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Item 2 of the provisional agenda

Workshop: “Making rail freight more competitive and the coordinated development of the rail network with a focus on how to work together at the government and sectoral levels on EATL”

Background to the workshop on “Making rail freight more competitive and the coordinated development of the rail network with a focus on how to work together at the government and sectoral levels on EATL”

Submitted by the secretariat

I. Introduction

1. In line with the decision at the seventy-second session of the working party on rail transport to further discuss making rail freight more competitive and the coordinated development of the rail network with a focus on how to work together at the government and sectoral levels on EATL, a workshop has been organised on this subject. This document provides some background information and data to support discussions at the workshop building on the data gathered for the Working Party on Transport Statistics (WP.6).

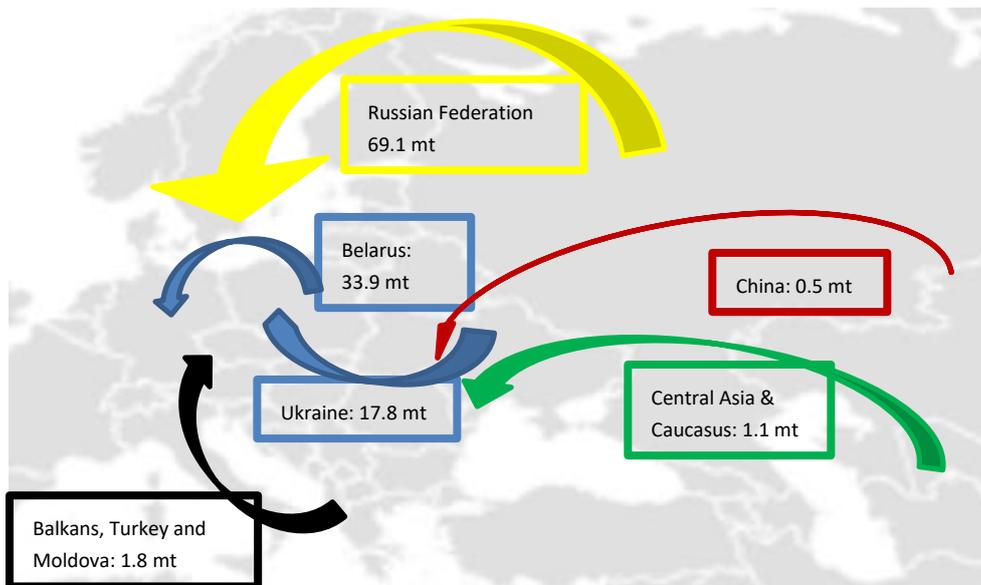
2. A fundamental part of the work of WP.6 is the gathering of information on rail traffic volumes on the E-Rail network, as defined in the European Agreement on Main International Railway Lines (AGC) through a five-yearly census. In 2018 the secretariat for the first time produced an interactive map of the results of this five-yearly census. This data, along with data from the Statistical Office of the European Union (Eurostat), can be used to understand and visualize key east-west freight movements, in order to identify flows.

II. Main international East-West flows

3. Over recent years the importance of rail has grown with the amount of cargo being transported from Asia to Europe increasing significantly. The current level of freight flows is set out in Figure I below. For the purpose of comparison, this document uses the European Union as a destination proxy for movements to the west.

