



**MEMORANDUM FOR THE COMMITTEE ON PETITIONS
OF THE EUROPEAN PARLIAMENT
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Introduction

The aim of this memorandum is to demonstrate how the preliminary plan for the new Turin-Lyon transalpine rail link dovetails with the wider Italian high-speed passenger railway programme, and how it conflicts with:

- the Community directives on SEA (Strategic Environmental Assessment), EIA (Environmental Impact Assessment) and Habitat, in view of its considerable environmental impact;
- the objectives of the White Paper on European Transport and of the Stability Pact, due to its very heavy economic and financial burdens for the Italian Treasury;
- Decision No 884/2004/EC of the European Parliament and of the Council of 29 April 2004 amending Decision No 1692/96/EC on the new trans-European transport networks (TEN-T);
- the selection criteria for ‘priority projects’ established by the Van Miert TEN-T High-Level Working Group;
- the conclusions of the Franco-Italian Intergovernmental Commission set up in 1996.

First and foremost it should be remembered - as indicated in Resolution No. 113/2003 of the CIPE (Interministerial Committee for Economic Programming) approving the preliminary plan for the new Turin-Lyon transalpine rail link and sanctioning its environmental compatibility, according to the rules and accelerated procedures laid down in the special rules on strategic infrastructure (action for default brought by European Commission DG XI (Environment)) - we are talking here, as far as the Italian Government is concerned and as indicated above, of creating a high-speed (and high-capacity) transalpine link of around 72 km, 53 km of which lies in tunnels, in pursuit of the unrealistic operational objectives of transporting passengers by train between Lyon and Turin in 1 hour 30 minutes (currently a 4-hour journey) and between Paris and Turin in 3 hours (currently a 5½-hour journey).

Since the capital of TAV SpA is wholly owned by the entirely public company FS SpA, this project would cost the Italian Treasury a sum calculated by the WWF at EUR 9 billion at current prices (out of the EUR 15.2 billion total cost of the transalpine link). The project is crucial for the construction of the east-west high-speed link, which would cost EUR 29.154 billion at today’s prices and would complete the high-speed system, which today would cost the Italian Republic around EUR 60

billion in total (including the more than EUR 30 billion for the north-south link, currently comprising just the Turin-Milan-Rome-Naples line); all this to construct 1 500 km of new line in a country where only 5 603 km of the 15 923 km of ordinary rail network is dual track and electrified.

Today, therefore, the high-speed line project would cost the State EUR 60 billion whereas in 1991 the cost of the 1 500 km of new high-speed line was put at around LIT 26 trillion (equivalent to about EUR 13 billion today). Nothing daunted, the Italian Government even wants to extend the high-speed north-south line at prohibitive cost (EUR 22 billion for the Battipaglia - Reggio Calabria link and EUR 12 billion for the link between Verona and the border) not to mention constructing high-speed links on the Novi-Novara-Domodossola-Simplon line (the Lyon/Genoa-Basle-Duisburg-Rotterdam/Antwerp route - priority project No 24 on the TEN-T list, the so-called 'two seas' corridor).

All this for the purpose of building lines which differ from the ordinary network in terms of construction characteristics (gradient and radius of curvature) and power supply (the chosen supply is 2 x 25 kV/50 Hz single-phase whereas the conventional network uses 3 kV DC) with a top speed of 300 km/h.

It is patently obvious that the Italian high-speed rail project cannot be regarded as a regeneration of the railways: in fact, out of 15 923 km of ordinary rail network in Italy, only 6 363 km are dual track and only 5 603 are both dual track and electrified. Therefore, as we shall see below, the exorbitant investment needed to build the high-speed system is diverting public funds away from modernisation and improvement of the existing rail network.

However, the Italian Government is doggedly pursuing this objective: the *Traspadana* or east-west high-speed passenger line is quite simply the Lyon-Trieste/Koper-Ljubljana-Budapest-Ukraine border axis (priority project No 6 on the TEN-T list - Corridor 5), although Decision No 884/2004/EC does not present the high-speed line as the only option. The north-south high-speed passenger link is the Berlin-Verona/Milan-Bologna-Naples-Messina-Palermo axis (priority project No 1 on the TEN-T list).

The Italian Government has no intention of weighing up the existing alternatives for improving and upgrading the ordinary network. It is refusing to make a comprehensive study, a study which should be based on verification of actual transport and infrastructure needs on the east-west axis (where the average distance travelled does not exceed 80 km), along the lines of the technical discussions launched in 1997 with the Interministerial Committee on Transport and the Environment, which indicated quite different priority action areas, such as the quadrupling of the Turin-Chivasso and Milan-Treviglio lines, and perhaps also the Rovato-Brescia line (the only stretch of the Milan-Verona line where traffic flows justify action), as well as ancillary freight-orientated projects, such as construction of the so-called *Mediopadana* dedicated freight line (on the main Casale-Mortara-Pavia-Cremona-Mantua-Monselice-Padua-Venice route).

Nor does the Government appear to realise that, in view of the timescales and cost of the new high-speed line, if this continental-scale objective is to be pursued, there are already alternatives such as the Paris-Strasbourg-Stuttgart-Vienna-Bratislava east-west route (Priority project No 17 on the TEN-T list).

Later in this memorandum, we will examine not only the Community legislation mentioned earlier but also the provisions of Decision No 884/2004/EC in order to establish whether the content and requirements of the latter have been respected, in accordance with Community law.

We will then attempt to demonstrate that the overriding criteria for selection of TEN-T priority projects, as frequently reiterated by commissioner Van Miert, coordinator of the TEN-T High-Level Group, (1, technical maturity of the project; 2, economic and financial viability; 3, environmental sustainability) have all been disregarded.

Finally, we will show how the speeding up of the authorisation process not only fails to respect Community rules but conflicts with the list of priorities set by the Franco-Italian Intergovernmental Commission on the Turin-Lyon line.

1. Infringements of the SEA and the EIA

1.1 The lack of SEA

The twelfth recital of Decision No 844/2004/EC explicitly refers to environmental assessment pursuant to Directive 2001/42/EC, as do new Articles 8(1) and (2) of Decision No 1692/96/EC, even though SEA was due to apply to TEN-T plans and programmes as from 21 July 2004.

It should be remembered that in Italy the Turin-Lyon transalpine link was incorporated on 21 December 2001 in CIPE Resolution No 121/2001 'First Strategic Infrastructure Programme', which means that it is *automatically integrated* in the General Transport and Logistics Plan for January 2001 (within the meaning of Article 1 of Law No 443/2001, the so-called 'Objective Law').

The General Transport and Logistics Plan was approved by Decree of the President of the Italian Republic on 14 March 2001, a solemn act which, by approving the General Transport and Logistics Plan, provided that the SEA should become the *compulsory way forward for all projects*.

However, the First Strategic Infrastructure Programme (CIPE Resolution No 121/2001), which is a model and an operational instrument for carrying out large-scale works which are 'useful' to the country, was not subjected to any assessment as prescribed by Directive 2001/42/EC.

Thus the Turin-Lyon and east-west high-speed project was not subjected to a Strategic Environmental Assessment even though it was prescribed by Italian law in anticipation of the incorporation into Italian law of the SEA Directive (which has not yet happened).

At this point it should be remembered that when we refer to the 'First Strategic Infrastructure Programme' (CIPE Resolution No 121/2001) we are talking about an intervention instrument which in 2001, according to the Government's initial calculation, was intended to lead to the execution of 80 projects to the value of EUR 125 billion.

However, according to an updated, and undisputed, calculation made by the Studies Office of the Chamber of Deputies, with the collaboration of the CRESME research institute (a leader in the building field in Italy) and the NOVA Institute, the Programme now (May 2005) envisages, following a more accurate analysis, 235 projects, whilst the full range of interventions amounts to 531 projects, costing a total of EUR 264 billion.

