

## TRANSPORT IN TURKEY - MAJOR TRENDS AND ISSUES

This overview of the current situation and trends in the Turkish transport sector was prepared to provide information to the Parliamentary Delegation to Turkey (7-9 April 2015).

### 1. Overview

The transport sector in Turkey<sup>1</sup> is expanding rapidly<sup>2</sup>, in parallel with the country's strong economic<sup>3</sup> and population<sup>4</sup> growth. Air transport perfectly illustrates this trend: Istanbul is becoming one of the major hub airports in the world, while Turkish Airlines has emerged as the most profitable European airline in some years.

However, efficiency and productivity are still far from EU standards, especially in the case of rail and port services. Above all, **infrastructure has far to go to be at the right level and is unable to absorb additional traffic** - despite some spectacular works, like the third 'Bosphorus Bridge' to be open by the end of this year<sup>5</sup>. The Turkish government is therefore engaged in an ambitious plan to develop transport infrastructure by 2023 (the country's centennial year). Thus, 14 000 km new railways and 5 300 km new motorways should be built by then, not to mention the largest airport in the world and a 50 km long waterway between the Black Sea and the Sea of Marmara, among others.

Consequently, **there is a huge need for funding** that cannot be answered by the national budget<sup>6</sup>. Law has therefore been adapted to incentivise private investment, including foreign private investment, which is to provide most of the financing. Private companies are sought to build/operate infrastructure, and operate transport services. It is worth remembering **the high dependence of the country on foreign finance which is one of its main weaknesses**.

In this context, the relationship with/integration into the EU, including connexion with the trans-European transport network (TEN-T), remains a national priority. On the Union side, investments in Turkish transport infrastructure/sector are significant, be they private or public under pre-accession policy. **Turkey is the largest beneficiary of EU financial support among countries that aim at becoming a member of the European Union**<sup>7</sup>.

**Yet, the role of China is growing** since it is investing heavily in the development of Turkish transport infrastructure. More generally, **the importance of the Asian dimension should be emphasised**: the new networks will connect Turkey more and more to the East, as illustrated by the Trans-Asian Railroad Network toward China.

<sup>1</sup> Sources: Investment Support and Promotion Agency of Turkey, *Infrastructure Industry* (2013); Investment Support and Promotion Agency of Turkey, *The logistics industry in Turkey* (2013); TCDD Annual Statistics 2009-2013 (2014); ACI Europe, Europe's airports performance in 2014 (2015); CAPA Centre for Aviation (2013); Ministry of Development of the Republic of Turkey, *The Tenth Development Plan 2014-2018* (2014); The World Bank Group, Private Participation in Infrastructure Research Group, note 92 (2013); AEA Aviation Leadership Summit (2014); OECD Economic Surveys, Turkey (2014); OECD, data, indicators - transport; ITF *Transport Outlook 2015*; EMIS, *transportation sector in Turkey* (2014); European Commission, *IPA II indicative strategy paper for Turkey* (2014); Ministry of Transport, Maritime Affairs and Communications, *Maritime policy developments in Turkey* (2013); Maritime by Holland, *Maritime Turkey* (2013); Turkish Statistical Institute, Transportation statistics.

<sup>2</sup> In 2013 the Turkish transportation and storage sector grew by 3.4% year on year and accounted for 12.3% of national GDP. This share was 12% in 2009. The sector would currently employ about 5% of the national workforce.

<sup>3</sup> GDP average growth was 7.2% p.a. during the 2002-2006 period, and 3.3% p.a. during the 2007-2014 period.

<sup>4</sup> Population was 76.5 million and growth rate was 11.2 per thousand at the end of 2013.

<sup>5</sup> The *Yavuz Sultan Selim Bridge* (rail + road): 2164 m long, 322 m high, 59 m wide.

<sup>6</sup> Especially as the government plans to reduce budget deficit and public debt: from respectively 1.6% and 36.3% of GDP in 2013 to 0.7% and 30% of GDP in 2016.

<sup>7</sup> It is worth reminding that the EU remains by far Turkey's major economic partner with around 38% of its total trade and 71% of foreign direct investments in 2012 (Turkey being the 6th larger EU trade partner).



