

**Response to questionnaire for:  
Assessment of strategic plans and policy  
measures on Investment and Maintenance in  
Transport Infrastructure**

**Country:  
Austria**

## 1 INTRODUCTION

The Austrian transport networks can be considered as highly developed: Austria is among the best equipped countries in the EU (measured by infrastructure length per capita). The quality of infrastructure can be considered as high: Most of the international connections through Austria (the TEN-T network) are constructed as a motorway or an expressway as concerns roads, or electrified in case of railways.

For railways Austria is realising an ambitious high performance network. The goal of this network is not to enable a maximum travelling speed but to combine sufficient speed with sufficient capacity. The network is planned to be a combined one, both for passenger and freight. This concept is more suitable for the special structure and the morphology in Austria than an isolated high speed concept. The maximum travelling speed for trains in Austria is 200 km/h, in future planned to be 230 km/h, but not to go beyond that.

The great challenge for railway infrastructure development in Austria is to realise high performance tracks for the Alpine crossing: A low gradient of the tracks shall enable efficient freight transport; the speed for passenger transport also shall be in a dimension of 200 km/h. The existing tracks of the Alpine crossings are partly far off these criteria (like on Brenner and Semmering). The only solution for these Alpine crossings is the construction of base tunnels, and the projects of Brenner Base Tunnel, Koralm railway line and Semmering Base Tunnel can be considered the most advanced challenges to Austrian infrastructure policy. These investments bring Austria to the absolute top in the EU as regards infrastructure investments per capita. They also supported Austrian construction companies in becoming some of the most experienced ones in tunnelling worldwide.

Remaining bottlenecks in the truck road networks are connections to eastern and northern neighbouring countries (mainly to Czech Republic and to Hungary); however there are concrete plans to close these gaps. The main Alpine crossings on road are constructed as motorways or expressways. Here no further significant investments are necessary. Additionally, according to the rules of the Alpine Convention (Transport protocol) it is not even possible to construct new high performance roads crossing the Alps.

Concerning inland waterways the river Danube is an important third mode in freight transport, supplying the heavy industry along the Danube with materials. The main problem of the Danube as an inland waterway is that the draught for vessels cannot be guaranteed over the entire year. Measures are planned to improve the situation.

**Total length of the Austrian rail network (ÖBB and private railways)  
by federal states 2011**

Federal state	Length of network ÖBB				Length of network private railways				Length of network TOTAL			
	overall length in [km]	mio per inhabitants	m per area [m/km <sup>2</sup> ]	m per settlement area [m/km <sup>2</sup> ]	overall length in [km]	mio per inhabitants	m per area [m/km <sup>2</sup> ]	m per settlement area [m/km <sup>2</sup> ]	overall length in [km]	mio per inhabitants	m per area [m/km <sup>2</sup> ]	m per settlement area [m/km <sup>2</sup> ]
Burgenland	185	0,6	46,6	75,4	86	0,3	21,7	35,2	271	1,0	68,3	110,5
Carinthia	554	1,0	58,1	239,0	-	-	-	-	554	1,0	58,1	239,0
Lower Austria	1.603	1,0	83,6	142,4	188	0,1	9,8	16,7	1.791	1,1	93,4	159,1
Upper Austria	893	0,6	74,5	136,1	107	0,1	8,9	16,2	1.000	0,7	83,4	152,3
Salzburg	242	0,5	33,8	169,1	87	0,2	12,2	61,0	329	0,6	46,0	230,1
Styria	764	0,6	46,6	154,6	224	0,2	13,7	45,4	989	0,8	60,3	199,9
Tyrol	419	0,6	33,1	279,9	57	0,1	4,5	37,8	476	0,7	37,6	317,7
Vorarlberg	117	0,3	45,0	197,6	13	0,0	4,9	21,5	130	0,3	49,8	219,1
Vienna	170	0,1	409,6	536,3	4	0,0	10,6	13,9	174	0,1	420,2	550,2
<b>TOTAL</b>	<b>4.947</b>	<b>0,6</b>	<b>59,0</b>	<b>157,7</b>	<b>766</b>	<b>0,1</b>	<b>9,1</b>	<b>24,4</b>	<b>5.713</b>	<b>0,7</b>	<b>68,1</b>	<b>182,1</b>

Date December 2011

Source: BMVIT; SCG, railway regulation 2009; own calculations

 HERRY  
2011

**Total lengths of road network by federal states and road categories 2010**

in [km]