It is easy to see that CIPE Resolution No 121/2001 is anything but a programme of interventions based on a serious financial and technical (transport and infrastructure) evaluation of the country's priorities.

Not only is there no general planning and programming framework subject to environmental impact assessment but, as Maria Rosa Vittadini (Director-General of the EIA Directorate at the

Environment Ministry until mid-2002 and currently lecturer in transport planning at the Planning Faculty of the Università degli Studi di Venezia IUAV) points out in a paper on the subject, the decision to construct a high-speed line also conflicts with the planning and programming guidelines of the Franco-Italian Intergovernmental Commission (IGC).

As Vittadini notes: *'In 2000, the IGC Report was submitted to the two governments. Among the concluding recommendations of the Report the following salient points at least are worthy of note:*

- *the need to study in greater depth the estimates of demand for and financial profitability of the works, matters on which the representatives of the French Ministry of Finance held significantly less optimistic views than the Economy and Finance Working Group;*
- *the need to establish a reliable and binding framework of transport policies capable of achieving an actual switch of road to rail traffic. In the absence of such policies, of which there was no sign in the manifestos of the two Governments, the investment in infrastructure would lead to an unacceptable squandering of financial, economic and environmental resources;*
- *the need to develop an "ad hoc" procedure for Environmental Impact Assessment of the preliminary plan, covering the whole international section from Montmélian to Turin. Only a positive outcome to that unified procedure could enable geognostic works which involve commitment, such as underground excavations, to proceed. In particular, the authorities of the Val di Susa community should have been considered through the use of much more thorough, systematic and effective means of information, involvement and consultation than those employed to date. In view of the differing French and Italian legislation, the environmental impact assessment procedure should have entailed a specific Franco-Italian agreement on the subject, in accordance with the Expo Convention on transboundary impact;*
- *the need to provide as a matter of urgency for improvement of current lines, and to build the new international line in phases by upgrading the two access lines before proceeding with the new tunnelling, on the assumption that the former would reach a high level of saturation well before the transborder lines.*

An agreement was reached at the Turin Summit in January 2001 to build the mixed passenger and freight line "which should come into operation when existing lines are saturated".

The agreement provides for continuation of the works purely on the first phase of the joint Franco-Italian section between St. Jean-de-Maurienne and Bruzolo whereas later phases, including the two "national" sections leading to the common part, are to be described in "additional protocols". Continuation of the works should make it possible to determine the exact route and the assessment procedures applicable in the two countries, the associated works and the extent of the studies needed to determine the joint Franco-Italian part of the link. Thus, by dissociating the joint part from the other two parts, this first decision betrays the essence of the Commission recommendations.'

Conclusions - In Italy, the First Strategic Infrastructure Programme (CIPE Resolution No 121/2001), which includes the high-speed Turin-Lyon transalpine link and is automatically integrated in the General Transport and Logistics Plan 2001, was not subject to an environmental impact assessment on plans and programmes, contrary to Italian law in force at the time, which anticipated incorporation of Directive 2001/42/EC. Furthermore, the submission and approval of the preliminary project conflict with the priorities established by the Franco-Italian Intergovernmental Commission and with its actual conclusions.

1.2 Distortion of the EIA and the Impact Assessment

The twelfth recital of Decision No 844/2004/EC explicitly refers to compliance with Directive 85/337/EEC and with the Birds and Habitat Directives (79/409/EEC and 92/43/EEC), as does Article 8(1) of the Decision, whilst the tenth and twentieth recitals and Article 5(g) of Decision No 1692/96/EC recall the need for environmental protection and consultation of public opinion in trans-national environmental impact assessment.

It is worth remembering that the strategic infrastructure contained in the First Programme (CIPE Resolution No 121/2001) stems from the Objective Law (Law No 443/2001) which provides for a simplified and accelerated EIA procedure for the preliminary plan, a procedure which is governed by Decree Law No 190/2002, the decree implementing the Objective Law.

Decree Law No 190/2002 provides: for the setting up of a completely inadequate *Special Committee* (given its numbers, operating methods and competencies) solely to examine *strategic infrastructure*; for the EIA procedure to apply to the preliminary plan, with no detailed scrutiny of possible alternatives and with pro-forma verification of the final plan; for the final decision on environmental compatibility to be adopted by a majority of the CIPE and not by the competent Ministries (Ministry for Environment and Territory and Ministry for Cultural Heritage and Activities); that they should produce a solemn autonomous act (such as a joint ministerial decree) for the *ordinary* EIA; and finally that no account should be taken, when deciding on environmental compatibility, of the observations made by individuals and associations representing environmental protection interests in the context of public awareness and involvement procedures, even though the latter are one of the benchmarks of European legislation.

The really serious point is that analysis of the most important *strategic projects* and associated environmental impact studies subject to EIA (including the Turin-Lyon project), which have been examined by environmental associations and groups of local citizens and authorities and assessed by technical experts and academics in the relevant fields, indicates studies which are lacking: studies concerning maximum expenditure for executing the project; economic, technical and environmental cost-benefit analyses; assessments of the direct and indirect effects of the projected works and their alternatives (right down to the zero option); credible programming scenarios and available project documents; environmental impact studies and studies of the whole town/countryside/environment picture and its links with the project. Basically, the preliminary plans submitted with the Environmental Impact Studies under the EIA procedure do not even meet the technical requirements of Law No 109/1994 on public tendering (better known as the Merloni Law).

And it was the Commission that reminded Italy that the Community directive had not been respected in terms of depth of detail of the plans or in terms of public consultation procedures, which are one of the foundations of European law.

On 20 April 2004 the European Commission published the fact that it had initiated an infringement procedure against Italy and on 18 October 2005 that it had sent an additional reasoned opinion concerning the infringements of Community EIA law contained in Decree Law No 190/2002, relating to failure to update the environmental impact study and to incorporate it into the final design phase, prior to the issue of construction permits.

As regards the Lyon-Turin transalpine link, in December 2003 the CIPE (Resolution No 113/2003), following the EIA procedure laid down in the *Objective Law*, approved 77 essential requirements and 7 recommendations (!) concerning the border-Bruzolo section, whereas the plan for the Bussoleno-Turin section was withdrawn in order to avoid probable rejection by the Special EIA DV/592730EN

Committee of the Ministry for the Environment and Protection of the Territory, but it was subsequently re-presented and approved by the CIPE on 3 August 2005.

Let us look now at the main vices and defects of the Environmental Impact Study (EIS) submitted by LTF:

The overall impact of the transnational line and its associated works has not been calculated – As Vittadini observes, *‘The EIS submitted by LTF only relates to the Italian border-Bruzolo stretch of the ‘joint Franco-Italian section’ with no reference to the French part or to the whole panoply of related works. Only 8 km of the projected 52 km of base tunnel lie on Italian territory. In all, the Italian stretch from the border to Bruzolo covers 25 km, 70% of which is in tunnels.*

Therefore the progressive fragmentation of the project into unrelated parts is exacerbated, clearly avoiding Community EIA law, which explicitly states the need to assess the impact of the works in their entirety, including ancillary works. The environmental impact study for the Bruzolo to Turin section, submitted by Italferr on behalf of RTF at the same time as the FTL plan, was withdrawn without in any way affecting the authorisation procedures for the border to Bruzolo stretch.

Given the obvious unitary nature of the project between Montmélian and Turin, one might well ask how it was possible to carry out separate EIA procedures for the individual components of the project rather than assessing, if only at preliminary plan stage, the entire section, as recommended to the two governments in the IGC report. Especially in view of the fact that the amendments to the EIA procedure brought in by the Objective Law were introduced specifically to enable an impact assessment to be made of the preliminary plan, since it is a phase which is particularly amenable to alternative routeing and large-scale planning before the more costly and binding final plan stage is reached.’