In addition, the fact that Turkey still does not recognise the Republic of Cyprus has an impact on the transport sector/policy as a whole. In fact, **Ankara imposes restrictions on direct transport links with Cyprus**: vessels and aircraft that are registered in this country cannot access Turkish ports, airports, and airspace. Moreover, vessels of any nationality related to the Republic of Cyprus in terms of ownership or ship management, or whose last port of call was in Cyprus, are subject to restrictive measures and can be refused access to Turkish ports too. This infringes both international and EU law - including obligation to remove all obstacles to the free movement of goods within the Customs Union, including restrictions on means of transport.

As a consequence, until Ankara normalises their relations with the Republic of Cyprus, accession negotiations with the EU cannot succeed: eight negotiation chapters (out of the 33 *acquis* chapters) will not be opened (including Chapter 14 on *Transport policy*) and no chapter will be provisionally closed (which includes Chapter 21 on *Trans-European networks*)<sup>8</sup>.

Crucially, this situation also **seriously harms air safety** in the Nicosia Flight Information Region.

## 2. INVESTMENT IN TRANSPORT INFRASTRUCTURE

### 2.1 A national priority

Every year, **about 30% of the total government budget is dedicated to transport infrastructure**. While in past the majority of investment was related to road and bridges, followed by railways, priorities are now reversed as it is the will of the government to increase rail market share.

Investment in transport infrastructure, in billion EUR		
	Total for the period 2006-2011 <sup>9</sup>	In 2014
Road	19.7	1.4
Rail	5.3	2.6
Air	2.5	0.35
Sea	0.14	0.21
<b>Total</b>	<b>25.7</b>	<b>4.6</b>

### 2.2 Privatisation

This huge share of public funding is to decrease as: (i) there is a plan to reduce the budget deficit and public debt and (ii) the infrastructure requirements/plans will require a significant amount of funds. **The privatisation of the transport sector is therefore accelerating**, primarily through Public-Private Partnerships (PPPs) and the 'Built-Operate-Transfer' model<sup>10</sup> which are more and more encouraged through new law and financial/tax incentives, especially as regards rail and maritime transport<sup>11</sup>.

Thus, between 1986 and 2011 PPPs financed the construction of transport infrastructure of a total estimated cost of around USD 23 billion (of which 13 billion in airport sector and 8 billion in road sector). This trend is to increase: **almost all of the large infrastructure projects to be completed by 2023 will be privately financed/operated** - with the notable exception of *Kanal İstanbul* between the Black Sea and the Sea of Marmara.

In addition, the port and airport sectors will be completely privatised (as they already are to a large degree), as well as a great part of the rail sector.

<sup>8</sup> See: 2014 European Commission's Report on Turkey's Progress towards accession: [SWD\(2014\) 307 final of 8.10.2014](#)

<sup>9</sup> OECD (2015), Infrastructure investment (indicator). doi: 10.1787/b06ce3ad-en (Accessed on 24 March 2015).

<sup>10</sup> BOT: Build (an infrastructure) - Operate (it during an agreed period of time) - Transfer (the ownership back to the Government).

<sup>11</sup> The New Investment Incentives Programmes was launched in 2012. It includes VAT exceptions and tax reductions to, notably, facilitate investment in infrastructure. Maritime and rail transport are considered as priorities and benefit from additional incentives.

## 2.3 EU funding of the Turkish transport sector

Instrument for pre-accession assistance (IPA) for the 2007-2013 period	
Funds allocated to the Turkish transport sector, in million euros	
Reconstruction of the Köseköy–Gebze section of the Ankara-Istanbul HSL (completion in 2015) - To be connected to the TEN-T	136
Rehabilitation of the Irmak–Karabük–Zonguldak railway line (completion in 2016) - to be connected to the TEN-T	188
Modernisation of the coastal radio network	2.4
Transfer of technical know-how to strengthen the quality infrastructure	5.6
Assistance to the railway reform	3.6
Forward-looking strategy to develop intermodal transport	1
Enhancement of training of seafarers	1.2
Controls on ship-sourced emissions in Turkish waters	1.5
Upgrading of the civil aviation training system (completion in 2016)	13.6
<b>Total for 2007-2013 transport related projects<sup>12</sup>:</b>	<b>353</b>
<i>Of which investment in infrastructure:</i>	332

Instrument for pre-accession assistance (IPA) for the 2014-2020 period	443
Funds earmarked for the Turkish transport sector, in million euros <sup>(1)</sup>	

(1) Main objectives between 2014 and 2020 being: the connection with the TEN-T rail network and the 'greening' of the Turkish transport system.

