



**Economic and Social
Council**

Distr.
GENERAL

TRANS/SC.2/1999/7/Add.1
15 July 1999

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

INLAND TRANSPORT COMMITTEE

Working Party on Rail Transport

(Fifty-third session, 6-8 October 1999,
agenda item 9)

DEVELOPMENT OF A EUROPEAN CONVENTIONAL AND
HIGH-SPEED RAILWAY NETWORK

Trans-European Transport Network: 1998 report on the implementation of the
guidelines and priorities for the future (COM(1998)614 final)

Executive summary and item 3.1.2: rail network

Transmitted by the European Commission (EC)

Note: At its fifty-third session, the Working Party requested the European Commission (EC) to provide relevant information on the development of (i) a European Conventional Railway Network and (ii) a European High-Speed Railway Network (including information on the complementarity between high-speed railway and air transport, regional development, regional transport and urban transport) (TRANS/SC.2/190, para. 50).

The Working Party may wish to consider the communication of the EC, concerning the progress achieved in the development of the Trans-European Transport Networks. The information reproduced below concerns its Executive Summary and the part dedicated to the rail mode. The rest of the document COM(1998) 614 will be available at the meeting room as an informal paper.

Please note that the distribution of documentation for the Working Party on Rail Transport (SC.2) is no longer "restricted". Accordingly, the secretariat has adopted a new numbering system whereby all working documents other than Reports and Agendas will be numbered as follows: TRANS/SC.2/year/serial number. Reports, Agendas, resolutions and major publications will retain their previous numbering system (i.e. TRANS/SC.2/189).

EXECUTIVE SUMMARY

This is the first implementation report on the Trans-European Transport Network, as required by the TEN-T guidelines (Decision 1692/96/EC¹). It is also the starting point for the first revision of the TEN Transport guidelines, because it is designed to start a broad consultation process to identify the changes that need to be made. The final section of this report therefore sets out the broad issues to consider in the revision process.

The overall picture is one of significant activity in difficult circumstances. The combination of low growth and fiscal consolidation in the period in question means that infrastructure spending overall has been below the long-term trend. As regards the 14 specific projects in Annex III of the guidelines ("the Essen projects") there has been significant progress, with three close to completion, 8 under construction or at a very advanced stage of preparation and most likely to be completed by around 2005. Looking ahead, Member States' plans suggest a significant increase in construction activity on the 14 projects in the early years of the next century which will require increased financing by all parties concerned.

The main impact of the TEN-T will be to improve the competitiveness of the European economy, by ensuring that the Single Market is supported by an integrated transport system. This will be vital for sustainable growth. The main employment effects of the TEN-T will also be felt in the long term, due to this structural increase in European competitiveness, though significant numbers of temporary jobs are generated in the construction period.

Against this background, it is clearly essential for Member States to stick to their plans for increased investment in the 14 Essen projects (including through public-private partnerships), and find the necessary finance to do so. In order to achieve the guidelines objectives of completing the network by 2010, Member States will also be required to intensify their efforts on the TEN-T as a whole. It will also be important to ensure adequate funding at EU level, through the range of Community Financial instruments, notably the TEN Budget itself, for which the Commission envisages an allocation of 5 BECU from 2000-6.

Some of the key conclusions of the report are:

- total investment in a TEN-T in 1996-7 was 38,4 BECU. The estimated total costs of the projects concerned is 307 BECU, making up approximately 2/3 of the total schemes envisaged in the guidelines.
- total support from Community funds and the EIB amounted to 12,6 BECU, representing roughly 30% of the total investment;
- 39% of total investment in the period went on rail, 38% on roads and 15% on airports. Around 60% of the TEN-T budget goes to rail, compared to 15% on roads.
- Nearly 2/3 of the rail investment was devoted to high-speed lines, although in terms of distance the upgrading of conventional rail was predominant in the 1800 km completed.
- More than 54% of the road construction on the TEN related to upgrading of existing roads rather than new routes.

¹ Decision 1692/96 of 23/08/96 ; OJ L 228 of 9/9/96.