Figure I

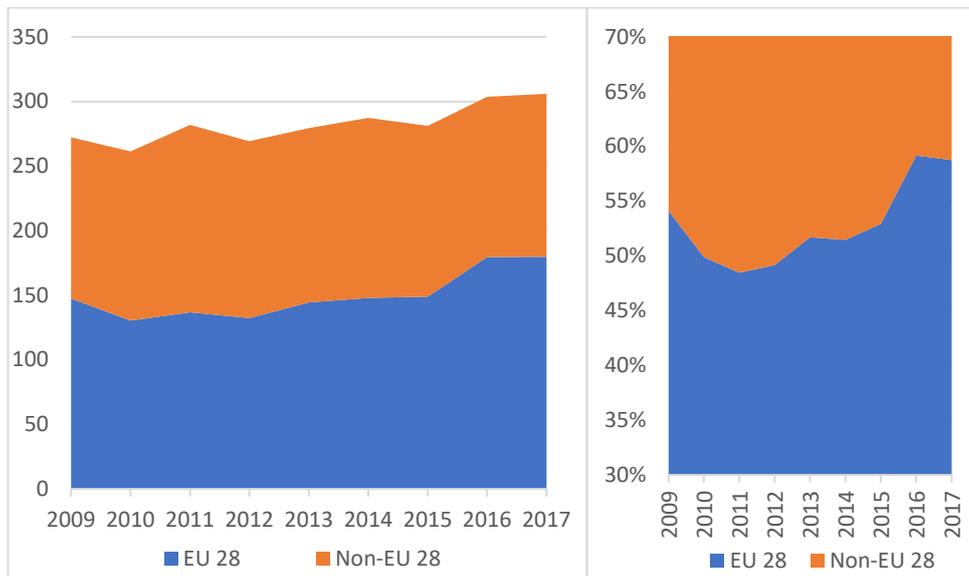
Rail goods flows into the E.U. from the East (mt = million tonnes), 2017



4. The figure above shows that the main source of rail freight traffic into the western part of Europe is the Russian Federation followed by Belarus and Ukraine. Currently, the flow of traffic directly attributed to China is small.

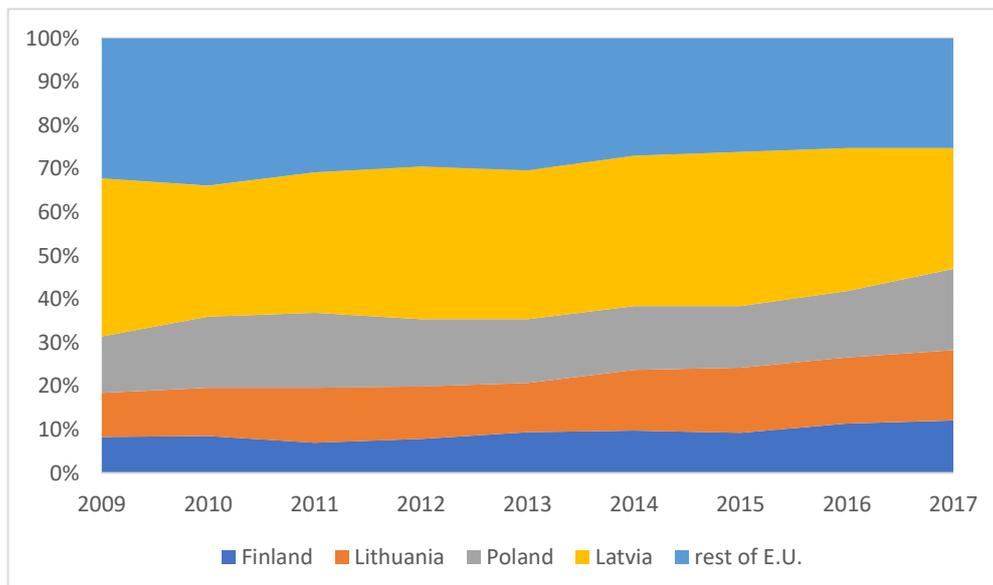
5. Figure II below shows total E.U. rail imports in tonnes, from 2009 to 2017, from all exporters, thus including intra-EU quantities. The total volume fluctuates over this period, but overall it increases from 272 million tonnes to 305 million tonnes. Within this timeframe, the intra-E.U. share of total E.U. imports increased from 54% to 58% after initially falling between 2009 and 2011.

Figure II
Total E.U. goods unloaded by rail, by source; millions of tonnes and %



6. These numbers however mask important differences across the small number of countries accounting for most of the rail freight movements, in particular the countries with imports coming from countries East of the E.U. For example, of the 127 million tonnes imported from outside the E.U. in 2017, 75% occurred in four member States (Latvia, Poland, Lithuania and Finland) as shown in Figure III. Given their large share, each of these four member States are analyzed individually below.