## 3. TURKEY AND THE TRANS-EUROPEAN TRANSPORT NETWORK (TEN-T)

Chapter 21 on Trans-European networks was open to negotiation with Turkey in December 2007. In January 2010, the 'Halkali-Kapikule-Ankara-Sivas-Kars Railway' (linking Bulgarian to Georgian borders through Turkey) was defined as a priority project of European interest.

In the context of the 2013 new TEN-T guidelines, Turkey is currently assessing the connection of some of their (rail) infrastructure with the EU network. Thus, the Turkish 'Transport Infrastructure Needs Assessment' (TINA) identifies the following (only rail) projects to be considered for IPA funding between 2014 and 2020, by order of priority:

*(1) Projects under construction (already partly financed under the 2007-2013 IPA):*

- Rehabilitation and reconstruction of the 56 km long Köseköy-Gebze section of the 533 km long Ankara-Istanbul High Speed Railway Line (launched in 2012; to be completed by the end of 2015).
- Rehabilitation and signalisation of the Irmak-Karabük-Zonguldak (launched in 2012; to be completed in 2016).

*(2) Projects in the planning phase to be partly financed under the 2014-2020 IPA:*

- Samsun – Kalın Railway Line Project.
- Halkalı – Kapıkule Railway Line Project.

*(3) Projects 'in gestation':*

- Malatya – Narlı Railway Line Project.
- Alayunt – Afyonkarahisar – Konya Railway Line Project.

<sup>12</sup> The EU also funded around 800km of new railway infrastructure in the country before 2007 for a cost of about EUR 4 300 million.

## 4. AIR TRANSPORT

	2002	2013	change 2002/2013
<b>PASSENGER, in million</b>			
domestic	8.7	76	+ 774%
International	25	73.3	+ 193%
<b>CARGO, in tonne</b>			
domestic	181 000	744 027	+ 311%
International	700 000	1 851 289	+ 165 %
<b>REGISTERED COMMERCIAL AIRCRAFT</b>	138	385	+ 180%

### 4.1 The booming Turkish air transport sector

Civil aviation in Turkey is on an upward trend. From 2002 to 2013 the number of commercial aircraft increased by 180% and the number of airport open to commercial traffic doubled (from 26 to 52). Further, the number of passenger (domestic & international) rose from less than 34 million to almost 150 million (+ 343%).

As a result, the sector generated USD 2.2 billion revenue in 2003 and USD 24 billion in 2014.

Aviation modal share in passenger transport within the country is currently about 8% (while it is negligible in freight transport, with less than 750 000 tonnes loaded on domestic flights in 2014).

### 4.2 Turkish Airlines (*Türk Hava Yolları*) is one of the fastest-growing airlines in the world and the most profitable European legacy carrier

From 2003 to 2014 the number of passenger flying Turkish Airlines (a Star Alliance member) increased by 450% (i.e. nearly five times the global growth over the same period), from 10 million (5 million domestic, 5 million international) to 55 million (23 million domestic, 32 million international). At the same time, Turkish Airlines revenue passenger kilometres (RPK) average growth was 12 percentage point over world RPK growth. In 2014 the airline generated a net profit of USD 845 million, more than double the result of the previous year. The airline (share ownership: 51% free float/49% Republic of Turkey) currently serves 108 countries and 264 airports worldwide (the 4<sup>th</sup> largest flight network in the world)<sup>13</sup>.

### 4.3 Consequently, Istanbul-Atatürk Airport is now the fourth European airport for passenger traffic (57 million passengers in 2014)

Remarkably, Istanbul's Sabiha Gökçen Airport also joined the European Top 20 airports in 2014 (ranking 18th with 23.5 million passengers).