It follows that, contrary to the provisions of Decision No 884/2004 and the recommendations of the Intergovernmental Commission, no coordinated assessment or public consultation procedure was undertaken, nor was any transnational inquiry held, all of which was desirable.

The environmental impacts are underestimated – It is worth dwelling on various aspects of the impact of the new line, which have been completely underestimated in the EIS drawn up by LTF: a) 70% of the 25-km stretch of new line from the Italian border to Bruzolo lies in tunnels and the amount of earth to be excavated to allow for the track covers 100 hectares, with an additional 48 hectares being used on site; b) the interference with the surface water of the Dora and Cenischia rivers and with the springs that supply the Bussoleno and Chianocchio aqueduct is acknowledged but not studied closely; c) with regard to the excavation and disposal of the rocks extracted from the three access tunnels (Foresto, Berno and Venaus), it is planned to transfer the rocks to the Esplosa site with a view to onward transfer to the enormous hole left by the Carrière du Paradis, formerly exploited for expanding the Moncenisio dam and building the A43 motorway; d) the EIS is more reticent about other temporary and permanent dumping grounds for tunnel waste, as is evident from the opinion of the Piedmont Region (DGR 68-10051 of 21 July 2003); e) the amount of material to be extracted is huge; there are about 12 million tonnes of tunnel waste from the Italian section and another 7 million tonnes to be dumped in France, with conveyor belts being used both on the Italian site and in the French quarry; f) a 1 km viaduct will spoil the Val Cenischia, one of the most scenic and environmentally valuable sites and, in terms of water resources, a most crucial area; g) the open route and the construction sites interfere directly with areas which are subject to Community and national restrictions (including various SCIs and areas which are protected for archeological and scenic reasons); h) ‘operating noise’, which is one of the most serious aspects of the new line, has been completely ignored, as the Piedmont Region opinion again makes clear; i) even elements

which interfere with and impact on the environment are described superficially and are not calculated precisely, apart from compensation for the high environmental impact of the line, which is set at 5% of the entire cost of the work.

Conclusions – The transnational Turin-Lyon rail link has not been fully subjected to the EIA procedure, nor has a coordinated international EIA procedure been initiated or a public consultation held in the two countries concerned. The preliminary plan, approved by means of simplified and accelerated EIA procedures under Decree Law No 190/2002 (which are the subject of infringement proceedings initiated by the European Commission, currently at an advanced stage), is woefully defective on fundamental environmental aspects and does not describe unitary nature of the project between Montmélian and Turin and the impact of the works associated with the connection to the Turin hub, the ordinary network and the freight interport. The project does not appear to meet the criteria and minimum standards laid down in Community EIA Directive 85/337/EEC or those of the Habitat Directive 92/43/EEC. Therefore, it does not comply with the technical maturity or environmental sustainability criteria recommended by the Van Miert group with respect to selection of *priority projects* on the new TEN-T list.

2. Priority action areas

New Article 5(f) of Decision No 844/2004/EC indicates some of the priorities of the TEN-T: optimisation of the capacity and efficiency of existing and new infrastructure, promotion of intermodality and improvement of the safety and reliability of the network by establishing intermodal terminals and their access infrastructure; new Article 5(g) and (h) stress integration of safety and environmental concerns in the design of the European transport network and the development of sustainable mobility of persons and goods; new Article 19, which defines what ‘priority projects’ are, provides in paragraph (d) that they must improve the mobility of goods and persons between the Member States and thus also contribute to the interoperability of networks, and states in paragraph (f) that they must contribute to the sustainable development of transport by reducing environmental damage.

Furthermore, these stipulations are consistent with the Commission White Paper ‘European Transport Policy for 2010’, which calls for mobility policies and growth of GDP to be kept separate whilst also giving serious consideration to the modernisation and improvement of existing transport networks.

2.1 Cost-benefit assessment for the high-speed project: the national picture

In Italy, the high-speed passenger railway project, only nominally more palatable since 1997 when it was rechristened the high-capacity project, is an undertaking which, according to the predictions of its proponents (see Tables 1 and 2), is going to cost the Italian public almost EUR 60 billion (or, to be more precise, EUR 59 324 100 000, or more than LIT 118 trillion), without taking into account a good proportion of the associated works and infrastructure and interest during construction: EUR 30.170 billion for the north-south Turin-Milan-Naples line (source: Priority Investment Plan (PIP) of RFI SpA); EUR 29.154 billion for the east-west and Milan-Genoa lines (WWF calculations from various official sources). All this just to construct 1 500 kilometres of new line which would comprise less than 10% of the entire rail network.

In 1991, the head of Italian State Railways, Lorenzo Necci, and the advisor to TAV, Ettore Incalza (currently consultant to the Minister of Transport and Infrastructure, Pietro Lunardi), subscribed to the idea that the entire project (which at that time was limited to the east-west and north-south lines) would only cost the public LIT 26, 080 trillion (EUR 13 billion).

That projection of 13 years ago for the original project clearly underestimated the cost by a sum equivalent to around LIT 94 trillion (!), a figure which obviously includes an increase due to inflation but which represents an absolutely ruinous rise in costs which certainly cannot be justified solely by the expense, which at the time was neither calculated nor envisaged, of connections to hubs and links guaranteeing interoperability with ordinary lines, or by compensation for expropriation, mitigation payments and 'environmental compensation'.

If we add to those costs the EUR 22 billion estimated by RFI SpA for the Battipaglia-Reggio Calabria line, the southward extension of the north-south high-speed line, and the cost (EUR 12 billion) of the Brenner-Verona stretch, the northward extension of the north-south line, we are talking about EUR 94 billion (for works on 2 139 km of line: the length of the north-south and east-west lines and the stretches between Battipaglia and Reggio Calabria – 402 km – and between Verona and Brenner – 237 km). This is without counting the cost of the Novi-Novara-Domodossola-Simplon section (239 km), which have not yet been assessed.

In view of the unfortunate repercussions of this age-old problem it would be preferable, as indicated in an interview on 18 August 2003 with *Il Sole 24 Ore*, albeit only in relation to the Battipaglia-Reggio Calabria section, to have a radical rethink about the legislative, contractual, financial and planning aspects of the high-speed line rather than proceeding irresponsibly, as has happened since 2001 with the approval of the "Objective Law" (Law No 443/2001) and the first Strategic Works Programme (CIPE Resolution No 121/2001), and continually attempting to re-launch a project which is unsustainable technically (in terms of transport and infrastructure), financially and environmentally.

In view of these calculations and given the corruption of the economic, financial and contractual system and the unsustainability of social and environmental costs, it is clear that justification for the Italian high-speed programme has more to do with maintaining positions/equilibriums associated with financial and political gain from the project than with any transport and infrastructure assessments.

In this connection, it should be noted that as from 10 March 1998, the high-speed system has been managed by TAV SpA, a company wholly owned by FS SpA, itself an entirely public company which seven years ago bought up 57% of the stock held by 42 shareholders including banks, insurance firms and Italian and foreign credit institutions.

It should be pointed out that, however indulgent one might like to be, this project has absolutely nothing to do with a revival of rail travel, as its proponents like to claim. In fact, in the light of the constantly escalating cost of the high-speed system and the distorted contractual arrangements, this project is actually draining huge technical and economic resources away from improvement, modernisation and revival of the Italian rail network.

