

**Response to questionnaire for:**

**Assessment of strategic plans and policy  
measures on Investment and Maintenance in  
Transport Infrastructure**

**Country:**

**Germany**

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Maintenance in Transport Infrastructure**

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## **1 INTRODUCTION**

- *Describe the situation of your current transport networks*

Germany has one of the world's largest and most sophisticated transportation systems. The transportation infrastructure is continuously maintained and upgraded according to the increasing amount of traffic and the increasing requirements that mostly arise out of Germany's location in the center of Europe and its many far-reaching global industrial and commercial relationships. Germany's transportation infrastructure also reflects Germany's position as a transportation and communications hub for the European continent. Major backbones are the Trans-European Transport Networks (TEN-T) for roads, rail and waterways as well as a substantial number of well connected major airports.

### **1.1 Infrastructure**

- *Provide network length for each mode (e.g. road network broken down by km of motorways, paved road and unpaved road; rail network broken down by high speed lines and conventional lines; inland waterways, major maritime ports and handling capacity; major airports etc.)*

Germany has one of the densest road networks in the world. At present there is a total of 651,000 km of roads of which 231,000 kilometers are non-local roads, including more than 12,800 kilometers of motorways (four or more lanes), 39,637 kilometers of federal roads (Bundesstraßen), 86,474 kilometers of roads owned and maintained by the Laender and 91,710 kilometers of district roads. All those are paved. Not enumerated here are the community and city roads or privately owned roads, a small part of them unpaved.

The rail network throughout Germany is extensive. The German railroad system for the long-distance traffic and the regional transport owned by the Deutsche Bahn Netz AG includes a network of 33.400 km at standard 1,435 meter gauge, of which 19,8000 kilometers are electrified.

High speed rail in Germany is performed on new constructed and upgraded lines with a total length of about 1.300 km. To speed traffic, high-speed railroad tracks have been built e.g. from Cologne to Frankfurt, from Nuremburg to Munich, from Berlin to Hamburg to permit special trains to move up to 250 kilometers and more per hour.

The German Federal waterway network consists of 23 000 km<sup>2</sup> sea waterways and 7300 km inland waterways. This comprises waterways for maritime navigation (e.g. access to the seaports, Kiel Canal) as well as for inland navigation. The inland waterways consist of free flowing rivers (e.g. Rhine, Elbe), flood controlled rivers (e.g. Mosel, Main, Neckar) and canals (e.g. Western German canal network, Mittelland canal, Main-Danube Canal). The German waterway network is one of the most developed in Europe. Duisburg, located in the northwestern part of Germany on the Rhine, is the largest inland port in Europe and on of the largest inland ports in the world.

In 2011 Germany's most important 12 seaports at the North Sea coast and 11 seaports at the Baltic Sea coast handled 296 million tonnes of cargo with a growth rate of 7.3 percent compared to 2010.

Approximately 250 inland ports handle another 250 million tonnes of goods per year. Duisburg had 125,6 million tonnes turnover in 2011.

Germany also has a large system of inland and international air transportation with airports such as Frankfurt, Munich and Berlin serving as international hubs and further major airports such as eg. Düsseldorf, Cologne/Bonn, Hamburg or Hannover. especially serving point-to-point passenger transportation. Alongside, some airports are specialized on freight operations such as Leipzig/Halle and Cologne/Bonn.

In general, German airports are privatized legal entities governed by the limited liability law, except for Frankfurt Airport, which is a stock cooperation. While with most airports local and regional public authorities are holding shares, the Federation itself has considerably reduced its shares and is only holding some at the airports of Berlin, Munich and Cologne/Bonn.

