

## H-2: Freight transport demand

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## 1) General description

### 1.1) *Brief definition*

This indicator presents three elements:

- I. The volume of freight transported to the corresponding stage distance during a year by different modes of freight transport (total freight transport demand);
- II. the modal split share of freight transport (i.e. the share of different modes of transport in total freight transport demand); and
- III. the volume of freight transport per unit of Gross Domestic Product (GDP).

### 1.2) *Units of measurement*

The total freight transport demand and freight demand by modes of transport (I.) are expressed as ton-kilometres (tkm); the modal split share of freight transport (II.) is expressed as a percentage; the volume of freight transport per unit GDP (III.) is measured as tkm per unit of GDP at constant prices in international dollars in purchasing power parity (PPP). For internal use, the GDP could supplementary be expressed in the national currency.

### 1.3) *Context*

Relation to other indicators from the Guidelines - This indicator relates to indicator “H-1: Passenger transport demand”.

## 2) Relevance for environmental policy

### 2.1) *Purpose*

Freight transport demand is a driving force indicator and shows the volume of cargo conveyance in a country by different modes of transport.

## **2.2) Issue**

Transport is an essential part of the economic and social life of a country. However, continuous growth of demand for transport, especially road transport, raises concern regarding the long-term sustainability of current trends. This problem is aggravated by the high age and energy intensity as well as poor environmental standards of vehicle fleets and the poor state of road infrastructure. Maintaining current trends in the transport sectors of the countries of South-Eastern and Eastern Europe, Caucasus and Central Asia would lead to sharp increases in environmental and health problems related to air pollution, noise pollution and extensive land uptake. The relevance of the modal split policy for the environmental impact of freight transport stems from differences in the “environmental performance” (with regard to resource consumption, greenhouse gas emissions, emissions of pollutants into the atmospheric air and noise, accidents, etc.) of different transport modes. Policies are expected to be implemented in countries of South-Eastern and Eastern Europe, Caucasus and Central Asia which support a shift towards less environmentally harmful means of transport. Thereby, shifting freight from road to water and rail is an important strategic element in future transport policy.

## **2.3) International agreements and targets**

### *a) Regional level:*

The Transport, Health and Environment Pan-European Programme (THEPEP), adopted by the High-level Meeting of the United Nations Economic Commission for Europe (ECE) and the World Health Organization (WHO) in 2002, requires as one of its priorities the implementation of measures supporting redistribution of freight transport in favour of modes which comply with the need to protect health and the environment.

### *b) Subregional level:*

The Environment Strategy of countries of South-Eastern and Eastern Europe, Caucasus and Central Asia calls for the development and implementation of national transport strategies for sustainable development using less energy-intensive modes of transport and for the introduction of incentives for environmentally sustainable transport. In the European Union (EU), the Thematic Strategy on Urban Development from 2006 calls for the use of “cleaner” modes of transport and for improving population mobility. The Renewable Energy Directive (2009/28/EC) requires a 10 % share of energy from renewable sources in each Member State’s transport energy consumption by 2020. A White paper, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, has been adopted in 2011 which proposes to halve the use of “conventionally-fuelled” cars in urban transport by 2030 and to phase them out in cities by 2050. Moreover, the paper urges to create the appropriate framework to allow tracing goods in real time, to ensure intermodal liability and to promote clean freight transport.

## 3) Methodology and guidelines

### 3.1) Data collection and calculations

Total inland transport should include transport by road, rail, inland waterways, maritime transport, and domestic aviation. Calculations relating to transport by rail and inland waterways should be based on movements on national territory, regardless of the nationality of the vehicle or vessel. Calculations relating to road transport should be based on all movements of vehicles registered in the reporting country. The unit of surveillance in freight conveyance statistics is the shipment (a batch delivered on the basis of a freight conveyance contract). Participants in the compilation of summary data on freight conveyances include enterprises, agencies and private individuals involved in the transportation business. Freight transport demand is defined as the product of the mass of freight conveyed in tons multiplied by the distance of conveyance in kilometres. The indicator *modal split* is presented as the share of a particular mode of transport in total freight transport demand (i.e. the modal split share for freight transport). The indicator *freight transport demand per unit of GDP* is defined as the ratio between freight transport demand in tkm and GDP in constant 2005 prices (in international dollars equivalent and optionally in the national currency).

### 3.2) Internationally agreed methodologies and standards

The methodology developed jointly by ECE, International Transport Forum (ITF) and the European Union Statistical Office (Eurostat) for the Common Questionnaire on Transport Statistics.

## 4) Data sources and reporting

In a number of countries of South-Eastern and Eastern Europe, Caucasus and Central Asia, data on freight transport demand by mode and on different types of load are published regularly in statistical yearbooks. Some countries report relevant data via the Common Questionnaire on Transport Statistics, circulated by ECE. The GDP is published in the United Nations Statistics Division (UNSD) National Accounts Statistics Database. The International Monetary Fund (IMF) International Financial Statistics Database and the World Bank's Database of World Development Indicators provide nominal and real GDP in international dollars for most countries. IEA maintains the most comprehensive databases on energy balances, which are primarily based on national data or on data and estimates collected by regional agencies.

## 5) References at the international level

- ECE, Annual Bulletin of Transport Statistics for Europe and North America: <http://www.unece.org/fileadmin/DAM/trans/main/wp6/publications/ABTS2012.pdf>;
- Illustrated Glossary for Transport Statistics, Eurostat, ICF and ECE, 4<sup>th</sup> edition, 2009: <http://www.unece.org/fileadmin/DAM/trans/main/wp6/pdfdocs/glossen4.pdf>;
- Thematic Strategy on the Urban Environment COM/2005/0718 final: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52005DC0718:EN:NOT>;
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC;
- EU WHITE PAPER Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system, COM/2011/0144 final: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52011DC0144:EN:NOT>;
- EU Action Plan on Urban Mobility, COM/2009/0490 final: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009DC0490:EN:NOT>;
- ECE – Transport: <http://www.unece.org/trans/welcome.html>;
- THEPEP: <http://www.unece.org/thepep/en/welcome.html>;
- International Transport Forum: <http://www.internationaltransportforum.org/>;
- European Environment Agency – Transport: <http://www.eea.europa.eu/themes/transport>;
- Eurostat – Transport statistics: <http://epp.eurostat.ec.europa.eu/portal/page/portal/transport/data>;
- OECD – Statistics: <http://www.oecd.org/statistics/>;
- Values of GDP in PPP in constant prices of 2005 in International dollars: <http://data.worldbank.org/indicator/NY.GDP.MKTP.PP.KD>
- International Monetary Fund – Statistics: <http://www.imf.org/external/data.htm>.