	Federal roads			Secondary roads			Municipal roads <sup>3</sup>	Total lengths
	Motorways (A)	Expressways (S)	Total	Secondary roads B <sup>1,2</sup>	Secondary roads L <sup>2</sup>	Total		
Burgenland	80	63	143	569	1.192	1.761	3.923	5.826
Carinthia	243	18	260	1.137	1.607	2.744	6.500	9.504
Lower Austria	350	160	511	2.933	10.665	13.598	17.000	31.108
Upper Austria	299	-	299	1.578	4.410	5.987	20.549	26.836
Salzburg	144	-	144	675	683	1.359	3.700	5.202
Styria	308	151	459	1.589	3.348	4.936	12.900	18.295
Tyrol	189	34	223	969	1.273	2.242	8.650	11.116
Vorarlberg	63	28	91	296	503	799	3.000	3.891
Vienna	43	12	55	212	-	212	2.544	2.811
<b>Austria</b>	<b>1.719</b>	<b>466</b>	<b>2.185</b>	<b>9.959</b>	<b>23.680</b>	<b>33.639</b>	<b>78.766</b>	<b>114.590</b>

<sup>1</sup> former federal roads B; in Vienna community roads now

<sup>2</sup> Date: 1.1.2010

<sup>3</sup> Community roads date: 1.1.2000 (LA, S, ST, V), 1.1.2010 (VIE, B, UA, C, T)

Source: BMVIT, Statistik Straße & Verkehr 2011

## 1.2 Performance

On the roads there are congestions in urban areas. A good public transport system in the urban areas and a high share of public transport and non-motorized modes in the cities (e.g. Vienna) help to reduce congestions. Beside some projects of new road infrastructure in urban areas, measures like parking restrictions to reduce the effects of private motorized transport in urban area are increasingly under discussion.

Beside urban areas, where congestions also occur on the motorway network, the level of service in Austria – at least in comparison with other European countries - can be considered as high. On the main international axes the high load of freight traffic is becoming a problem. A peculiarity on some transit axes are the peak hours in tourism traffic, e.g. at the beginning of summer holidays. Especially at the axis to the southern countries significant capacity problems occur at a very limited number of days per year. The construction of new tubes of Alpine crossing tunnels has reduced the problem significantly, however some bottlenecks still remain.

In rail transport the overall quality of services can be considered as very high. Concerning punctuality ÖBB recently has reached top performance within the EU. Bottlenecks in the network, e.g. in urban areas lead to the consequence that additional services cannot be offered, even if the market would demand so. Here, the planned investments will improve the situation significantly.

## 2 MAJOR PROJECTS AND FUNDING

A description of key projects for railway is given in the document attached.

The main financing of infrastructure is done by public finances, on national, regional and local level according to the responsibility for infrastructures.

The scheme for infrastructure financing for the federal infrastructure is explained in detail in the presentation attached.

Maintenance policy: On the federal level the maintenance of infrastructure is under the responsibility of the infrastructure companies ÖBB-Infrastruktur AG (railways) and ASFINAG (roads). In principle the expenditure for maintenance has to be covered from the revenues of these companies, e.g. toll revenues.

For local and regional roads maintenance is covered by the budget of the relevant authorities.

There are no specific changes in the overall strategy for maintenance due to the economic crisis.

## 3 STRATEGIC PLANS

### **Overall Planning Process:**

The development of the high level Austrian transport infrastructure in general is based on the framework program issued by the ministry of transport for each road and rail (<http://www.bmvit.gv.at/presse/archiv/1112infrastruktur/index.html>).

The Austrian constitution assigns the authority on matters concerning railways in general as well as certain, explicitly stated roads to the federal government (in general these are the highways and the expressways). In addition the government is authorised to declare rail-corridors of national interest as high capacity/ high-speed tracks. All other roads and certain railway tracks are under authority of the nine federal states themselves.

This information relates to the road and rail infrastructure governed by the national authorities exclusively.

### Road – simplified overview

The road infrastructure is maintained by the ASFINAG, a private company owned 100% by bmvit (Federal Ministry of Transport, Innovation and Technology).

The ASFINAG is undertaking feasibility studies on different variants for projects based on the framework program. The resulting variant is being proposed to the ministry of transport. Once the ministry accepts this proposal it will issue an act according to §14 Bundesstraßengesetz (law on federal roads) which secures the necessary spatial corridors for the project. Municipalities have to mind these strips of land and are required to adapt their zoning plans accordingly and are to deny permission to all activities that interfere with the project.

In the subsequent steps the ASFINAG provides data to verify the environmental sustainability for a specified route for the project.

Based on this information the project is going to be validated by the Ministry of Transport in an environmental impact assessment procedure conducted by independent experts. After the project is cleared for progress it will be put forward to the public by displaying it in all city halls of municipalities affected by the project. Every citizen has the possibility to object to the project. After that the experts within the Ministry of Transport issues a report on the environmental sustainability of the project and decrees on the stipulation of the specified route.

Finally the project is being checked against the different juridical matters and if these checks are finished with a positive outcome the tendering process would start.