## 1.2 Performance

- *Provide an indication of the performance of your transport networks by mode: congestion, reliability, disruptions, delays ...*

The German transportation networks have a high grade of reliability. This refers to all transport modes. In parts of the network with especially dense traffic due to a high density in population or the role as a major international hub, congestion occurs, but the Federal Government copes with that problem by introducing highly sophisticated and advanced technologies that lead to or facilitate an optimization of the use of the network and/or upgrading the net. The government has also dedicated itself to continuously reduce bottlenecks that occur. Obvious congestion areas are those with a high density in population like the Cologne or Frankfurt area and of high international importance. Congestion also occurs on parts of the network during the major school vacations.

Most sections of Germany's motorway with the highest density of traffic are modern, containing three or sometimes even more lanes in addition to an emergency lane.

Railway traffic in Germany is very reliable. Nevertheless the infrastructure company DB Netz AG seeks to further improve reliability and punctuality. Amongst others they undertake – within their framework of the successful program for the future “Pro Netz”- substantial building and prevention measures. This means for example an elimination of the speed restricted sections of the network to a large extent.

The punctuality of railway traffic is subject to many influences. These influences reach from willful tampering with the railway, people on the track and extreme weather conditions on failures of infrastructure and vehicles to construction works in the rail network. According to experience the disruptions are caused by railway undertakings and their carriages, infrastructure failures and external influences by an equal share.

Disruptions on individual lines can be carried forward immediately within the close meshed and regular interval timetabled system and also by domino effect into the whole network. Hereby it is necessary to take into account that around 39 000 trains are running every day on the network of the DB Netz AG of about 34 000km of lines.

Of these are 33 000 passenger trains which are running daily on the nationwide network, many of them integrated into tight regular interval timetables. They are used by more than five million passengers a day.

On inland waterways there is little congestion besides of single cases where the capacity of locks is exploited. Most of the inland waterways still have a capacity reserve. Inland waterway transport is characterized by high reliability. However, the transport capacity of inland vessels often is limited by the possible draught depending on the water level.

Germany has around 7,300 km of inland waterways and the largest number of private and public inland ports in Europe. The inland waterway transport sector thus has considerable untapped capacity.

Major part of the governments policy is to regularly upgrade the transportation system to present or upcoming requirements.

## 2 MAJOR PROJECTS AND FUNDING

- *Describe the main projects in your country (e.g. national transport infrastructure developments, international corridors, networks ...)*
- *Describe the main financing sources: e.g. state, regions, local administrations, private sector ...*
- *Describe financing policy on infrastructure maintenance*
- *Describe any specific policies or guidelines in regard to private-public partnership as a mean of funding.*
- *Are there any policy/funding structure changes due to the crisis?*

For a list of all main projects please see

Bundesverkehrswegeplan 2003

Investment Framework Plan 2011-2015 for the transportation infrastructure of the Federal Government

Transport investment report for 2010

All available at the ministry's website [www.bmvbs.de](http://www.bmvbs.de)

Germany has a mix between publicly financed projects and projects realized in public-private partnerships. All of these projects are incorporated in the national infrastructure plan (Bundesverkehrswegeplan) which ensures a coordinated and efficient approach towards realization of new infrastructure as well as maintenance or upgrading. To contribute to the funding from the federal Government's major budget line (Bundeshaushalt) for highways on 1 January 2005 a system came into effect for mandatory tolls on heavy good vehicles while using the German motorway network (now 12 800 km). Vehicles and vehicle combinations with a maximum permissible weight of at least 12 tons are liable to pay the toll. This toll system was enlarged in 2012, now also containing some of the major federal routes (approx. 1000km). Besides the main fact that users have to pay for every kilometer actually driven Germany has two criteria for the differentiation of the toll, one being the number of axles and the other the emission class of the vehicle.

The railway infrastructure is owned by the Deutsche Bahn Netz AG. The exclusive shareholder of this corporation is the Federal Republic of Germany. A substantial part of investments in the infrastructure is conservatively financed.