Table 1

TO-MI-NA	PIP 2003	PIP 2003	Delta
Turin-Novara	4 849	4 934	85
Novara-Milan	2 180	2 620	440
Milan-Bologna	6 435	6 464	29
Bologna-Florence	5 205	5 196	2011
Florence-Rome	442	442	
Rome-Naples	5 207	5 228	21
Turin hub	129	50	-79
Milan hub	73	73	
Bologna hub	1 200	1 284	84
Florence hub	1 490	1 496	6
Rome hub	700	703	3
Naples hub	390	391	1
Cost of capitalised structures	259	429	171
Contingencies	1 002	860	-142
TO-MI-NA	29 560	30 170	610

Source: Priority Investments Plan (updated to April 2004)

Table 2

Sub-sections (excluding TO-NO and NO-MI)	Construction cost	Infrastructure availability (according to Economic and Financial Planning Document 2003/2006)	Infrastructure availability (according to RFI Priority Investment Plan)
Lyon-Turin	9 036*	2012	
Milan-Verona	5 104.100**	2008	2011
Verona-Padua	2 856	2007	2011
Padua-Venice	439	2007	2006
Venice-Trieste	4 300	2007	
Trieste-Ljubljana	2 700***	2015	
Milan-Genoa	4 719****	2009	2010

WWF figures derived from various sources

*The figure given represents amounts solely attributable to Italy and is the sum of the 63% share (of the EUR 6.957 billion, CIPE Resolution No 113/2002) which Italy guarantees, under the agreement with France, for building the international section (equal to EUR 4.383 billion), plus appropriations for the Italian part of the transalpine section (EUR 2.278 billion, from the frontier to Bruzolo) and those projected for the Bussoleno-Turin section (EUR 2.375 billion) not including the appropriation, estimated at EUR 500 million, according to information leaked in connection with the CIPE meeting of 3 August 2005, for the Corso Marche link to the Orbassano Interport (figures taken from the second Situation Report regarding interventions under the Objective Law (July 2005), drawn up by the Studies Office of the Chamber of Deputies, and from RFI/LTF sources).

** This figure is taken from the second Situation Report regarding interventions under the Objective Law (July 2005) drawn up by the Studies Office of the Chamber of Deputies.

*** The cost of the Trieste-Ljubljana section is not identified by the RFI Investment Plan but derives from studies conducted by RFI for the design of the section in question.

**** Figure taken from CIPE Resolution No 78/2003.

TRANSPADANA RAIL LINK Lyon-Turin- Milan/Genoa- Venice-Trieste-Ljubljana	Unit cost
	EUR 29.154100 bn

WWF calculation based on figures from various sources: CIPE, Comitato Transpadana, Studies Office at Chamber of Deputies, RFI/LTF

The major beneficiaries of this haemorrhage of public money are a few large business consortia (associated with the Fiat group, Impregilo, Fintecnica - formerly Iri - and Eni) which, as a result of private contracts (which were all concluded in 1992 before the Community rules on international tendering procedures came into force) for contracting and sub-contracting work (contracts which at the time also involved the Gavio, Ligresti, Montedison and Impregilo of Romiti groups as general contractors) have obtained and still are obtaining limitless financial resources, disbursed or guaranteed by the State with no risk to the undertaking.

Successive governments from the '90s until now, faced with escalating public debt and budget collapse, have nevertheless decided to commit resources equivalent to three/four financial years (assuming an average of EUR 20 billion) to carrying out a high-speed programme at a time when, barring a reversal of the trend (which cannot be guaranteed by the high-speed works), Italy is seeing an increasing downturn in rail travel (the General Transport Plan estimates that if the current situation continues, the proportion of passengers travelling by rail will fall from 13-14% to 3% by 2010).

It should be remembered that in Italy only 6 363 km of the 15 923 km of rail network are dual-track and only 5 603 are both dual-track and electrified, whereas the dual-track network in France is almost as extensive as the entire Italian network (14 135 km or 44.6% of the entire SNCF network), and in Germany the electrified dual-track network is not much less extensive than its French counterpart (12 267 km or 43% of the entire network). This means that in Italy 84% of all rail traffic is concentrated on 6 000 km of line (35.7% of the total).

The high-profile re-launch of the high-speed project by the incumbent government is therefore entirely unjustified given the absence of serious feasibility studies based on secure financial resources and credible cost projections.

It has been shown that the very high cost of building new high-speed passenger lines, separate from the ordinary lines, using special construction criteria (gradient and radius of curvature) and, in the case of Italy, a supply which is different from that used by the existing network, could hypothetically be justified if it were shown that there is a demand from passengers over medium- to long-distance stretches (over 400 km).

However, on the east-west line in northern Italy, the average passenger journey is 80-90 km; this means that the decision to go for a high-speed system does not reflect user requirements and is taking resources away from improvement and maintenance of ordinary lines, entailing fewer services for the smaller towns and for those who travel short distances, like commuters.

And yet the economics do not add up.

In its report on the railways of 21 January 2004, the Court of Auditors criticised the fact that in only three years, between 2001 and 2003, the cost of the north-south high-speed line (Milan-Rome-Naples) had risen by more than 25% (+ EUR 7.262 billion) thus confirming the unsustainability of the project. By April 2004, as we have seen, the cost of the line had topped EUR 30 billion.

The money is not there to build the east-west line (Lyon-Turin-Milan-Venice-Trieste-Ljubljana) and the high-speed Lyon/Genoa-Basle-Duisburg-Rotterdam/Antwerp line. In the Programme Contract 2001-2005, RFI allocated EUR 482 million to each for design alone, when the cost of the entire line had provisionally been put at EUR 11.991 billion in that document and is currently pushing EUR 30 billion.

From a technical and political point of view (as regards transport and infrastructure), following the arrest of the managing director of FS and TAV SpA, Lorenzo Necci, in December 1996, the suspected corruption associated with the launch of the high-speed programme sparked a parliamentary inquiry into the high-speed project (Transport Minister Claudio Burlando) which concluded in July 1997 with disappointing results leading to a technical confrontation, during the period 1997-1999, between the Environment Ministry (Minister Edo Ronchi) and the Transport Ministry, the outcome of which was mildly positive but has not led to any decisions or political acts.

With the second Berlusconi Government, we are witnessing an abrupt trend reversal compared to that partial rethink; the high-speed project is being re-launched, starting with the contractual aspects, and is being expanded and consolidated as time goes on:

- the first programme (CIPE Resolution No 121/2001) on so-called strategic infrastructure and installations revives the construction plan for the east-west and Milan-Genoa high-speed lines, making completely hypothetical expenditure commitments;
- the “Objective Law” (Law No 443/2001) simplifies and speeds up the procedures (beginning with the EIA) for approving and authorising strategic infrastructure, these being set out in more detail in the implementing decree (Decree Law No 190/2002);
- Article 11 of Law No 166/2002 (attached to the Finance Act 2002) repeals Article 131 of the Finance Law 2001 (see below) and restores ‘without resolving the continuity problem’ the contracts and sub-contracts awarded;
- Article 8 of Law No 112/2002 sets up Infrastruttura SpA (ISPA), a finance company owned by the Cassa Depositi e Prestiti, an entity created ad hoc to *externalise* commitments deriving from public investment in infrastructure and large-scale public works and to securitise the credit to be used for such investment;
- Article 75 of the Finance Act 2003 (Law No 289/2002) stipulates that ISPA is to finance as a matter of priority the high-speed/high-capacity system ‘including by constituting one or more separate capital accounts’, and also places ‘on the State the burden of servicing part of the debts of Infrastruttura SpA’;
- in March 2003, the various General Contractors, acting under the aegis of TAV SpA and Italferr, submitted the preliminary plans and environmental impact studies to set in motion the simplified, accelerated procedure under the strategic infrastructure legislation for the two high-speed sections (on the Turin-Lyon line), the high-speed Milan-Verona and Trieste-Ronchi dei Legionari sections, as part of the east-west project, and the fast Milan-Genoa line;
- in July 2003, the high-speed line from the Austrian border to Verona on the Brenner route was submitted.

As we can see, despite the absence of studies and assessments to support financial viability, first the legislative and programming foundations were laid and then projects were approved without any serious environmental, social, economic and transport backing.