### Rail

The process in the railway sector is similar to the procedures outlined in the section on the planning procedures for the roads to some extent. There are differences concerning the specific juridical aspects of certain parts of the process.

One of the substantial differences is that the ÖBB is not a single operational unit as is the case with the ASFINAG. The ÖBB Holding consists of different sub-companies where infrastructure and operation are strictly separated which play an important role when developing concepts to improve the situation along certain rail routes.

However in both cases – road and railways – the main contact point is the Ministry of Transport, since the fundamental strategic direction of the development is negotiated there.

### **Features of the Austrian Infrastructure Concept**

The Austrian Infrastructure Concept is an integrated, multimodal infrastructure concept which has been published in November 2010. It includes

- a general Strategy
- a common transport forecast as a basis for the decisions on all modes and projects,
- A network analysis and a long term network development plan
- a short time financing plan including the list of concrete projects (relevant for financing period 2011-2016).

Overall political goals for the development of the infrastructure are:

- Promoting economic growth, improving the accessibility and enabling mobility,
- Protection of natural resources, inhabitants, reduction of CO<sub>2</sub>,
- Improving safety and security of the transport system,
- Taking into consideration limited financial resources.

The concrete strategy for infrastructure development takes care of

- Improving accessibility
- Improving the reliability, safety, security of the infrastructure,
- Promotion of environmental friendly modes (there is a strong focus in investments in railways),
- System adequacy: where do railways make sense? Austria has a significant number of railway lines in the secondary network, where efficiency is not ensured. Here it has to be questioned, which lines can be operated further on national level and where transport needs to be organised on regional level, also taking other modes into account.

### **3.1 Long Term**

The long term development plan for rail infrastructure is based on the infrastructure strategy described above. It describes the long term development of the rail network (until approx. 2030) and provides a prioritisation of main transport axis. It defines as well those regional lines where investigations concerning the cooperation with regions are necessary.

The key approach for the development of the long term scheme takes the following issues into account:



The need to develop an integrated time table for rail transport in Austria. The infrastructure development does not aim at speeding up the tracks "as fast as possible" but "as fast as necessary" (to realise the integrated time table). This integrated time table includes also connections to centres in the neighbouring countries.

The second element of the infrastructure development is the provision of sufficient capacity. A capacity analysis has been carried out based on the results of the common transport forecast.

The main projects / axes included in the long term investment plan include short and medium term projects:

- Significant improvements on the Danube corridor (Salzburg / Passau – Linz – Wien – Bratislava / Budapest (Wien Linz/Wels 4 track line; speed 200km/h)
- Significant improvement on the Southern corridor (Baltic- Adriatic Corridor) Brezlav – Wien – Graz – Kalgenfurt – Tarvisio ; Graz – Maribor): New construction of Semmering Base Tunnel; Koralmbahn)
- New Vienna Main Station as a connection of the two corridors plus better integration with regional transport.
- Brenner Corridor: Brenner Base Tunnel plus feeder lines (e.g. Lower Inn Valley)
- Improvements of other lines to enhance capacity for freight transport (e.g. Pyhrn line)

### **3.2 Mid Term**

The investments for the next 6 years are listed in the financial framework documents ("Rahmenplan" from ÖBB and "Investitionsprogramm" from ASFINAG). It includes all investments planned in the next years; part of the projects will not be finalized within this period.

See:

[http://www.bmvit.gv.at/verkehr/gesamtverkehr/ausbauplan/downloads/rahmenplan\\_oebb\\_2012.pdf](http://www.bmvit.gv.at/verkehr/gesamtverkehr/ausbauplan/downloads/rahmenplan_oebb_2012.pdf)

Important projects to be finalized within the next years are:

- New high-speed railway line Wien – St. Pölten
- Vienna Main Railway Station

- New line Kundl/Radfeld – Baumkirchen (Lower Inn Valley, function of feeder line for Brenner Base Tunnel and improvements for regional transport)
- Parts of motorway A5, expressway S7 and S10 (connections to Czech Republic and Hungary)

#### **4 ASSESSMENT METHODOLOGY**

The Austrian infrastructure strategy and the long term development plan for rail infrastructure include an evaluation of infrastructure projects based on a project assessment comparable to a multi criteria analysis. An important part of the benefits of infrastructure projects is based on socio economic benefits (like the improvement of competitiveness of a region), which in classical CBA can hardly be measured. Thus currently methods like MCA are used to support the prioritisation of infrastructure investments.