The Federal Government continues to be responsible for the funding investment (new construction, upgrading and renewal). The railway infrastructure companies have to bear the cost of the day to day maintenance of the rail network. Therefore each railway undertaking has to pay a charge for using the network in Germany. New construction and

upgrading of railway lines is financed by the Federal Government by non-repayable grants on the basis of special agreements. Relating to the investment for renewal the federal government established a system of output control (compliance with an agreed level of network quality) on the basis of a "Service Level and Funding Agreement" (LuFV/ Multi annual contract) with the infrastructure companies of DB AG. For a duration of five years the federal government pays on this basis an amount of 2.5 bln € each year and the infrastructure company makes a certain contribution towards maintenance. So the priority of investment lays on the existing network (no structural decay).

No fundamental changes to the funding schemes were decided in consequence of the economic crisis. A special additional program (economic stimulus-Package I and II) ameliorated the funding for infrastructure projects f.i. upgrading of railstations, construction of additional parking places for lorries along the motorways, noise protection and the acceleration of the construction of infrastructure. The current time of these programs was from 2009 until 2011. For the period from 2012 until 2013 (partly until 2017) a new program (Infrastrukturbeschleunigungsprogramm) was introduced by 1 January 2012. The projects to be realized under that program receive in total an additional 1 billion euros, 600 millions for roads (400 of that for projects under construction, 127 millions for maintainance, 60 millions for new roads, 13 millions for cycle lines along federal roads), 100 millions for rail (dedicated to the amelioration of trainstations), 300 millions for the federal waterways (exclusively dedicated to the building of the 5<sup>th</sup> new lock chamber in Brunsbüttel on the Kiel Canal).

A national transport infrastructure funding agency (Verkehrsinfrastrukturfinanzierungsgesellschaft) was established in 2003 whose task it is to distribute the income of the road toll among road, rail and waterways and to support projects realized under a public-private funding scheme.

The HGV toll act contains an earmarking of the revenues to improve infrastructure, predominately the federal motorways. Since 2011 the Federal Government introduced the first steps towards a comprehensive lifecycle funding of roads. Since 2011 the revenue is used only for roads (maintenance and upgrading) - after reduction of system costs. The funding agency Transport Infrastructure Financing Company (VIFG) is a center of competence for public private investments and thus important contributor to innovative infrastructure funding in Gemany. The agency is also in charge of the so called public-private funding stress test, i.e. the selection of projects suitable for pp funding.

For projects which are part of the Transeuropean Transport Network (TEN-T) national funding is complemented by European funding under the TEN-T scheme which is to be replaced by the Connecting Europe Facility within the multiannual financial framework 2014 - 2020.

### 3 STRATEGIC PLANS

- *Explain the most important policy objectives (e.g. transport links, economic growth, social, environmental)*
- *Describe the major issues or biggest challenges encountered for achieving these objectives (funding difficulties, technical issues ...).*

The Federal Government of Germany considers mobility a key prerequisite for economic growth, employment and social inclusion. The purpose of a prudent transport policy is thus to facilitate mobility and make it sustainable. All transport policy lines aim at a transport system that is both efficient and environmentally friendly, and in which the individual modes of transport are dovetailed in an optimum manner and a mobility that is characterized by social inclusion and a strong supply with public transportation means.

It is hard to find another country in the world of a similar size that has such a dense road network, such modern railways, such widespread inland waterway networks and such high-capacity local public transport systems as Germany. Germany's airports and seaports, with their excellent connections, are used as major international transport hubs. To guarantee this high level of mobility and in order to make transport safe, reliable, smooth, seamless and efficient as well as sustainable efficient, well maintained infrastructure is the key. For this reason, the Federal Government together with the Laender Governments continuously maintains, renews and upgrades the infrastructure as demand requires and combines it with a set of actions related to logistics, traffic management and traffic guidance systems. Funding priorities are set on projects where the transport infrastructure has to be renewed and bottlenecks have to be removed and where there is the highest demand and the greatest benefit to the national economy.