As a consequence, the third Istanbul international airport is now under construction in Arnavutköy (a district 35 km north-west of the city centre). The new airport is planned to become one of the biggest in the world around 2018/2020 (6 Runways; 4 Terminals; 150 million passengers a year). The first phase (capacity for 90 million passengers) should be completed by late 2017. [The construction cost is currently estimated at EUR 10.2 billion. The 25 year-BOT concession has been awarded to the CLMCK Consortium for EUR 22.2 billion to be paid as rent in addition to the construction cost]. However, the project raises many environmental concerns: the new airport is notably to ravage a forest (according to the Ministry of Forest and Water Management, 657,950 trees would be cut and 1,855,391 (!) would be moved).

It is worth noting that Antalya Airport (managed by FRAPORT- Germany) is also one of the top 20 European airports for passenger traffic (28.3 million passengers in 2014).

### 4.4 A major air safety issue: the Nicosia FIR

In 1977 the Administration of Northern Cyprus established the 'Erçan Advisory Area', both only recognised by Turkey. This 'advisory area' covers the northern part of/conflicts with the Nicosia Flight Information Region (FIR) which is the sole recognised by the International Civil Aviation Organisation (ICAO).

<sup>13</sup> Turkish Airlines is also in a 50/50 joint-venture with Lufthansa: the Turkish carrier Sun Express which operates charter flights between Germany and Turkey.

This confusion is exacerbated by the absence of direct contact between the Nicosia FIR and the 'Ercan Advisory Area' or any air traffic control centre in Turkey, in breach of all ICAO requirements. This seriously compromises air safety in the Nicosia FIR.

EU efforts to resolve the conflict have never amounted to anything.

## 5. RAIL TRANSPORT

<b>Rail network (1.435 m gauge) in 2013:</b>	<b>12 097 km <sup>(1)</sup></b>
<i>Of which HSL (maximum operating speed: 250 km/h):</i>	888 km
<i>Of which electrified:</i>	3 304 km

(1) Turkey plans to expand its network to 26 000 km by 2023, including 10 000 km HSL.

Rail traffic by volume in 2013 and		Change 2012/2013	Change 2006/2013
Rail passengers	3.8 billion pkm <sup>14</sup>	- 18%	- 28.5%
Rail freight	11.2 billion tkm <sup>15</sup>	- 4.2%	+ 15.5%

Detail for passenger traffic in 2013, and change 2012/2013 in % <sup>(2)</sup>		
	Million passenger	Million pkm
<b>Mainlines</b>	<b>21 (+ 5%)</b>	<b>3 020 (+ 0.5%)</b>
<i>Of which HST:</i>	4.2 (+ 25.6%)	1 186 (+ 30%)
<b>Suburban</b>	<b>25.5 (- 49%)</b>	<b>755 (- 52.6%)</b>
<b>Total</b>	<b>46.5 (- 34%)</b>	<b>3 775 (- 18%)</b>

(2) The number of passenger has been sharply decreasing since 2012. This is due to (i) the suspension of sub-urban rail services in Istanbul for the construction of the *Marmaray* project and (ii) infrastructure important repairs.

### 5.1 The network must be modernised and expanded

The incumbent operator is the State Railways of the Republic of Turkey (*Türkiye Cumhuriyeti Devlet Demiryolları* - TCDD) with a staff of 30 000 in 2013. According to the law of 1 May 2013 on 'unbundling' (not yet fully implemented), TCDD<sup>16</sup> manages infrastructure, which is open to other undertakings, and operates rail transport services through a subsidiary.

Rail's share in domestic transport is currently rather low: less than 2% of passengers and 5% of freight, by volume, are transported by train. While the government strives to transfer a portion of traffic from road to rail (thus the share of train is expected to reach 15% for freight and 10 for passengers by 2023), investment in railways infrastructure is one of their top priorities since the existing network shall be modernised and expanded in order to accommodate additional traffic. The network should therefore reach 26 000 km by 2023 (i.e. + 14 000 km compared with 2013), including 10 000 km HSL (+ 9 000 km).