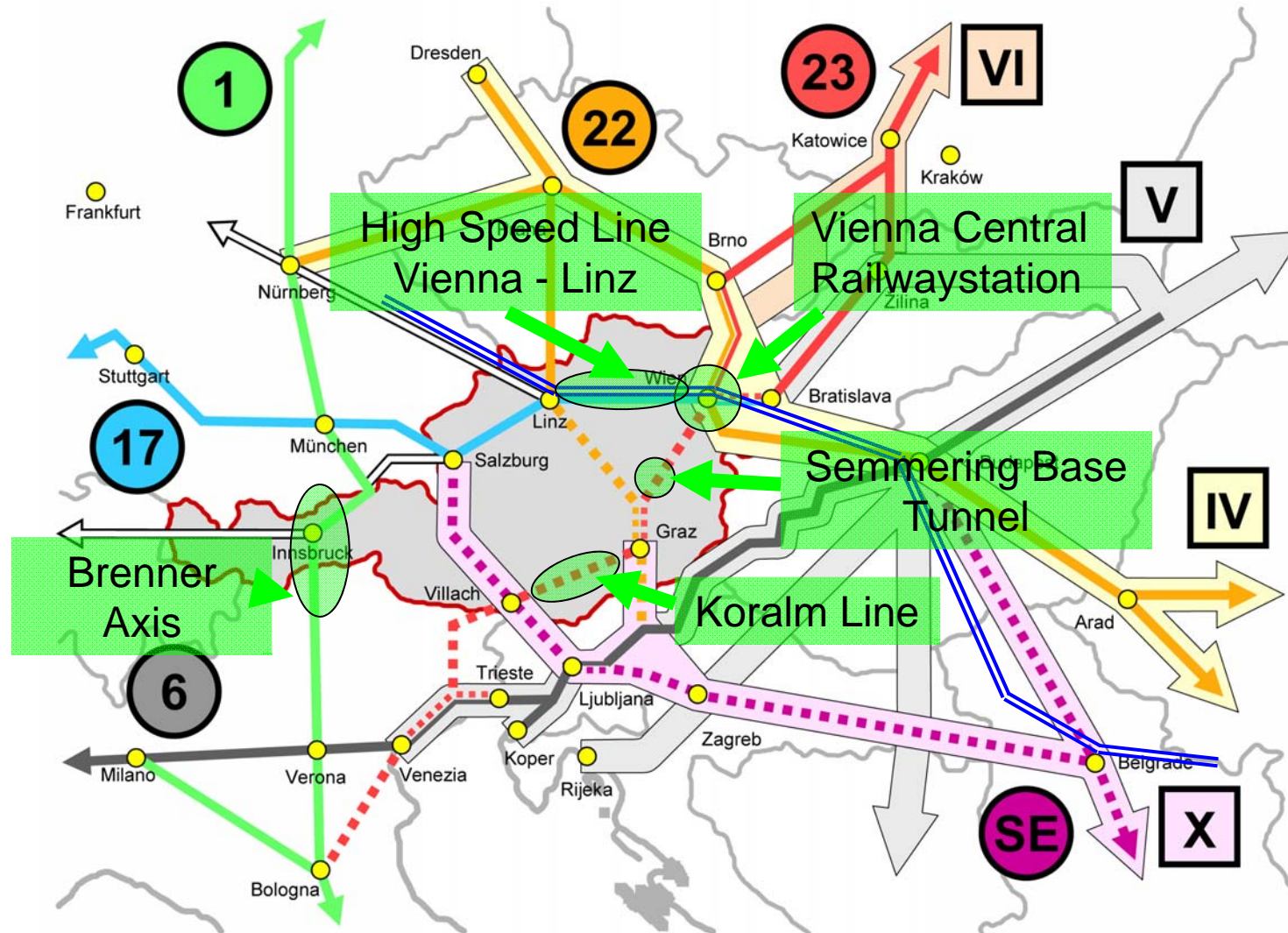
However, there are first results of advanced methods for CBA available, which also includes long term socio economic effects of infrastructure investments. Such an analysis has been carried out for the projects of the Baltic Adriatic axis in Austria (Semmering Base Tunnel, Koralm line).