Figure III
Share of E.U. rail imports from outside the E.U., by importing country

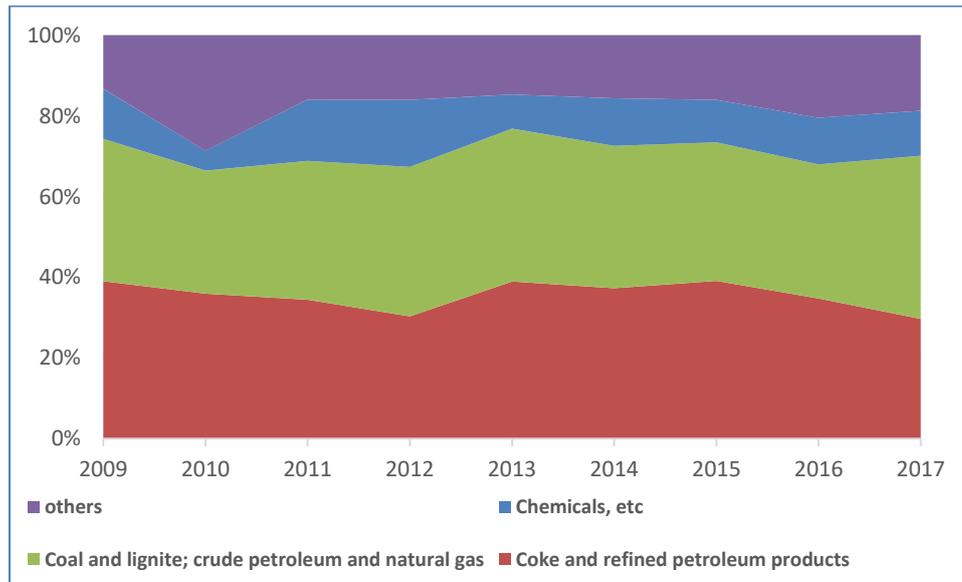


Latvia

7. Thirty-six point five million tonnes of goods were unloaded in Latvia by rail in 2017, a decrease over the 2009-2016 period where total unloaded quantities ranged between 42 million and 50 million tonnes. Russian Federation quantities accounted for 78% of goods unloaded, which in turn corresponds to 65% of the total tonnage moved on Latvia's railways in 2017.