However, following Eurostat's comments on Italy's public accounts, the economic and financial knots of the high-speed financing arrangements seemed to be combed out in the Finance Act 2006 which, in the text of the draft law under discussion in the Senate, introduces an amendment to Article 75 of the Finance Act 2003 which, as we shall see later (paragraph 1.3) earmarks EUR 100 million from 2006 and a further EUR 100 million from 2007 for the State Railways in order to finance none other than the high-speed/high-capacity project.

The only genuine, albeit partial, rethink in relation to the figures, estimates and scenarios in this long-running and scandalous affair, a rethink which concerned contractual aspects due to the exorbitantly high cost of the project, was in 2001 when Parliament approved Article 131 of the Finance Act for that year (Law No 388/2000), on a proposal from the Italian Government (Minister of Transport Pierluigi Bersani), revoking the contracts and 'underlying relationships' in respect of the high-speed sections of the Milan-Genoa, Milan-Verona and Verona-Padua stretches still in the initial phase (but not for example in respect of the Milan-Turin section, which is now the subject of EU infringement proceedings).

As we have seen, this rethink has been *superseded* at a politico-institutional level by the decisions, laws and programmes approved by the XIVth legislature acting on a proposal from the government in power.

It should, however, be pointed out, on the technical front, that the Italian Antitrust Authority (AGCM) formally rejected the Government's interpretation of contractual relationships which had led to the annulment, in 2002, of the revocation of contracts for certain high-speed sections, stating that revocation of the contracts for the high-speed Milan-Genoa, Milan-Verona and Verona-Venice (now Verona-Padua) lines was absolutely essential in order to avoid unjustifiable financial burdens on the State, and that recourse to European tendering procedures was inevitable, given that the relationships in question were only at an early stage.

The opinion of the Antitrust Authority was endorsed very clearly at the start of the process through Parliament of Law No 166/2002, when a recommendation was sent by the Authority to the Presidents of the Chamber and the Senate, the President of the Council, the Minister for Economy and Finance and the Minister for Transport and Infrastructure. That recommendation asked the Government to withdraw the proposed annulment of the revocation of contracts laid down in Article 131 of the Finance Act 2001.

The grounds for that request were reiterated in the Authority's annual report for 2001, which states very clearly that:

- *'the envisaged annulment of Article 131(2) of Law No 388/00, entailing the renewed validity of contracts awarded for works not yet commenced, would evade the competitive tendering obligation prescribed by the relevant Community and national law. Furthermore, the Authority has stressed that the proposed annulment is incompatible with the general principles safeguarding competition (...), the Authority has repeatedly stated that competition between operators is the appropriate instrument for identifying those undertakings that are capable of performing works effectively in terms of both production and organisation, thereby ensuring that the relative costs are minimised';*

- *'the competition mechanism, based on objective, non-discriminatory, proportionate and transparent criteria and enshrined in Community and national law, is the most suitable competition mechanism for achieving the quality and efficiency objectives which are crucial for carrying out works on the high-speed system'*;
- *'finally, the Authority hoped that, if the legislature decided to retain the concessionary arrangements (...) the award of contracts and the consequent choice of general contractors would follow a competitive selection procedure in accordance with national law on tendering and the principles safeguarding competition'*.

The Authority's criticism of the contract system for the high-speed project could not be clearer and it was hardly unexpected.

It should be pointed out in this connection that the Authority had argued as early as 1996, in measure No 3526 of 10 January, that in cases where European competition law had been applied, *'respect for the competition mechanisms guaranteed by Directive 90/351/EEC has made it possible to make considerable savings for principals and, in the final analysis, for the general public. In this connection, it should be noted that the conclusion of contracts between TAV and general contractors prior to the entry into force of Directive 90/351/EEC has removed from the competition procedures governed by that instrument the award of contracts for the Milan-Genoa, Milan-Verona and Milan-Venice lines, the execution of which, although covered by firm contractual relationships, is still in the initial phase'*.

However, the warnings of the Antitrust Authority have not been heeded by past governments, with the exception of the Amato Government in the Finance Act 2001, nor by the present government.

This is despite the fact that the ANCE itself (National Association of Building Constructors) has been criticising the corruption of the high-speed contractual and financial system ever since 1996.

The ANCE (the largest Italian business association in the sector) in a document sent to the then Transport Minister, Claudio Burlando, on 24 October 1996, hoped that the model contract adopted for the high-speed project would be amended *'at least with respect to the sections not yet commenced'*, suggesting that TAV should acquire *'the design work from the concessionaire and award contracts for the remaining works subsequently by competition'* and maintaining that the consequences for the public purse would not be at all onerous (indeed the ANCE letter states that: *'A choice of this type could produce a saving for the Treasury, net of penalty payments at 3%, of LIT 4 trillion (at 1996 prices), by eliminating an intermediary - the General Contractor - who has proved to be less than efficient and very costly'*).

It should be remembered that the high-speed rail project is now financed entirely by the State and that wherever possible, for works not yet under way, the government has a duty to rescind contracts which are too costly. Again, the ANCE confirmed as early as 1996 that *'the high-speed project remains an investment which is almost entirely chargeable to the Italian budget. In fact, the interest on 60% of all private investment is covered by the government until all works have started'* (as we shall see later, inter alia).

Again, the ANCE analysed the reasons underlying the failure of the exceptional operational decision which had led TAV to use general contractors, *'as being capable of ensuring and guaranteeing 100% the completion of the entire high-speed system, duly respecting the established timescales and costs'*, the failure being due to *'the many executive uncertainties, the delays in*

implementing the project and the quantity of public money allocated to the project over and above the initial amounts'. In the document cited, the ANCE produced calculations to show that as early as 1996 the costs estimated by Ferrovie dello Stato for building the Italian high-speed lines had gone up by 56% (27% in real terms) 'compared with the figures in the agreement (1991)'.

The ANCE document drew attention to the fact that *'the General Contractor model, as tried out in the High-Speed Programme, has not produced the hoped-for beneficial effects'*. The ANCE stressed that the overall cost of the Italian high-speed project suffered from the fact that: *'a) the costs laid down in the agreements include a General Contractor fee which turns out to be of the order of 20%; b) the discounts offered by individual undertakings for carrying out the works accrue to the GC and not to TAV'*. Accordingly, the ANCE suggested to TAV, as we said above, that it should use competitive tendering on the basis that any disputes would be less costly than using General Contractors as intermediaries, pointing out that *'by managing projects through ordinary tendering procedures (...), Ferrovie dello Stato would enjoy the competitive tendering discounts that are currently pocketed by the General Contractors'*.

The ANCE leapt to the defence of small and medium-sized undertakings in the sector which had been marginalised from the high-speed project and denied the lion's share by the large business consortia which are now part of the AGI - large businesses association - rather than the more traditional trade association.

Finally, the Court of Auditors examined the substance of the cunning *externalisation* attempted in the XIVth legislature with Infrastrutture SpA.

In its report on the State Railways drafted on 21 January 2004 and annexed to Decision No 5/2004 (concerning 'Examination of the use of ministerial powers of guidance and vigilance over Ferrovie dello Stato in relation to strategic, managerial, economic and financial objectives'), the Court of Auditors stressed that private loans guaranteed by Infrastrutture SpA (ISPA), which is primarily concerned with the high-speed project (Article 75 of the Finance Act 2003), will start to have serious repercussions on the State budgets from 2009. In fact, by that stage it is envisaged that *'the State will intervene with considerable sums to ease the burden of debt servicing incurred by Infrastrutture SpA'*, on account of the loan for construction of the high-speed system secured by the latter on the banking and capital markets in respect of a project which is valued at between EUR 60 and 94 billion, as we have seen.