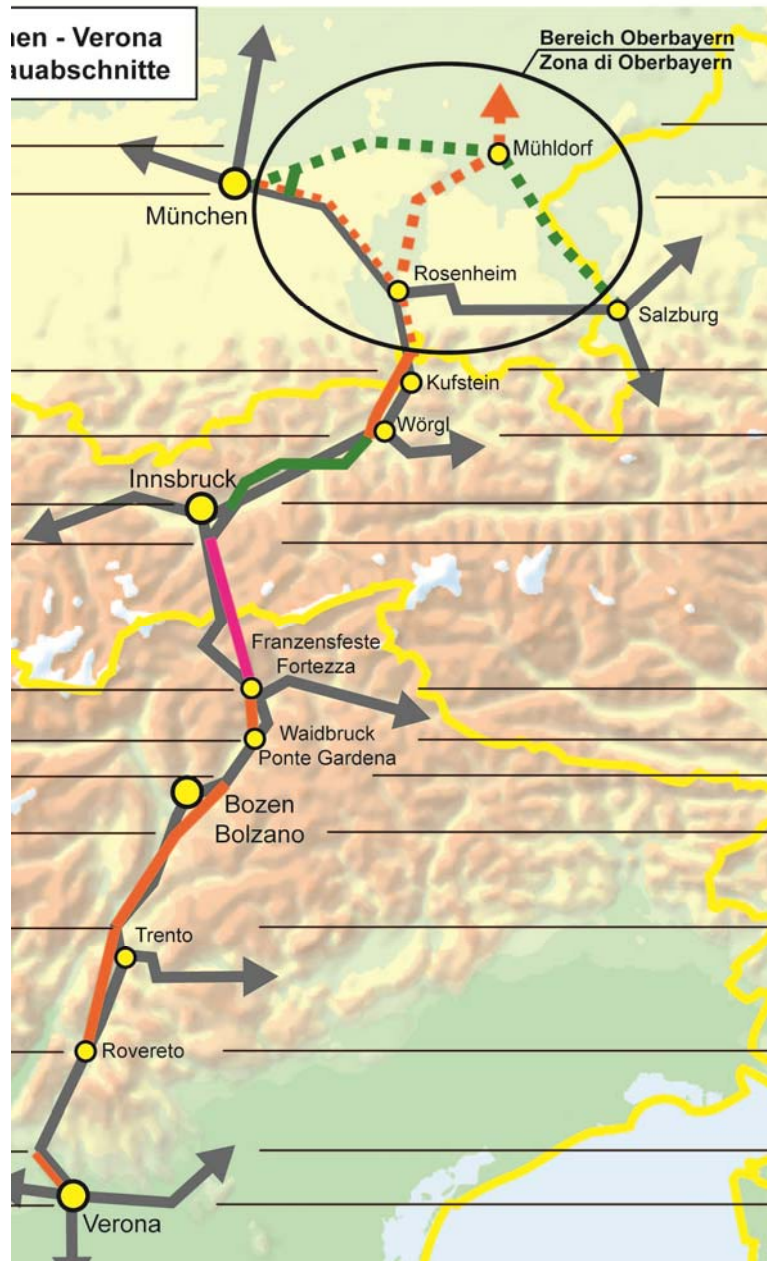
ÖBB Study on Baltisch-Adriatische-Achse – enhanced CBA: IHS Institut für höhere Studien, IKK Ziviltechniker GmbH, ZTL Zentrum für Transportwirtschaft und Logistik, Vienna 2011

Study available on ÖBB webpage (links to be provided on request)

# **Annex**

# Key Railway Projects





## Brenner Axis

4 track line in Inn valley  
 Key Section: Brenner Base Tunnel

- 55 km Tunnel
- until 2026
- ~ 9,9 Bil. € (IT + AT + EK)

## High Speed Line Vienna - Wels

- Various projects, most important one: Vienna – St. Pölten: 44 km new line, main tunnel 13 km;
- In 2012:
  - Vienna – Linz four tracks
  - Vienna – Wels 200 km/h
- Modernisation of railway stations
- Total Investments Vienna – Linz: 5 Bn €
  
- Relevant for connection to Northern Ports!



# SEMMERING BASE TUNNEL

## Semmering-Basistunnel neu – Auswahltrasse Pfaffensattel



### The Project:

Tunnel Length: 27,2 km

Twin tube tunnel system

Safety system: connection duct ever 500m,  
1 emergency station

Gradient 8,4 ‰

Estimated costs: 3,2 Bn €

Status: exploratory work,  
detail planning.