The report also identifies progress in applying new technology to the TEN-T (Intelligent Transport Systems, ITS). In particular, the research undertaken within the 4th Framework Research Programme and other EU research programmes is starting to bear fruit with a clear move from research and development to the implementation phase. Similarly, the development of a European Rail Traffic Management System (ERTMS) is close to realisation, offering the possibility of substantial safety and capacity improvements on the TEN-T rail network. In the field of satellite navigation, work to develop a European component for a Global Satellite Navigation System (GNSS) has advanced to a stage where a strategy can be laid down for further action.

The period has also seen a number of important trends, in particular, the growing emphasis given to the development of more environmentally friendly transport systems, where the EU budget has had a beneficial impact, and the use of public private partnerships to accelerate implementation of infrastructure projects of all sizes.

One important conclusion from preparation of the report is that there is a need for a more systematic approach to data collection on transport infrastructure investment in the EU, to enable the EU and Member States to follow the development of traffic and infrastructure capacity to support policy decisions, including changes to the TEN-T guidelines. This will be a priority in the coming period.

The report also sets out some of the key issues that will need to be looked at in the preparation of the White Paper on revision of the TEN-T guidelines that is due to be published next summer, and which will be followed by a revision proposal in the course of 2000.

The main areas identified are:

- how best to set priorities for investment in the TEN-T, particularly once the 14 Essen projects have been completed;
- how to shift the focus from infrastructure investment to quality of service;
- how to integrate the modal networks, so that travellers are encouraged to use the most effective mix of forms of transport, rather than a single mode;
- how to encourage the use of Intelligent Transport Systems to allow more efficient use of existing infrastructure;
- how to take account in the guidelines of the forthcoming accession of new Member States;
- how to further strengthen the environmental dimension of the guidelines.

On this basis, the Commission hopes to stimulate a constructive debate on the future of the TEN-T in general, and priorities to revise the guidelines in particular.

Anyone who wishes to put their views forward should send them to:

DGVII/A/2
The Directorate General for Transport,
European Commission
Rue de la Loi 200 (BU-33 04/05)
B-1049 Brussels

3.1.2 Rail network

The rail networks of the 15 EU Member States have a total length¹⁴ of 156.000 km of which some 78.600 km¹⁵ are designated as the trans-European railway network in Annex I of the guidelines (see table 3 below).

Table 3: TEN-T rail network

	New HS lines	Upgraded HS lines	Conventional lines
<i>Existing (km)</i>	2 600	2 300	48 400
<i>Planned (km)</i>	10 000	14 000	1 300
Total (km)	12 600	16 300	49 700

In the period 1985-1995, investment in rail infrastructure in Europe rose by over 25% compared to the previous ten years. During this period much of the investment was devoted to high speed (HS) construction programmes in France, Germany, and Spain. While some 1553 km of HS lines were opened between 1990 and 1993 (with an average of approximately 400 km per year), only 460 km were opened, or close to completion, between 1994 and 1998 (with an average of less than 100 km per year).

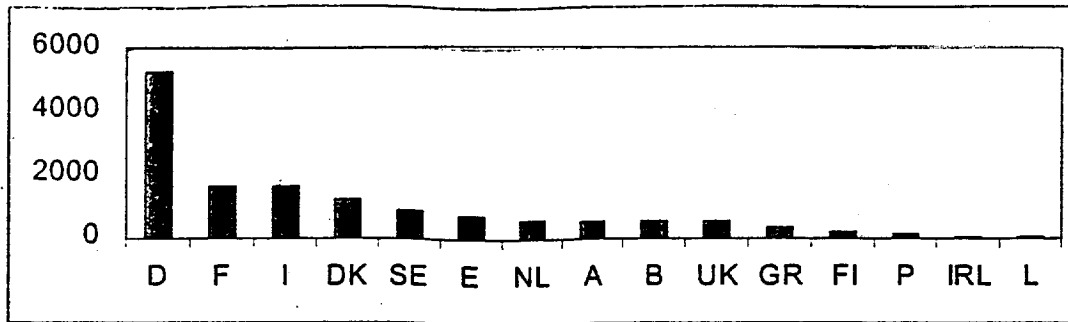
During 1996-7, investments in the TEN rail network totalled 15,1 BECU: one third was invested in Germany while France and Italy accounted for about 11% each. More than 68% of the total of the investment was devoted to HS lines¹⁶. Most of the projects notified were in an early stage of development in 1996/97.