The Court of Auditors challenges the *ISPA solution* (in Article 75 of the Finance Act 2003, Law No 289/2002) which alleviates, but fails to resolve, the problem of the burdens for the public accounts due to the continual escalation of the costs of the high-speed/high-capacity system. As the Court of Auditors (CA) states in its Report, it disputes: *'the logic of that provision [which] is that the State does not finance the construction of the railway infrastructure (in this case the high-speed/high-capacity network) so the railway management company has to apply for loans in order to build it; however, profits on 'sales' will not be enough to repay the debt contracted, so the State will have to intervene to indemnify the management company'*. In essence, it is the State once more which has to assume the business risk of financing the Italian high-speed/high-capacity system by fully guaranteeing the cost of servicing the loans made by ISPA to private entities.

As the Court of Auditors pointed out in its Report, this means that financing the high-speed/high-capacity system will be onerous for the State budget as from 2009, the year from which the State is due to intervene with *'considerable sums to ease the burden of debt servicing incurred by Infrastrutture SpA'*.

All this compounds a situation in which the cost of building the high-speed system is spiralling out of control and increasing out of all proportion the massive investment of RFI SpA, which by April 2004 amounted to EUR 168.4 billion.

With regard to ISPA, it seems significant that on 18 March 2005, when stating the grounds on which the Commission blocked the Italian public accounts for 2003 and 2004, Eurostat included among the seven major items on which it sought clarification from the Italian Government one which referred, according to Il Sole 24 Ore of 19 March 2005, to the '*sectorial classification of companies controlled by public administrations (ISPA)*'. There is no doubt that the subject of Eurostat's challenge was the high-speed financing mechanisms: according to Il Sole 24 Ore, '*in this case there are doubts about the accuracy of certain data and about the role of ISPA in financing TAV*'.

When, on 23 May 2005, Eurostat finally blocked the Italian public accounts for excessive deficit in 2003-2004 (3.1%) and for allowing public debt to rise above the ceiling of EUR 106 billion, it reiterated, as Il Sole 24 Ore reported the following day, that the ISPA operation was going to affect public accounts and lead to an increase in public debt of EUR 7.5 billion, equivalent to 0.6%; it also feared that there would be further repercussions for the deficit in future if the State were forced to cover the debts which RFI and TAV SpA were unable to cover.

The outcome of Eurostat's severe criticism was that the government had to make a logical about-turn and in the draft law on the Finance Act 2006 it was forced to introduce an amendment to Article 75 of the Finance Act 2003 (which, as we saw above, entrusts the high-speed rail project to ISPA) in the shape of a provision aimed at *scrapping* the ISPA mechanism and at financing via FS SpA, or companies connected with it, unspecified *operational facilities* for the high-speed system to the tune of EUR 100 million as from 2006, with another EUR 100 million from 2007 and a fifteen-year expenditure ceiling.

This financing, according to the technical report on the Finance Act 2006, is destined for the Milan-Genoa and Milan-Verona high-speed lines (which at today's prices are set to cost EUR 4.7 and 5.1 billion respectively), lines which have been shown to be unprofitable and for which the State will have to contribute 85% and 70% of the costs, respectively (as indicated by the joint calculations of RFI SpA and ISPA) - all of which goes to confirm the accuracy of the statements made by Eurostat, which has repeatedly asked the Italian Republic not to *conceal* the burdens on the public accounts (the lines in question had been included in the programme to issue TAV bonds for the Turin-Milan-Naples line, by decision of the CIPE of 18 March 2005).

Conclusions – The system for financing the Italian high-speed passenger rail project (and hence also the transnational Lyon-Turin link) through the company Infrastrutture SpA has been one of the main reasons for Eurostat not certifying the Italian national accounts for 2004 and for the intervention of the European Commission due to infringement of the Stability Pact.

2.2 Cost-benefit calculation for the transnational Turin-Lyon high-speed link

It is again Vittadini who points out, in connection with demand on the Turin-Lyon line for the purpose of assessing the costs and benefits of the project, that '*the estimates of passenger and freight demand for the new link derive from the report of the Economy and Finance Working Group of the Intergovernmental Commission submitted in 2000.*

That report is the most realistic picture available of the sums at stake. It is true that LTF has conducted further studies of demand which are more favourable to the new line. However, when examined by the Audit Commission of the French Government, those results revealed major inconsistencies and arbitrary assumptions. When recommending that commencement of the new line should be delayed, the Audit Commission observed in connection with estimated demand for the Turin-Lyon line: "All in all, these statements suggest that we should take a very cautious view of the passenger traffic projections for 2015 which, in their present state, appear to be inadequately substantiated and based on highly optimistic assumptions." With regard to freight "the mission found that provided that the Aiton railway motorway platform is retained, limited adjustments to the French access routes alone could enable freight to flow until 2020 without any significant increase in traffic in the road tunnels by comparison with flows registered recently." To conclude, "it is therefore highly unlikely that the existing infrastructure will be saturated by 2015 and it is still too early to predict when it will be."

In 1997, the Modane crossing carried 10.1 million tonnes (Mt) per annum of freight and 1.3 Mt/annum of passenger traffic, predominantly (60%) at night.

The assumptions made by the Intergovernmental Commission Working Group as a basis for estimating future traffic relate to two alternative scenarios of demand for transport being 'linked' to economic development:

- *one "basic" scenario characterised by a "cautious" annual rise in European GDP of 1.8% up until 2020 and 1.5% thereafter. Over the same period, there would be sustained growth in foreign trade of 4% per annum;*
- *an "optimistic" scenario characterised by annual growth of Italian and European GDP of 2.4% until 2020 and 1.5% thereafter.*

The estimate of passenger and freight traffic takes both scenarios into account; the estimate of freight traffic is based solely on the 'basic' scenario.

The demand projection, developed by Alpetunnel when studying the two horizons of 2015 and 2025, compares three possible future scenarios:

- *the trend scenario, without the new line and with current trends continuing;*
- *the reference scenario, without the new line but upgrading the old line and completing the Swiss Gotthard and Loetschberg rail crossings;*
- *the project scenario, with completion of the new Turin-Lyon line.*

According to those estimates, daytime passenger demand will increase by 2015, in the reference scenario, to 1.8 million passengers/annum, and will increase to 2.6 million if the project is carried through. Night-time passengers with or without the project will remain basically the same. Execution of the project would make it possible to 'switch' a very modest amount of passenger traffic to the railway: just over 800 000 passengers a year, of whom a minority (35%) would be removed from the roads.

Much more significant, quite clearly, is the problem of freight traffic. The economic growth scenarios referred to above point to a very sustained level of growth in overall freight traffic between Italy and the rest of the world (+3.6% per annum). In the trend-maintaining scenario, the overall level of traffic over the alpine arc between Ventimiglia and Chiasso is set to double from 77.1 Mt/annum in 1997 to 145 Mt/annum in 2015 and rise to 200 Mt/annum by 2025. The rail share of that traffic is therefore predicted to increase in absolute terms from 29 to 48 Mt/annum by 2015, but the railways' modal share of total traffic will decrease from 38% to 33%.

Without the project and with no work on the existing line, but taking into account completion of the Swiss Gotthard base tunnel and the new Loetschberg base tunnel, demand for the Modane crossing is predicted to reach 12.1 million tonnes/annum.

In addition to the improvements to the existing line and completion of the new Swiss crossings, the reference situation assumes a surcharge of EUR 100 per lorry for road vehicles. This increases rail demand substantially, so that it reaches 16.9 Mt/annum for Modane.

In the project scenario, completion of the Turin-Lyon link brings the traffic predictions for Modane to 21.1 Mtonnes/annum. The maximum capacity of the current line, put at around 20 Mt by the two rail companies, would therefore be exceeded, but only just. Thus in 2015 there would be the problem of saturation of the current line and hence of construction of the new one. In this connection it should be noted that the Economy and Finance Working Group report points out honestly that for 54% of traffic the difference in journey length between the Swiss crossings and the Modane crossing is less than 50 km and mostly favours the Swiss crossings. Nevertheless, in this situation of objective uncertainty the attribution model has been calibrated to give the Modane crossing over 90% of cases. This clearly makes the problem of saturation of the old line much less dramatic and puts off to a much later date the need for building the new line.