Realisation 2024

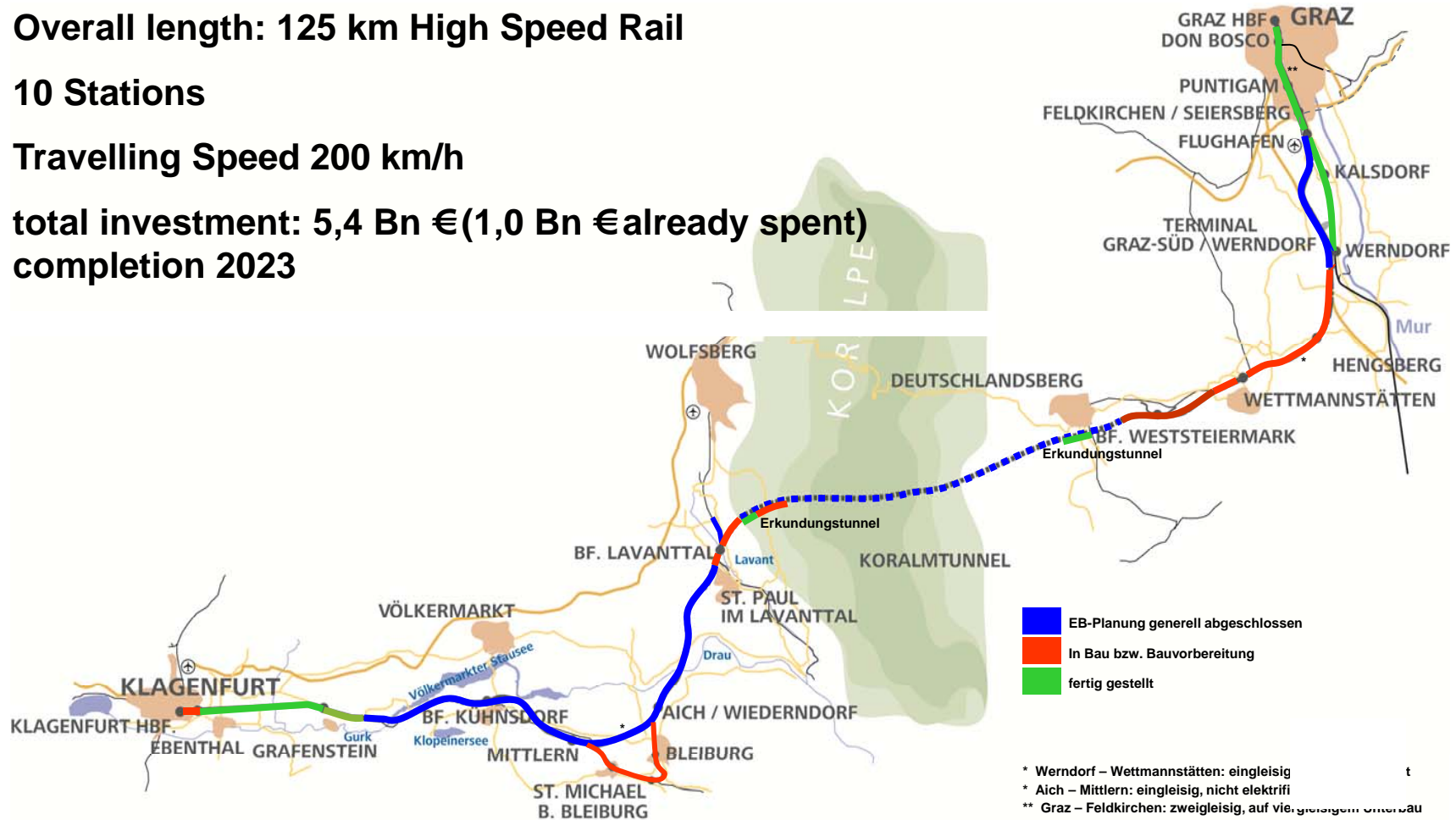
# KORALM RAILWAY GRAZ – KLAGENFURT

Overall length: 125 km High Speed Rail

10 Stations

Travelling Speed 200 km/h

total investment: 5,4 Bn € (1,0 Bn € already spent)  
completion 2023





American Trade Initiatives/AUSTRIA 2010

# The Austrian Scheme of Financing the Transport Infrastructure

**Roland Schuster**

**Head of Unit for Infrastructure Financing  
Federal Ministry for Transport, Innovation and  
Technology**

**Vienna**

**Austria**

# Basic Organizational Structure (1)

- The responsibility for the construction, operation and financing of the Austrian high-level rail and road infrastructure lies with 2 privately organized stock companies.
- The federal government owns 100% of these companies.