Figure IV

Latvian goods movement on trains, by type of good

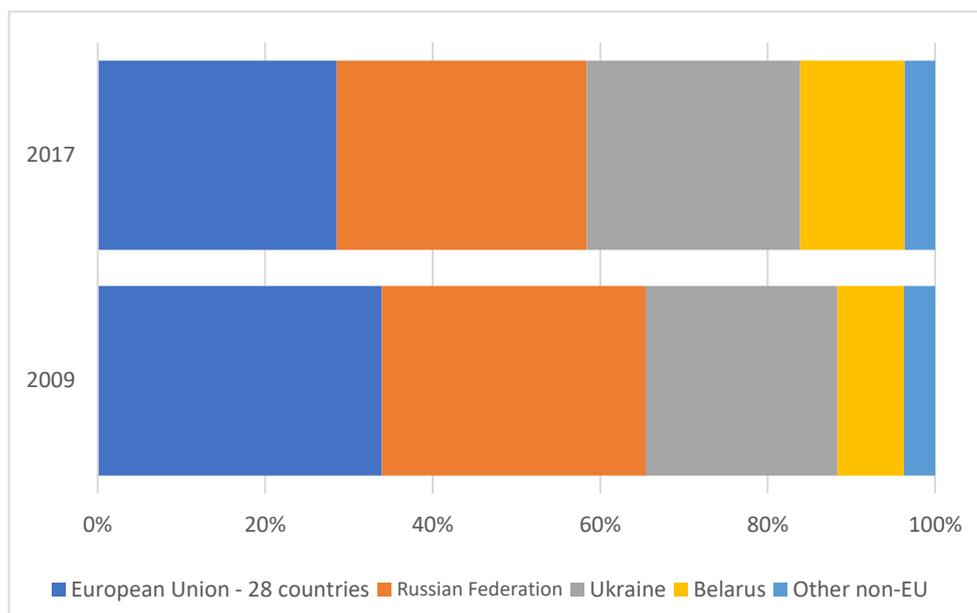


8. Moving away from international unloaded quantities and total quantities moved on the network, it is also possible to analyse quantities by type of good (based on NST 2007). Energy products (including coal, oil and natural gas primary and secondary products) accounted for 70% of national tonnage movements in 2017, the majority of which comes from Russian Federation and is destined for export through the Baltic sea ports. Figure IV shows the large share of primary and secondary fossil fuels in total Latvian rail tonnage.

Poland

9. Poland unloaded 37 million tonnes of goods by rail in 2017, 28% of which came from the E.U., 32% from the Russian Federation, 25% from Ukraine, and 12% from Belarus, with less than 1% coming from other non-E.U. member States (Figure V). Over the 2009-2017 period, the E.U. share of the total unloaded quantity decreased from 33% to 28%, with Belarus increasing its share by a similar amount.

Figure V
Poland international goods unloaded, by loading country



10. Of Poland's 37 million tonnes of rail imports, 3.5 million tonnes were made in containers, swap bodies and semi-trailers. As a proportion of imports, this is 9.4%, up from 5.4% in 2010, showing that this category is increasing significantly.

Lithuania

11. Lithuania in 2017 unloaded 20.8 million tonnes of goods by rail, 77% of which came from Belarus, and the majority of the remainder from Russian Federation and Ukraine. Unloadings from the E.U. were just 193 thousand tonnes, or slightly less than 1%. By type of good, chemicals is the biggest category with 15.5 million tonnes in 2017, followed by coke and refined petroleum products with 13.3 million tonnes. Many of these products will be shipped directly to the Baltic port of Klaipeda.

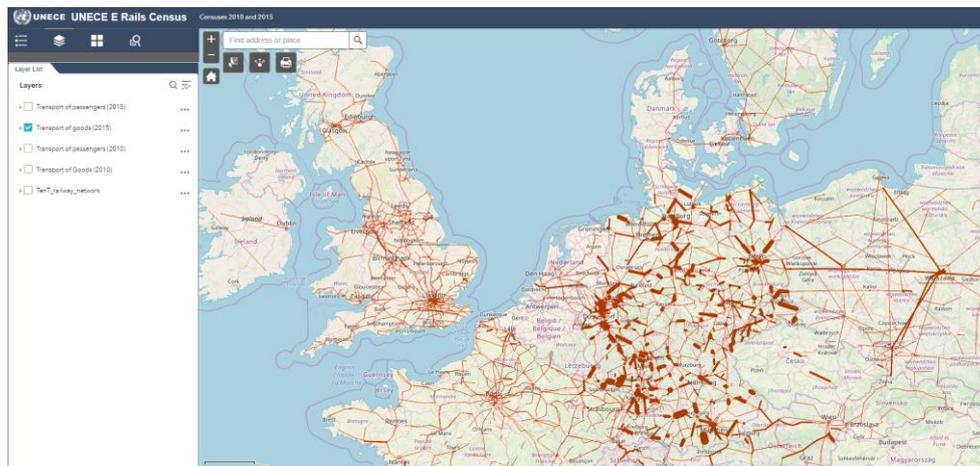
Finland

12. All of Finland's reported rail goods unloaded came from outside the E.U., the vast majority (99.7%) of which came from Russian Federation, with 15.3 million tonnes in 2017. This was out of 38.4 million tonnes of total rail goods movements in the country. The split of total goods is more varied in the country as a whole than for other countries, between agriculture products, wood and wood products, and metal products making up 73% of total tonnes.