One of the main objectives of Germany's transport policy is to enhance the competitiveness of Germany as a centre for logistics. Freight transport and logistics are considered by the government not just to be the lifeblood of an export-driven economy. With an annual turnover of more than 220 billion euros and a workforce of more than 2.8 million, freight transport and logistics are now the third largest sector of the German economy and, at the same time, an important growth market of the future. To make Germany even more attractive as a centre for logistics, the Federal Ministry of Transport joined forces with industry to evolve the 2008 Freight Transport and Logistics Masterplan into a Freight Transport and Logistics Action Plan. The Action Plan provides a framework for action to tackle the current challenges, and at the same time serves as a basis for further improvements to Germany as a centre for logistics. The objective is to facilitate mobility rather than hampering it. In the interests of a forward-looking freight transport policy, the Action Plan will ensure that the transport of goods is efficient, environmentally sound and multimodal. The 30 individual measures contained in the Action Plan will result in a more efficient freight transport system and, in doing so, will generate maximum

benefit for Germany as a centre for logistics, for the future of which all modes of transport are important.

In the future, transport policy will play an even greater role in protecting the environment and tackling climate change. Across all sectors, the German Government is committed to reduce CO<sub>2</sub>-Emissions by 40% until the year 2020 and by 80% until 2050. As a consequence, besides expanding the use of alternative fuel options, the Government is keen on mainstreaming battery-electric and Hydrogen-powered drivetrains as a major component towards reducing transportation's dependency on fossil fuels and CO<sub>2</sub> emissions, especially in connection with a shift of the energy system towards renewable sources. In May 2011, the German Federal Government has adopted a comprehensive Electric Mobility Programme as part of an overall strategy towards turning mobility into a more environmentally and climate-friendly direction. The Federal Government has joined forces with the private sector, academia, the Federal States, municipalities and other stakeholders and is providing substantial funding for a wide range of research and demonstration projects for advancing vehicle technology and establishing the corresponding infrastructure. To achieve a more sustainable transport system, the Government's policy approach is based on a triangle of knowledge provision, research and innovation and investment in modern infrastructure. Taking care of social inclusion and aiming for an optimized share between alternative transport modes based on their specific qualities is an integral part of the approach.

Major challenges on this path particularly arise from the central geographical position of Germany in Europe (with all major transport corridors crossing the country). Forecasts predict that traffic levels will continue to rise drastically, especially freight traffic. The Federal Government thus considers sustainability of all policy measures an imperative as the impact on climate change needs to be reduced as well as the resilience of the transport system towards cc needs to be drastically increased.

Thus the major objectives of the Federal Government' transport and transport infrastructure policy are as follows:

1. Reach optimum use of the existing transport infrastructure and make transport efficient, for instance by interlinking the different modes of transport in an optimum manner in the interests of an integrated transport policy and by developing and deploying more electronic traffic management systems.
2. Reduce the level of traffic wherever this is possible without having an adverse impact on the economy, for instance by developing smart logistics strategies to avoid unnecessary HGV trips, and by means of a settlement policy which means that people do not have to travel excessive distances.
3. Shift significantly more traffic to the railways and waterways, thereby making a major contribution towards protecting the environment and combating climate change. This includes a further improvement of local public transport services in urban and rural areas.



4. Upgrade the transport infrastructure on a human scale and in an environmentally sound manner. In doing so, it will be taken account of noise mitigation as well as the interests of environmental protection and nature conservation.
5. Further reduce CO<sub>2</sub> emissions and energy and fuel consumption of the transport sector, for instance by incentivizing fuel-efficient vehicles and providing support for research and development on alternative fuel options and drivetrains (e.g. battery-electric and hydrogen-powered vehicles) that are environmentally friendly and have a lower impact in regard to climate change.

Technology and innovation aims, and steps how to reach them, are laid down in the Federal Government's High Tech Strategy that is accompanied by an action plan with several "future projects" in the most important areas to ensure a coordinated approach across different sectors and stakeholders.