### 5.2 Need for money

As a consequence, there is a huge need for money. The government plans to invest USD 23.5 billion in the railways system between 2013 and 2023, which will not be sufficient to fund the entire development plan (the sole extension of the HSL network is evaluated at USD 45 billion). Consequently, the modernisation/expansion of the network shall first be financed through (foreign) private investment and by means of Public-Private Partnership (mainly based on the Built-Operate-Transfer model). Under the auspices of the 2012 *New Investment Incentives Programmes*, private undertakings are encouraged to build and/or operate railways, and operate train services.

### 5.3 Major rail projects

The will to connect the railway network to that of Asian neighbours and toward China is clear: the two major rail projects<sup>17</sup> are intended to connect Turkey and China. Consequently the latter will invest USD 30 billion (out of a total of 35 billion) in the HSL between Edirne and Kars - to be integrated into the Trans-Asian Rail Network. China also invests USD 22 billion in the 76 km-long Turkish segment of the Baku-Tbilisi-Kars railway project (while Turkish Government's share is USD 450 million).

<sup>14</sup> A passenger-kilometre (pkm) is equivalent to the movement of one passenger over one kilometre.

<sup>15</sup> A tonne-kilometre (tkm) is equivalent to the movement of one tonne of goods over one kilometre.

<sup>16</sup> TCDD also operates 3 of the biggest Turkish sea ports and 3 affiliated companies producing locomotives (*Tülomsaş*), passenger coaches (*Tüvasaş*) and freight wagons (*Tüdemtaş*).

<sup>17</sup> The Pakistan-Iran-Turkey Railway as part of the Trans-Asian Railroad Network, and the Baku-Tbilisi-Kars Railway.

The *Marmaray Project* (2004-2013), which is the first standard-gauge connection between Europe and Asia, is also part of this corridor. This USD 2.5 billion 76.3 km length project comprises 13.6 km tunnel, 1.4 km long immersed tube under the Bosphorus, 63 km railway upgrade and 41 stations.

Nevertheless, priority is still given to the routes which facilitate access to neighbouring countries and especially to projects connecting to the TEN-T network: the 'Halkali-Kapikule-Ankara-Sivas-Kars Railway' (linking Bulgarian to Georgian borders through Turkey); the Irmak-Karabük-Zonguldak Railway to the Black Sea. In addition, rail technical and administrative standards are more and more harmonised with those of the EU.

## 6. ROAD TRANSPORT

<b>Paved road network in 2013:</b>	<b>65 400 km</b>
<i>Of which main roads (dual carriage):</i>	22 200 km
<i>Of which motorways:</i>	2 236 km

<b>Road modal share</b>	<b>In 2013</b>	<b>Objective 2023</b>
<i>Passenger transport</i>	90 %	72 %
<i>Freight transport</i>	87 %	72 %

<b>Road traffic by volume, in million unit, 2003-2013</b>			
	2003	2013	<i>Change 2003/2013</i>
Vehicle-km	52 349	99 431	+ 90%
Tonne-km	152 163	224 048	+ 47 %
Passenger-km	164 311	268 178	+ 63%

<b>Number of road vehicle</b>	<b>2004</b>	<b>2013</b>	<b>Change 2004/2013</b>
Passenger cars	5 400 000	9 300 000	+ 72%
Trucks	647 000	756 000 <sup>(1)</sup>	+ 17%

(1) Turkey has the largest truck fleet in Europe.

<b>Road safety, 2003-2013</b>			
	2003	2013	<i>Change 2003/2013</i>
Accidents involving death or injury	67 031	161 306	+ 141%
Person killed	3 946	3 685	- 6.6%
Person injured	118 214	274 829	+ 133%
Accidents involving only material loss	388 606	1 046 048	+ 169%

### Major ongoing road projects

There are currently 15 road projects to be built on a BOT basis and to be completed by 2023. They account for a total of 5 500 km. Major projects that can be pointed out are:

- The *North-Marmara Highway* which is the largest BOT project in Turkey to date (300 km highway and a bridge at an estimated cost of USD 4 billion).
- The three-lane suspension *Çanakkale Bridge*, the country's longest bridge (3 623 m), which is still under project.
- The *Istanbul-Izmir Highway* (to be completed in 2017) which is a USD 11 billion BOT which includes the world's second-longest suspension bridge over the gulf of Izmir.
- The 5.4 km long, double-deck *Avrasya Tüp Tüneli*, a road tunnel under the Bosphorus to be completed in 2016. (The total cost of the project is estimated at USD 1.3 billion, partly funded by the European Bank for Reconstruction and Development (USD 150 million) and a USD 350 million loan from the European Investment Bank).