III. Mapping the data

13. The census map developed by UNECE shows the number of trains per year, of both passenger trains and goods trains, in different segments of the E-Rail network. Figure VI shows an example of this. Data availability differs across countries, as does length of segments and detail, but for most countries the principal arteries in the freight network can be seen.

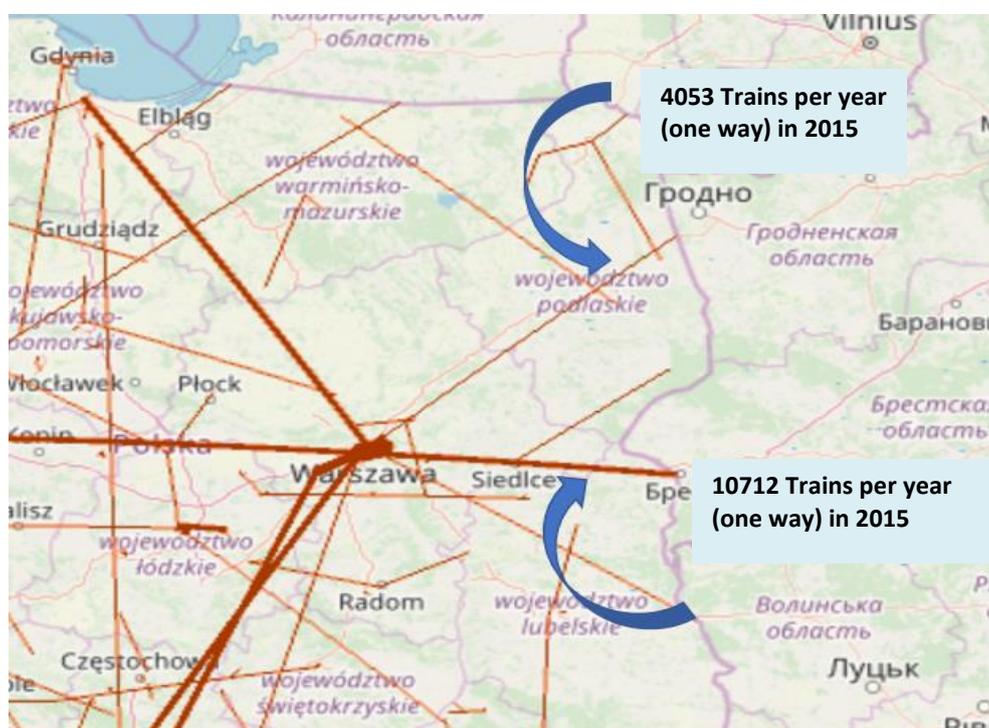
Figure VI
Freight train volumes on part of the E-Rail Census map, 2015



14. As the map only shows number of trains, on its own it cannot be meaningfully used to track freight volumes (in tonnes, tonne-kms or number of containers). At the ECE level, tonnes and tonne-km data are available at the national level, collected on a territorial basis and broken down between national, international-loaded, international-unloaded and transit volumes. These data can be used to see overall volumes of traffic on a country basis, including international traffic, but on their own cannot normally show the origin and destination of the traffic.

15. Given the limited number of countries with census data, there is currently only limited inferences to be drawn when combining the above figures with the ECE census map. Nevertheless, some points can be made, as Figure VII shows.

Figure VII
The two Belarus-Poland borders that handle most Russian Federation and Belarus exports to the EU



16. The clearest point to make is that all Russian and much Belarusian to Poland traffic will go through the Brest-Warsaw corridor, where 10 712 goods trains per year travel in one direction. This combined with the Warsaw-Grodno line (4 053 goods trains per year) will make up all of the Russian and Belarusian to Poland quantities. From this it can be estimated that on average 10 209 000 tonnes in 2015 is coming from the Russian Federation, Belarus and other non-EU travelled on 16765 trains, making an average of 609 tonnes of goods on each train. This will include some very small loads and empty trains returning after a bulk delivery, skewing the average figure downwards somewhat.