As Germany's infrastructure is not only one of the densest and most sophisticated in the world but also serves as a major hub for global, international as well as European traffic which leads to a continuously growing volume of transport the enlargement of capacities, reduction of bottlenecks, growth of land use, the growing amount of energy needed for the installed telematics and high-tech systems, in correlation with the basic infrastructure growing old with a growing need of repair and maintenance funding of transportation infrastructure is a growing challenge.

### 3.1 Long Term

- *Describe the long term investment plans, i.e. projects that will be carried on beyond 5 years.*

Long term aim for transport infrastructure is to have a transportation system highly resilient towards climate change and the most sustainable and efficient seamless transportation chains possible. The infrastructure projects necessary to reach that goal will be laid down in the new infrastructure plan 2015 (Bundesverkehrswegeplan 2015) that at present is in the phase of being set up. The last Infrastructure Plan, dating from 2003, is still valid. It is upgraded every 5 years, last time in 2010 through infrastructure requirement plans.

### 3.2 Mid Term

- *Describe the mid-term investment plans, i.e. projects to be finalized within 5 years.*

For the period 2011-2015 a 5-year-plan was set up - the infrastructure framework plan IRP for the transport infrastructure of the federal government. The investment of federal funds for these 5 years average 10 billion Euros p.a., i.e. more than 50 billion periods for the whole period. 20,6 billion Euros are provided for the railway infrastructure, thereof 63% for maintenance. 24,8 billion Euros are provided for motorways and federal roads, thereof the half for maintenance. And finally , 4,6 billion Euros are provided for the federal waterways, thereof two-thirds for maintenance.

In 2010, investment in the railway infrastructure focused on the following new high-speed lines/upgraded lines: Karlsruhe–Basle, Nuremberg–Erfurt–Halle/Leipzig, Augsburg–Munich, Stuttgart–Ulm–Augsburg, Berlin–Dresden, Leipzig– Dresden, Berlin–Görlitz, Stelle–Lüneburg, Karlsruhe– Stuttgart–Nuremberg–Leipzig–Dresden

It also focused on combined transport projects, the Erfurt hub, the Halle/Leipzig hub, the Magdeburg hub and the rail link to Schönefeld Airport in Berlin hub. . In 2013/14 investments will be taken in the following rail lines: Nuremberg- Erfurt-Halle/Leipzig (extension and new line), Karlsruhe – Basel (extension and new line), Hoyerswerda – Horka – border Germany/Poland (extension), Stuttgart 21

In 2010, federal funding totalling around 32 million euros was also provided for the immediate action programme entitled “Hinterland Traffic to and from Seaports”, the investments in the infrastructure of motorways and federal roads in 2010 as a result of 175 km new built or upgraded and approved roads. Another more than 500 km are under construction. 76 bypasses are under construction.

The most important projects of federal waterways was the upgrading of the canal network and the new building of locks, what will be continued during the next years.

The replacement of capital assets and the expenditure on renewal are designed to preserve the availability of and to modernize the route network, including the stations and the energy supply installations of the railway infrastructure companies. Railway infrastructure companies’ maintenance expenditure on the existing network in 2010 was around 1.47 billion euros in total. As part of the overall strategy for noise mitigation on existing federal railway lines, the federal railway infrastructure companies spent around 660 million euros on noise mitigation measures from 1999 to 2010 on the basis of relevant funding guidelines. On the basis of the Guidelines (Administrative Regulations) on Funding for Combined Transport Terminals of private operators

492.7 million euros had been approved in the rail an inland waterway sector by the end of 2010 for 69 combined transport terminals (in some cases involving several construction stages). From 2005 till 2010, a total of number of 82 private sidings were funded on the basis of the Guidelines on Funding for the Construction, Upgrading and Reactivation of

Private Sidings of 3 August 2004 (in force from 1 September 2004 to 31 August 2009) and the Guidelines of 17 September 2009 (in force from 21 September 2009 to 31 August 2012), with funding totalling 48, 2 million euros and investment totalling around 129.4 million euros

Enhancing safety at level crossings on public roads (e.g. installing new or improving existing safety equipment) and, in particular, the removal of level crossings (e.g. by constructing bridges) is a priority transport policy objective which is strongly supported by the Federal Government, which is committing substantial federal funding on the basis of the Railway Crossings Act. Of the funding provided by the Federal Government in financial year 2010 for what is known as the “federal third”, the federal states called in a total of 79.7 million euros.