¹⁴ Only main lines, source: EU Transport figures. Statistical Pocket Book 1998, EC-DG VII – EUROSTAT, Brussels.

¹⁵ DG VII estimates

¹⁶ For instance in France more than 90%.

Figure 4: Investment in TEN rail infrastructure per country in 1996/97 (in MECU)



Major improvements in the TEN HS network are foreseen in the coming years: it is expected that 865 km of new HS lines and more than 2000 km of upgraded HS lines will be completed by 2003 (see tables 4 and 5). Investment took place on about 40% of the length identified as “planned” in the Guidelines during 1996/97 (see tables 4 and 5). According to the forecasts for the completion of the projects, it appears that from 1998 to 2003-5, investment in the TEN rail network will increase as a significant number of projects reach maturity. Most of the rail projects – in particular the HS lines – are likely to be completed by the second half of the next decade. After 2007, however, the number of projects still under construction may decline with a large majority of them being completed by 2010. The total cost of the rail projects is estimated at about **185,6 BECU**.

Figure 5: Estimated total cost of TEN rail projects per country, in MECU

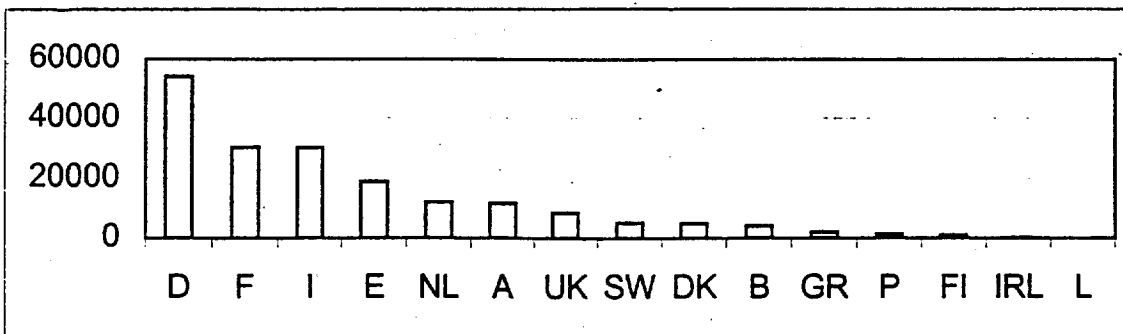


Table 4: Development of TEN rail network in 1996/97 (in km) – projects notified by the Member States¹⁷

	Total length currently "planned" ¹⁸	Under development ¹⁹	Of which HS lines/ Upgraded HS lines	of which conventional lines ²⁰
Belgium	273,2	273,2	125,0	-
Denmark	714,0	714,0	176,0	-
Germany ²¹	3472,0	3472,0	2030,0	533,0
Greece	1649,0	1511,0	582,0	919,0
Spain	5498,0	4792,0	592,0	n.a
France	5573,5	3303,5	293,5	346,0
Ireland	1080,0	1080,0	-	1080,0
Italy	5312,0	3577,0	1558,0	1305,0
Luxembourg	46,0	46,0	-	46,0
The Netherlands	562,5	342,0	-	160,0
Austria	1186,0	1079,2	671,4	323,8
Portugal	908,0	778,0	-	538,0
Finland	1044,0	1044,0	-	1044,0
Sweden	4879,0	4712,0	3066,0	401,0
United Kingdom	1408,0	1408,0	850,0	150,0
Total TEN	33605,2	28131,9	9943,9	6845,8

Conventional network

Upgrading the conventional rail network aims to improve quality, in terms of speed (specific measures are also undertaken to allow the use of tilting trains) and capacity as well as safety. More than 6000 km of conventional lines were under development in 1996/97 and the upgrading of these lines accounted for more than 3,6 BECU – about a quarter of the rail investment over the period. The improvements to the TEN conventional network relate in particular to:

- electrification;
- route alignment and double tracking;
- loading gauge improvement in order to favour combined transport;
- axle weight improvement (in particular in the Nordic countries, to allow longer and heavier freight trains);
- signalling and traffic control systems (see section 3.2.2).