IV. Conclusion

17. In recent years East to West rail freight volumes have increased modestly, with four E.U. countries (Poland, Finland, Latvia and Lithuania) accounting for the majority of E.U. imports from non-E.U. origins. An increase in the proportion of this which is intermodal transport containers is also evident. Other datasets on type of goods transported can provide further insights. Richer analysis would be possible if similar detailed data were available for non-EU member States, and SC.2 may wish to request that WP.6 looks into this.

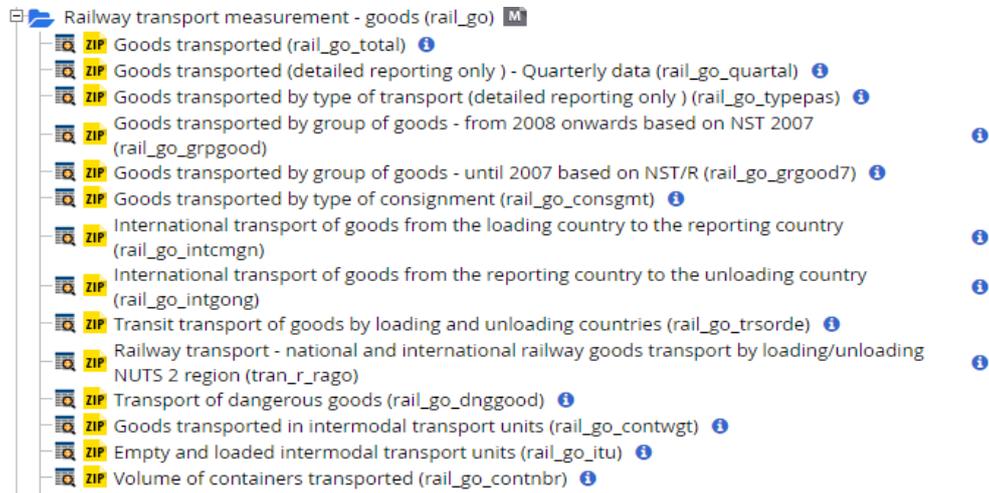
18. The census map can also be a useful complementary tool to visualize these East to West freight movements, allowing the importance of individual lines and bottlenecks to overall volumes to be considered. That being said, much more insights would be available if geospatial census data were provided for more countries, in particular some key member States involved in East to West movements.

Annex

Eurostat data sources

Figure A.1

Different rail datasets available from Eurostat



For tracking East to West freight movements, the key datasets of interest are the following:

- **Goods transported by type of transport** (rail_go_typepas). This breaks total freight volumes (in both tonnes and tonne-km) down between national transport, international transport-loaded, international transport-unloaded and transit volumes. This breakdown is also available through the UNECE database.
- **Goods transported by type of goods** (rail_go_grpgood). This breaks down total volumes on national territory between different types of goods, as per the Classification System for Transport Statistics (NST 2007).¹
- **International transport of goods from the loading country to the reporting country** (rail_go_intcmgn). This dataset shows all quantities of rail cargo imported into the reporting country, by their origin country. Therefore, we can use this to easily track quantities from non-EU Eastern countries to EU members. (International transport of goods from the reporting country to the unloading country (rail_go_intgong) mirrors this dataset.)
- **Railway transport - national and international railway goods transport by loading/unloading NUTS 2 region** (tran_r_rago). An extremely detailed breakdown of tonnes by origin and destination region. The Nomenclature of Territorial Classifications for Statistics (NUTS) NUTS 2 region splits countries into basic areas for the application of sub-national policies. There are currently 393 NUTS 3 regions. These rail data are only collected every 5 years, and so the latest data year is 2015, which agrees with the latest census year.
- **Goods transported in intermodal transport units** (rail_go_contwgy). A dataset that shows rail traffic volumes, including imports and exports, of different types of intermodal transport containers.

¹ <https://www.unece.org/fileadmin/DAM/trans/doc/2008/wp6/ECE-TRANS-WP6-155a1e.pdf>.