The work on these projects will be continued during the next years.

The current (2004) requirement plan for federal trunk roads, which is an annex to the 5th Federal Trunk Roads Upgrading (Amendment) Act, contains a long list of construction goals ( new motorways as well as widening of 2,200 km of motorways to six or more lanes, construction or upgrading of 5,500 km of federal highways, including around 850 bypasses. The mid term investments will follow this plan of which by now almost 40 % of the requirement plan projects had been delivered. One of the main priorities of investment in the upcoming years remains maintenance as well as the construction of new and the widening of existing federal motorways.

According to the 2010 Budget Act of 6 April 2010 (Federal Law Gazette I, No 14, p. 346), funding totaling around 6.3 billion euros was available in 2010 for the federal trunk road sector in Chapter 1210 and Chapter 1202 (tolls, First Economic Stimulus Package and Reconstruction Aid Fund for Flood Damage). Including funds from Chapter 6091 (Investment and Redemption Fund, Second Economic Stimulus Package), actual expenditure was around 6.6 billion euros, of which around 5.6 billion euros was investment. In the year under review, a total of around 2.5 billion euros was spent on construction work to enhance the capacity of the federal trunk roads (requirement plan projects, budget item comprising requirement plan measures, including repayments to private sector investors). With this money, 6.3 km of new motorways were constructed and 136.4 km of existing motorways were widened to six or more lanes. In addition, 84.8 km of new two-lane federal highways were constructed and 10.5 km of four-lane federal highways were either constructed or widened from two lanes (including bypasses). Within the framework of the construction and widening of federal trunk roads, the construction of bypasses is of particular importance and remains a focus of investment in federal trunk road construction in the coming years.

Major priority will also be in the years to come, in addition to the construction of new and upgrading of existing federal trunk roads, their structural maintenance.. In 2010, a total (i.e. route + civil engineering structures) of around 2.0 billion euros (including the Second Economic Stimulus Package) was spent on maintaining the structural integrity of the

federal trunk roads (excluding the structural maintenance shares in connection with conversion and upgrading plus motorway widening). Of this total, around 1.2 billion euros was spent on federal motorways and 865 million euros on federal highways. The construction of cycle tracks along federal highways (including structural maintenance of cycle tracks) will also be major part of the next years work. As well as noise mitigation in the construction of new and upgrading of existing federal trunk roads (noise prevention), plus noise mitigation on existing roads (noise remediation).

Federal waterways are a major infrastructure in a country dedicated towards sustainability of transport. With regard to the ageing structure of the constructions it will be necessary to focus the investment on the conversion and the replacement of the waterway infrastructure. Beyond that the investment in the federal waterways focuses on the continuation of the upgrading and construction schemes already begun.. For new projects priority will be given to measures on waterways with the highest importance. These investments will follow the schemes in the framework investment plan, with a high proportion of projects combining the replacement of capital assets

#### **4 ASSESSMENT METHODOLOGY**

- *Are decisions for investment projects based on assessment methodology?*
- *If yes then describe assessment methodologies by mode.*
- *Has there been any recent change in assessment methodologies?*
- *Describe any cost and benefice analysis or impact assessment study that you have carried out.*

All projects are based on a Cost Benefit Analysis and an assessment of the possible environmental impacts. For all modes of transport the CBA follows the same methodology that guarantees the comparability of projects. A special methodological guideline is used for the impact assessment of transportation infrastructure significantly affecting Natura 2000 sites. This gives guidance on the provisions of Article 6 (3,4) of the European Habitats Directive. According to Article 6(3) of the Habitats Directive all plans and projects, which also include proposals for the construction or expansion of roads, that individually or in combination with other plans or projects are likely to have significant impact on the Natura 2000 areas, have to be assessed according to their compatibility with the conservation objectives of the respective sites. The application of Article 6(3, 4) of the Habitats Directive basically presupposes that the Habitats Directive has been fully implemented at the national level. This will not be the case until the formal designation of all sites is completed. Nevertheless, the requirements of Article 6 HD are binding on the authorisation procedure, regardless of whether the Member State has already transposed the specific European obligations in all national legislative and administrative regulations or not.