Road: ASFINAG

Autobahnen- und Schnellstraßen-Finanzierungs AG

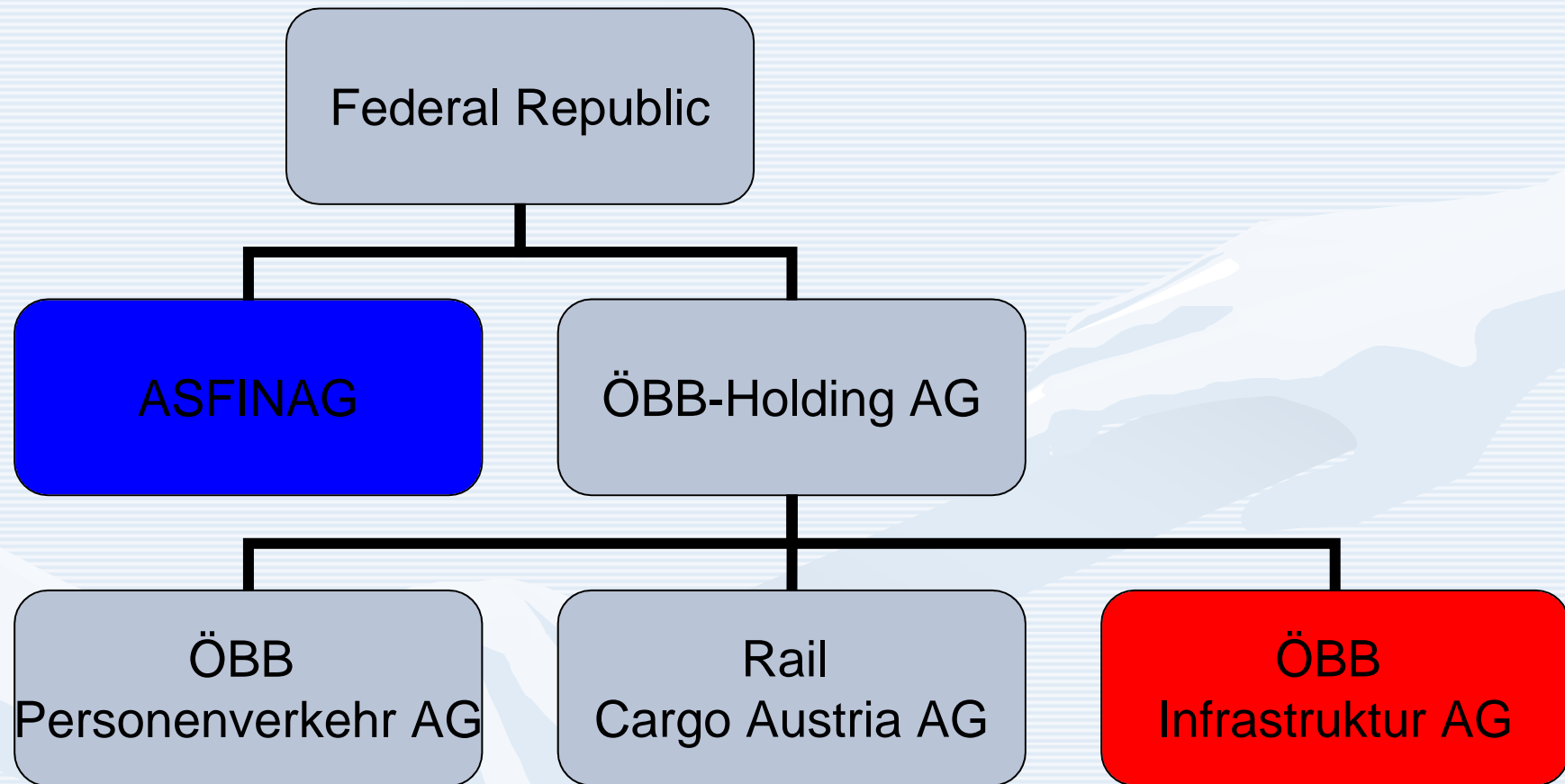
Motorways and Express Roads Financing Corporation

Rail: ÖBB-Infrastruktur AG

ÖBB = Österreichische Bundesbahnen

Austrian Federal Railways

# Basic Organizational Structure(2)



# Investment programme

- Objective of the investment programme: Networks to be striven for are coordinated between the federal government and the companies.
- The objectives are operationalized by investment programmes, based on a time-frame of 6 years.
- The programmes are controlled on the basis of the yearly sum of the investment programmes as well as on project level (double control).

# Presentation of the Investment Programmes

	year 1	Investment programme n		Investment programme n+1		Investment programme n+2		...	221	Sum per project
		year 2	year 3	year 4	year 5	year 6	year 7			
project 1	79	30	29	28	28	27	0	...		
project 2	75	118	72	69	54	43	0	...		
project 3	0	0	2	9	21	36	50	...		
project 4	95	103	111	109	104	99	80	...		
	249									
	Annual sum									

Sum of the investment programme per year

# Principles of Financing

- The companies raise the capital for their investments on the capital market.
- In order to create credit conditions on favourable terms state liabilities are provided for the companies.
- Financing is NOT based on the principles of project financing but on the principles of corporate financing.
- Financing is based on pre-financing with income from long-term refinancing.

# Refinancing

## Road

- Toll revenues as well as other revenues.
- No state subsidies from the federal government

## Rail

- Revenues from infrastructure charging (rail infrastructure charging) as well as other revenues.
- State subsidies

# Agreements on Investments in the Rail Sector

- The refinancing of the investments in the rail sector is mainly carried out through state subsidies (annuities).
- Long-term investment agreements are concluded between the federal government and the companies. Hereby the state subsidies are defined on a concrete basis.



# The Annuity Model (1)

Example:	Investment:	1.000
	Own Contribution:	<u>-100</u>
	Macro-Economic Investment.:	900
	Annuity:	appr.56      interest rate: 5%

→ Macro-Economic Investment ( 900 ) is not financed on a cash basis but on the basis of annuities (30 years).