Alongside these estimates of demand, it is worth remembering the Alpetunnel study on the technical and economic feasibility of a railway motorway by 2010, assuming no capacity restrictions and, quite unrealistically, that the new line is built by then. The results of introducing a railway motorway service appear debatable, at the very least. In fact the growth in freight traffic predicted in the project scenario is based to a large extent on the introduction of the EUR 100 lorry charge referred to above. In order to avoid that surcharge some road freight, rather than switching to rail transport, could use the railway motorway for the alpine crossing and remain on the road before and after, thus greatly reducing the benefits of reduction of externalities. Since the desirability of the project is based precisely on reducing externalities, it must be concluded that the presence of the railway motorway would further undermine the feasibility of the new line.

Finally, it should be remembered that the report submitted to the governments by the IGC in 2000 proposed carrying out the project in phases.

In the first phase, the construction of a single bore tunnel would be sufficient and would provide a transport capacity of between 40 and 55 million tonnes. For reasons of security, trains could have automatic guidance mechanisms. Only later would it be necessary to make a second bore, when the increase in demand had actually justified it. This was a deliberate attempt to reduce the risk due to extreme uncertainty about traffic demand. Despite being reasonable, the idea of phased construction was immediately rejected when the first decisions were taken after the report had been submitted by the IGC to the two governments.

The impact study submitted by LTF considers phased construction only to reject it on all counts, including environmental ones.

The following table summarises the projections of demand and highlights various critical aspects of the project:

- the complete irrelevance of constructing the new line in terms of reducing road traffic and transferring it to the railways. With or without the new rail link, the modal split gives the railways around 40% of traffic, with the roads still having a 60% share;
- the amount of rail traffic with or without the Turin-Lyon link will remain unchanged.

In this connection, the Working Group states that ‘the Turin-Lyon project produces virtually no modal switch. The extra 3.2 million tonnes carried if the project is executed are due basically to rail traffic switching from Switzerland to France. In fact, it is clearly the general measures to improve the railway system as a whole that will lead to an increased market share.’

Overall assessment of the rail improvement measures in the western alpine arc

Scenario	Rail traffic in 2015 in Mt	Modal share	% increase in rail traffic
1997	29.4	38.10%	
Trend	48	33.10%	63%
Reference (excluding Swiss projects)	55	38%	14.6%, of which 5% due to EUR 100 tax
Reference (including Swiss projects)	56.3	39%	2.30%
Project (Reference + Lyon-Turin)	56.8	39.20%	0.90%

If we also examine the freight traffic growth targets projected by the Alpetunnel planners in relation to the overall load potential of the rail crossings (as was done by Andrea Debernardi and Giorgio Dahò of the Polinomia Society of Milan in a paper on the Alpetunnel Turin-Lyon project in 2001) we realise that, by fully exploiting the current potential of the dual-track transalpine lines (Ventimiglia, Modane, Domodossola, Luino, Chiasso, Brenner, Tarvisio, Villa Opicina) and by using a figure therefore of 220 trains/day - which also includes the Genoa-Ventimiglia line currently being upgraded - there is an overall potential of 1 410 trains/day, with a residual capacity of 746 trains/day for freight which, when added to the figure of 255 trains/day for 1996, gives a total of 1 001 freight trains/day, enough to achieve the ambitious target of 180 million tonnes of rail freight per year, indicated by the Alpetunnel planners as a hypothetical goal for 2015.

If we then consider the operational objectives of the high-speed passenger rail project, we realise that, given the low demand, the operating targets set by LTF are also completely unrealistic: a fast train will never take 1½ hours to cover the distance from Lyon to Turin (today it takes 4 hours), nor is it credible that it will take 3 hours from Paris to Turin (today it takes 5½ hours). More realistically, according to the forecast of Andrea Debernardi, there will be a time saving of no more than 50 minutes.

Going on to the matter of costs, Vittadini observes that: *'the investment required for the St Jean-de-Maurienne to Bruzolo section has been estimated at EUR 6.695 billion (updated to 2003). Compared with the estimates in the IGC report of 2000, which referred to an investment of EUR 5.9 billion, there has been a 17% increase in just 3 years.*

On the basis of the "Memorandum of Understanding" signed on 5 May 2004, Italy will bear 63% of the cost and France 37% (as part of the financing expected from the European Union for the transnational section). It has already been said that this unequal division is a clear indication of the French Government's lukewarm attitude and on the other hand of the very strong pressure from the Italian Government.

The distribution of the EUR 6.695 billion between the different types of work is set out in the diagram below. The annual management cost for the new line amounts to EUR 64 million, including operation and maintenance of rolling stock, equipment and the line.

The CIPE Decision of 3 August 2005, approving the Turin-Bussoleno section with the changes requested by the Region, states as follows: "Approval, with specifications, of the preliminary plan for upgrading the Turin-Bussoleno line, part of the international section of the high-speed/high-capacity Turin-Lyon link, costing EUR 2.375 billion. The financing of the works shall lie entirely with RFI and shall be evaluated in the Programme Contract 2001/2005."

In order to arrive at the actual cost of the new line between Turin and Montmélian it would be necessary to total the EUR 6.995 billion plus the EUR 2.375 billion for the Turin-Bussoleno section plus the investment needed for the Montmélian-St. Jean-de-Maurienne section and finally the investment needed for the Lyon-Montmélian stretch, which is not yet known.

The analyses of financial profitability of and socio-economic return on the investment conducted by the Economy and Finance working group in respect of the Franco-Italian section between St. Jean-de-Maurienne and Bruzolo have been very pessimistic. The working group notes that "From the financial point of view, the operating ratio is greater than the unit; this means that even if, due to the high unit cost of the project, the net present value is negative and therefore does not guarantee a return on the initial investment, it is expected that the operating revenue-cost ratio will be positive." It also notes that "from the socio-economic point of view, the result obtained, in addition to being clearly dependent on the chosen discount rate (some members of the group maintained that a zero rate should be assumed for intergenerational income and outgoings) is strictly dependent on the assumptions made concerning external costs; although the latter are limited solely to externalities which can be expressed in monetary terms, they become instrumental in producing a positive outcome. The reference values used provide for two scenarios of external effect impact and two levels of discount rate for the Actual Net Value; in both cases the results are negative." Enough said.'

Conclusions – The preliminary plan for the Turin-Lyon link does not seek to optimise the capacity and efficiency of existing infrastructure, by interconnecting it with new sections where necessary and promoting intermodality, and does not pursue the objective of improving the safety and reliability of the network and reducing damage to the environment, as required by Decision No 884/2004/EC. Nor does it offer a serious and detailed examination of the economic and financial viability of the project, or any less environmentally damaging alternatives, as laid down in Directive 85/337/EEC. Therefore it does not meet the economic and financial viability and environmental sustainability criteria used by the Van Miert High-Level Group when selecting the *priority projects* for the new TEN-T list.

3. Interoperability and interconnection with the existing network

Decision No 884/2004/EC lays down, in the new Articles 5(a), (b) and (c) of Decision No 1692/96/EC, that the 'priorities' must include: the construction of transfrontier sections to provide links and interconnections with the national networks based on criteria of interoperability on major routes (a) and lines adapted for freight transport (c); new Article 10(3) on the 'characteristics' of projects, also relating to Article 10(2), which refers to the high-speed network, provides that conventional passenger and freight lines must ensure interoperability of the network.