## 7. INLAND WATERWAYS TRANSPORT

### 7.1 A marginal mode of transport

Inland waterways transport in Turkey is negligible since the navigable network is very small and, de facto, limited to the Van Lake (and to lakes of some dams). Consequently, the Turkish river fleet is mainly engaged in foreign rivers such as Danube and Volga.

### 7.2 And a grandiose project

*Kanal İstanbul* is a 50 km long, 150 m width and 25 m depth man-made waterway between the Black Sea and the Sea of Marmara. Its construction started in 2013; it should be completed in 2023 (which is thought by many to be unrealistic). The canal is to reduce the maritime traffic through the Bosphorus (currently about 140 vessels and 30 tankers per day) and the associated risks. According to the Turkish government, the canal will cost USD 10 billion (which is viewed by some financial analysts as underestimated), wholly publicly funded.

It is worth mentioning that this infrastructure will slice through the heavily populated European side of Istanbul. Furthermore, its compatibility with the 1936 Montreux Convention Regarding the Regime of the Straits<sup>18</sup> is still to be assessed.

## 8. MARITIME TRANSPORT

### 8.1 Traffic

Modal share of maritime transport within Turkey	2013	Objective 2023
Freight	7%	10%
Passengers <sup>(1)</sup>	0.6%	N.A.

(1) Excluding cruise passengers

With a 8 200 km coastline and more than 450 sea ports, of which around 220 are open to commercial traffic, the share of freight maritime transport in Turkey is of importance and on an upward trend (+ 105 % by volume between 2003 and 2012). In addition, over half of the country's foreign trade go by sea (about 55% in 2013).

This trend should accelerate in the coming years since the government has set the objective of 10% of freight transported by sea within the country by 2023. Port capacity is therefore to be increased by 100% by the same year.

Cargo traffic at Turkish sea ports	2003	2012	Objective 2023
Freight loaded and unloaded, in million tonne	189	388	966
Containers loaded and unloaded, in million TEU <sup>19</sup>	2	7	30

Conversely, maritime transport is negligible as regards passenger traffic, with only 1 667 million PKM in 2013, i.e. a share of about 0.6% of total passenger transport. However, it is worth noting that the number of cruise passengers at Turkish ports is increasing rapidly (+ 182% between 2005 and 2012, with over 2 million passengers in this last year).

### 8.2 Investments in ports and privatisation

Increasing traffic calls for new investments. Funding is mainly through the private sector: around 130 of the 220 commercial ports are currently operated by private companies and this number should further increase through privatisation and public-private partnerships (PPPs).

Currently, there are 33 projects (increase in capacity or new ports) on track. 19 relate to container ports (including the new ports of Mersin [final capacity of 11.4 million TEU] and Çandarlı [final capacity of 4 million TEU]. 14 projects relate to bulk and general cargo ports, of which the new Filyos Port on the Black Sea of a capacity of 16 million tonne, to be completed around 2020.

<sup>18</sup> The Montreux Convention regarding the regime of the straits gives Turkey full control over the Bosphorus Strait and the Dardanelles, guarantees the free passage of civilian vessels in peacetime and governs the transit of military ships from the Black Sea to the Sea of Marmara.

<sup>19</sup> The twenty-foot equivalent unit (TEU) is an inexact unit of cargo capacity used to describe the capacity of container ships and container terminals.



### 8.3 Merchant fleet

Turkey owned merchant fleet (ships over 100 GT)			
	Vessels	Capacity	
2005	1 596	10.7 million dwt	
2013	2 237	30 million dwt	6.6% of world capacity - 13th world rank
Change 2013/2005	+ 40%	+ 180%	

Turkey registered fleet at 1 January 2013, ships over 1 dwt		
	National register	International register
Vessels	91	599
Capacity	776 000 dwt	9 200 000 dwt

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