freight movement on the Interstate.</p>
IMPACTS & BENEFITS	<p>Generally, NHFP funds must contribute to the efficient movement of freight on the NHFN and be identified in a freight investment plan included in the State’s freight plan (required in FY 2018 and beyond).</p> <p>In addition, a State may not use more than 10% of its total NHFP apportionment each year for freight intermodal or freight rail projects.</p>
SUCCESS FACTORS	<p>The success factors of NHFP consist of:</p> <ul style="list-style-type: none"> Investing in infrastructure and operational improvements that strengthen economic competitiveness, reduce congestion, reduce the cost of freight transportation, improve reliability, and increase productivity; Improving the safety, security, efficiency, and resiliency of freight transportation in rural and urban areas; Improving the state of good repair of the NHFN; Using innovation and advanced technology to improve NHFN safety, efficiency, and reliability; Improving the efficiency and productivity of the NHFN; Improving State flexibility to support multi-State corridor planning and address highway freight connectivity; and Reducing the environmental impacts of freight movement on the NHFN.
OUTLOOK & TRANSFERABILITY	<ul style="list-style-type: none"> The Fast Act established a new NHFP to improve the efficient movement of freight on the NHFN. The FAST Act directs FHWA to apportion funding as a lump sum for each State then divide that total among apportioned programs. The statutory requirements to utilize this freight funding source are consistently applied to all States. Eligible activities are clearly stated in the law as to the types of projects/uses of program funds. In order to establish a similar freight program, there must be an established set of laws based on the individual country that are consistently applied throughout the regional transportation network.

Percent of NHFP Funds Obligated Per Fiscal Year



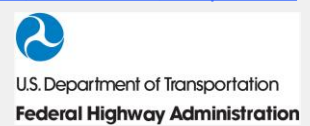
Source: Federal Highway Administration

MORE INFORMATION

Contact:
 USDOT- Federal Highway Administration
 Office of Freight Management and Operations
 Tamiko Burnell, Transportation Specialist
Tamiko.Burnell@dot.gov

Publications:

<https://www.fhwa.dot.gov/fastact/factsheets/nhfpfs.cfm>



Author: Tiffany Julien, FHWA, Tiffany.julien@dot.gov



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World Road Association (PIARC)

La Grande Arche, Paroi Sud, 5e étage, F-92055 La Défense cedex

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