3.1 Interoperability: the Turin-Lyon line

It should be noted in this connection that the original plan for the transfrontier Turin-Lyon line did not provide for a link involving the transfer of freight to road using the Orbassano interport, which was only considered later with the projected but not yet finalised design, or the financing (the content of the CIPE Decision of 3 August 2005 is still not known) of the Corso Marche crossing (the cost of which has been estimated at EUR 500 million).

This is one of the inherent faults of the Italian high-speed passenger system which, when assessing the cost of the various high-speed sections, only considers the construction of the lines and not interoperability and interconnection with existing lines or links with intermodal platforms.

The fact that the plan for the high-speed Turin-Lyon line provides no interconnection with the freight line and the Orbassano interport is particularly serious and demonstrates the superficiality of the plan and the true aims of its proponents.

As the plan is currently drawn, freight trains would have to cross Turin using the rail link, thus impinging on the high-speed passenger line and causing congestion of the hub, thereby ignoring the objectives of interconnection and interoperability with a view to developing intermodality.

3.2 Interoperability: the Italian high-speed system and Europe

The European rail network is characterised by a lack of homogeneity which, when added to the absence of a market in means of traction capable of accessing the entire European network, is impeding development of intermodal transport. Just in Europe of the 15, the following differences can be observed:

- a) 5 different systems of traction: Italy, Belgium, Spain 3 kV DC, France and the Netherlands 1.5 kV DC, Austria, Germany, Switzerland, Norway and Sweden 15 kV and 16 $\frac{2}{3}$ Hz, Great Britain 0.65 e 1.2 kV DC, Portugal and Finland 25 kV and 50 Hz;
- b) 14 signalling systems;
- c) difference in gauge between France (1 434 mm) and Spain (1 672 mm) and between Sweden and Finland;
- d) limits on length and weight of trains. These vary enormously between the various countries and within the same country. The constraints relate to the characteristics of the network: line modules, train capacity, resistance of couplings, operational length of platforms at terminals;
- e) different clearance height of tunnels requiring the use of special rolling stock in the case of height cube type containers or rolling roads.

To take the Spanish high-speed line between Madrid and Seville: it is mixed use, carrying both passengers and freight. There is no integration between the conventional and high-speed networks due to the difference in gauge, which is 1 672 on the conventional network and 1 435 on the high-speed network. The supply voltage on the two networks is also different: 3 kV DC on the former and 25 kV and 50 Hz on the latter. It should also be noted that the supply voltage differs for the Spanish and Portuguese networks.

The French high-speed network is dedicated to passenger transport. Its characteristic gradient is 35 in 1000, whereas the gradient for a mixed line is 12.5 in 1000.

The German solution appears to be different in that for 974 km of high-speed line they have used 548 km of pre-existing line. The network carries passengers and freight and the supply is the same as for the conventional line.

As far as the Italian high-speed system is concerned, it should be remembered that at session No 3 on 16 January 1986 the Railways Board decided that 'provision of transport by the Authority will be structured so as to provide high-speed services by building a special system'.

The high-speed system in Italy will commence with the Turin-Verona and Milan-Naples lines. Later the Milan-Genoa, Verona-Trieste and Battipaglia-Reggio Calabria segments will be integrated. Despite the declared uniformity of the 'system' there are two different operating modes. The Milan-Naples line is regarded 'intrinsically' as a dedicated passenger line used only residually for 10 freight routes initially and 50 when operating at full capacity. The new route is composed of segments with different characteristics: the Milan-Bologna section is flat and in the open and the 300 km/hour section will account for 155 km of its 214 km length.

The Bologna-Florence line has the characteristic elements of a mountain crossing, being mainly in tunnels where the maximum speed is 250 km/hour and the gradient 18 in 1000. The Florence-Rome section allows for a maximum speed of 250 km/hour but the tunnel section is 54 m² and does not allow combined accompanied transport.

The Rome-Naples segment allows 300 km/hour to be reached over 175 km of its 224 km length. The characteristic gradient for this last stretch is 21 in 1000 and, contrary to Law 137/89 on the major European rail networks, approaches the standard for the dedicated French track, discriminating heavily against freight traffic. However, 42% of the Milan-Naples line will allow travel at 300 km/hour.

According to its proponents, demand for the Turin-Verona line is split equally between passenger and freight traffic and it will therefore carry mixed passenger and freight traffic. To be truthful, the simulated data provided by SIMPT and given in the planning background to the environmental impact study which follows the initial plan indicate that there will be a minute increase in freight transport on the new line: by 2010 the increase will be 0.3% with full infrastructure in place. On the Turin-Milan section it is possible to reach 300 km/hour over 113 km of the 147 km length.

The 268 km Milan-Mestre section will permit 300 km/hour over less than half its length. To the east of Venice, the route as far as Ronchi dei Legionari is in the preliminary design phase: from Ronchi to Trieste the route was due to be in tunnels for 90% of the way in an area of karst, and was rejected by the Ministry for Cultural Heritage and Activities on grounds of environmental incompatibility.

The chosen supply system for the Italian high-speed system is 2 x 25 kV and 50 Hz single-phase, whereas the conventional network uses 3 kV DC.

This decision will mean that, in order to allow interoperability between the old and new lines, it will be necessary to use dual-supply engines (by modifying current locomotives) and to modify current carriages to be used on the high-speed line (multi-current rotary converters).

For information purposes it should be noted that our network confines the 25 kV - 50 Hz system to Ventimiglia. The current interconnections concern the 15 kV - 16.7 Hz system at Chiasso and Brenner.

Finally, and in contrast to the French and Spanish high-speed lines where locomotives use a 25 kV supply over the entire length, Italian locomotives will have to offer equivalent performance on the 25 kV system and, on the Florence-Rome section, on the 3 kV DC system. To be honest, it can be said that technically the problem does not exist in that the new TGV-Transmanche connecting Paris, London and Brussels is supplied at 25 kV and 50 Hz (France), 3 kV DC (Belgium) and 750 v DC with a third rail (Great Britain, where DC electrification is restricted to the BR network south of London, the supply to the north being 25 kV and 50 Hz).

Therefore, in order to guarantee the genuine operational status of Corridor 5, a goods train leaving Barcelona will have to change locomotive at the Spanish border or have a dual-supply locomotive. At the French border there would have to be a complete change of bogies due to the different gauge.

Travelling from France on the Trieste-Ljubljana-Budapest-Miskolc-Nyregyhaza line, one arrives at Zahony, 1 km from the Ukrainian border, and in this city, which is the biggest freight transshipment area in eastern Europe, the train would have to have a completely new set of bogies, since the Ukrainian gauge is 1 524 mm.

It seems superfluous to add that in terms of operating efficiency the lines from Trieste to Kiev are back in the Dark Ages.

This patchwork infrastructure, which demands a change of engine and staff at nearly every frontier and considerably reduces the network economies of the freight rail system, is what led to the interoperability directive in March 2001. The objective of Directive 2001/16/EC of the European Parliament and of the Council is the unification of the networks and of technical specifications for rolling stock. The technical specification for interoperability (TSI) will be drawn up by a body representing the railways and the railway industry.

Finally, it should be remembered that the study made by the Group of Experts on the High-Speed Project led to unanimity on one point: the need for a Freight Plan.

The Plan has never materialised, and FS have dismantled the agreements with private companies and railways, thereby alienating the participating interests they had in the sector: no more Contship Italia, no more Saima Avandero (the former went to the Germans and the latter to the Belgians), no pool of resources for chemicals and hence for private trucks, no support for the vehicle logistics sector, no agreements with DB, caution with SveRail, PolRail and the Hungarian railways.

Conclusions – The preliminary plan for the transnational Turin-Lyon link does not promote links and interconnections in the Italian national network and interoperability with major European routes, as required by Decision No 884/2004/EC. Therefore the project cannot even be said to comply with the criterion of technical maturity which is a feature of the *priority projects* on the new TEN-T list, according to the selection criteria laid down by the Van Miert High-Level Group.