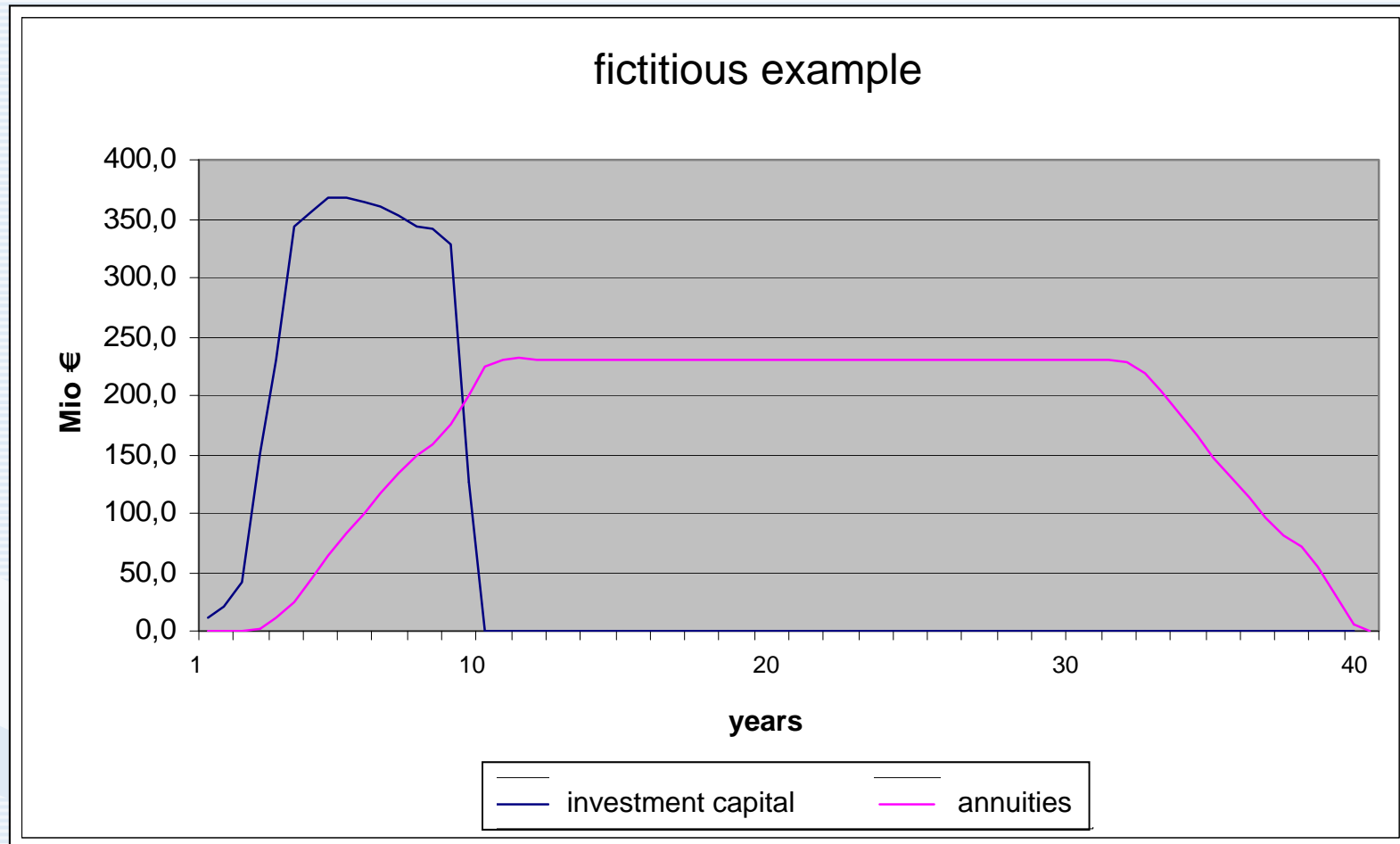
→ 30 years correspond with the average period of the life cycle of the infrastructure and the average depreciation period.

# The Annuity Model (2)

## Impact of annuities on the companies:

- The company bears the liability
- High debts on the liabilities side and assets (activated infrastructure investments) on the other side of the company's balance sheet (balance sheet extension).
- Debts and interests are refinanced by annuities over a long-term period, that means a slow reduction of debts.
- No impact on the profit-and-loss statement because depreciation and interests are covered by annuities.

# The Annuity Model (3)



# The Annuity Model (4)

## Pros

- Consonance of public budget and long-term infrastructure financing
- Compatibility of investment-peaks and public financing
- Macro-Economic user fee (refinancing by the tax payers according to the period of utilization)

## Cons

For the enterprise:

- Long-term liabilities
- The enterprise is permanently confronted with debts

For the national budget:

- Long-term effect on the budget

The responsibility for the construction, operation and financing of the Austrian high-level rail and road infrastructure lies with 2 privately organized stock companies (100% owned by the federal government).