¹⁷ Projects under construction or completed

¹⁸ The figures also include lines shown as "existing" in the annex I of the guidelines on which upgrading works were undertaken in 1996/97.

¹⁹ "Under development" relates to links on which investment occurred in 1996/97 : construction or studies.

²⁰ New construction and upgrading.

²¹ Including the magnetic levitation train.

HS network

The HS network consists of new lines specifically designed for speeds of 250 km/h and higher and of specially upgraded lines for speeds of the order of 200 km/h (less for certain limited sections). France in particular has pursued the construction of an entirely new HS infrastructure which will be supplemented on the less important axes by lines specially adapted for HS and the use of tilting trains. Other Member States - notably Germany and Spain - have chosen to mix new lines with upgraded infrastructure lines where the traffic volumes and/or the extra capacity available do not justify completely new HS lines. MS such as the UK and Finland have preferred to base their HS network mainly or entirely on upgraded HS lines.

In some countries, the need for new HS infrastructure has been called into question by the development of tilting-train technologies, especially in cases where the economic viability of the HS speed line is low. However, some important **cross-border HS rail projects** have progressed significantly in 1996/97:

- **Belgian section of the PBKAL** between Brussels and the French border. Linking the capitals of Paris and Brussels, it represents the first newly built HS line which connects two HS networks. The journey time from Paris to Brussels has been reduced by around 50% and subsequently the market share of rail has risen from 25% at the beginning of 1996 to around 40% at the end of 1997;
- the **Amsterdam-Belgian** border link (also a branch of the PBKAL), which was approved in 1996 and should be completed by 2005;
- in Germany, works on the 69 km **Aachen-Köln** section of the PBKAL (upgraded line) have started and due to be completed by 2007.

Some HS projects contribute substantially to the completion of the national network by **linking major conurbations**, for example:

- in France, the 255 km line from **Valence to Marseille and Nîmes** has reached an advanced stage of construction. The project represents more than 90% of the TEN rail infrastructure investment in France in the years 1996/97. The line is planned to be in service by 2001 when it will allow travelling times of 3 hours between Paris and Marseille;
- in Italy, works progressed on the new HS line between **Rome and Naples** (204 km) which will form the backbone of the new Italian HS network and cut travel times by around 50% by 2001;
- in Germany, progress was made on the construction of the 177 km HS link between **Köln and Frankfurt** (operational in 2000), while major upgrading works were carried out on the 200km section between Berlin and Halle/Leipzig and 117 km section between Leipzig and Dresden.

Table 5: New HS lines under construction or opened in 1996/97

Country	Line	Estimated year of completion	Length (km)
Germany	Existing HS network²²		457
	Berlin-Hannover	1998	264
	Köln - Rhein Main	2000	177
	Erfurt/Leipzig-Halle	2007 ²⁴	122
	Nürnberg - Erfurt ²³	2007	192
Belgium	French border-Antoing	1996	14
	Antoing-Halle	1997	71
Spain	Existing HS network		471
	Catalayud - Ricla	2002	35
	Zaragoza - Lleida	2002	130
France	Existing HS network		1243
	Interconnection TGV Nord-TGV Sud Est	1996	26
	Fretin-Belgian border	1996	12
	Valence-Marseille/Nimes	2001	255
Italy	Existing HS network		242
	Roma Napoli	2001	204
	Firenze Bologna	2003	78
Austria	Mürzzuschlag - Gloggnitz	-	23
	St Pölten - Wien	2009	45
Denmark	Great Belt	1997	20
	Øresund (access)	1998	14
(1) Total length in of the network in service in 1996			2413 km
(2) Total length open to service in 96/97			143 km
(3) Total length under construction in 96/97			1539 km
(1)+(2)+(3)			4095 km