This guideline is based on the general guideline for impact assessment of Federal Motorways. Both Guidelines are mandatory. The guidelines take into account the present state of technological and legal developments and research and are continuously updated if necessary. The guidance is designed principally for use for the members of the Motorway Administration (Comprehensive step by step recommendations for the decision making process and implementation).

For railways infrastructure the assessment concentrates besides environmental issues on safety issues like Safety Assessment of the understructure, superstructure, civil works, energy, Interface Rolling Stock/Track, Interface Rolling stock/Catenary, assessment of track components or railtechnologies etc. Basic law is the federal Railway Infrastructure Act.

Waterways: use of CBAs and an environmental impact assessment whenever the river or canal needs to be upgraded. Similar to the procedure of Federal Motorways specific guidelines to take account of environmental aspects in upgrading and maintaining the waterways are established and continually developed further. ( see [http://www.bafg.de/cln\\_031/nn\\_230258/U1/DE/03\\_Arbeitsbereiche/02\\_Arbeitshilfen/handbuch\\_umwelt\\_bwastr,templateId=raw,property=publicationFile.pdf/handbuch\\_umwelt\\_bwastr.pdf](http://www.bafg.de/cln_031/nn_230258/U1/DE/03_Arbeitsbereiche/02_Arbeitshilfen/handbuch_umwelt_bwastr,templateId=raw,property=publicationFile.pdf/handbuch_umwelt_bwastr.pdf))

At present the new Federal Infrastructure Plan (Bundesverkehrswegeplan 2015) is being set up. This plan will be based on a foresight of the nation wide traffic interdependencies for 2030. When by the end of 2013 this foresight process will have come to an end all infrastructure extensions and new infrastructure projects (rail, road, waterways) will be subject to an macroeconomic examination and if meeting the requirements go into the approval process. In order to ensure the realization of the infrastructure plan projects through funding by the federal government the Federal Parliament has to confirm these projects are needed. This is ensured by inclusion of the so called infrastructure requirement plans for roads and rail into an annex of the corresponding law (Bundesfernstraßenausbaugesetz und Bundesschienenwegeausbaugesetz) by Parliament decision.

For the Federal Infrastructure Plan (Bundesverkehrswegeplan) 2015 new guidelines and assessment procedures are under development. The new infrastructure plan will be based on profound foresights of future developments in transport and the assessment will be based on regional interrelationship matrices. The new plan will be accompanied with a higher developed strategic environmental assessment of the projects and be delivered in a holistic approach towards future transport infrastructure investments. Major aspects that are new in this amended methodology are:

- New types of measures to be included into the assessment procedure
- A strategic environmental assessment with a updated CBA with all user components and a new set of assessment criteria

- Amelioration of the assessment of environmental aspects
- A new approach to assess the plausibility of investment costs
- Check of the assessment of travel- and timegain wins

For the implementation of these upgrades several research projects have been set up who work in close interaction. These deal with new methodologies for foresight procedures, a new concept for an environment compliance methodology, more reliability of cost prediction of projects and an updated methodology for CBAs in general. Each single criteria of the CBA will be checked and if needed changed or upgraded, deleted or a new criteria incorporated. The assessment methodology and the monetary approach will be updated to present and future requirements. One new assessment criteria f.i. will be reliability and smoothness of the transport/traffic flow. A counter-check with assessment criteria and CBA methods of other countries is included.