Public-Private Partnerships in the Federal Trunk Road Sector - the New Generation
Foreword

The global wealth pyramid of industrialized economies and numerous studies show that infrastructure and mobility will form the foundation of future prosperity. The fallacy that we can decouple the structural maintenance and upgrading of our infrastructure from economic growth has resulted in too little investment for many years.

We have thus initiated a new direction in our investment policy and launched a five-point investment ramp-up. First, additional Federal Government funding totalling around 10 billion euros over the period to 2018. Second, a system change away from infrastructure funding primarily through taxation towards funding based on the user pays principle and the ring-fencing of the revenue generated in this way for the financing of infrastructure. Third, the establishment of clear priorities. Fourth, the principle of giving structural maintenance precedence over new construction. Fifth, the greater involvement of private sector capital – because the modernization of our infrastructure cannot in the long run be paid for exclusively from public finances.

Our experience of public–private partnerships (PPPs) to date clearly shows that construction is more economical, the quality of construction is high and roads are available more quickly. The implementation of PPPs is thus a genuine win-win situation. Everyone benefits – the Federal Government, motorists and investors. Building on the success stories to date, I have joined forces with the Federal Minister of Finance, Wolfgang Schäuble, to launch a new generation of PPPs. This involves 11 projects and investment totalling around 15 billion euros for the construction, structural maintenance and operation of around 670 kilometres of federal trunk roads.

And there are crucial innovations here. For the first time, institutional investors can, by means of a project bond, get involved in national infrastructure projects. This provides them with attractive investment options, especially at times of low interest rates. At the same time, the remuneration of the operator is optimized and directly coupled to the availability of the stretch of road. In addition, the scope of application is widened. For the first time, it includes structural maintenance projects and schemes to fill existing gaps, and also covers federal highways.

I am convinced that the new generation of PPPs will help us to prevent the greatest burden on our national economy – congestion – at crucial locations on our road network. With the investment ramp-up, we will achieve a record growth in funding of 40 percent over the period to 2018. This is the largest modernization drive for our infrastructure, and will continue to safeguard growth, jobs and prosperity in our country in the future.

Yours
"New Generation" of PPPs in the federal trunk roads sector: objectives and features

The Federal Ministry of Transport and Digital Infrastructure, in consultation with the Federal Ministry of Finance, has announced that it intends to launch a "new generation" of PPPs on the market. The basis of this decision is the fact that our experience of the first and second PPP batches has been predominantly positive. The "new generation" of PPPs is part of the investment ramp-up launched by the Federal Minister of Transport and Digital Infrastructure, Alexander Dobrindt. The projects that make up the "new generation" of PPPs comprise around 670 kilometres of federal trunk roads (motorways and federal highways), involving investment totalling around 7.5 billion euros. On top of this, there is a further approximately 7.5 billion euros for other components of PPP projects, (pro rata) funding, operation and structural maintenance.

**Objectives of the "new generation" of PPPs:**

- Implement necessary road construction schemes more quickly and more efficiently
- Minimize congestion and the harm caused to the national economy by congestion
- Create a framework for investment options for private sector capital

**Features of the "new generation" of PPP projects:**

- Designed as an availability model, in individual cases also as a model under the Private Sector Funding of Trunk Road Construction Act
- Upgrading schemes on busy motorways extended to cover structural maintenance projects and schemes to fill existing gaps plus, for the first time, PPP projects on federal highways
- Involvement of institutional funding providers (for instance insurance companies, pension funds) by contractors, also use of new funding instruments such as project bonds
The 11 "new generation" PPP projects comprise the following schemes. Future changes or additions to the list cannot be ruled out.

<table>
<thead>
<tr>
<th>Federal state</th>
<th>Project description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baden-Württemberg</td>
<td>A 6 federal motorway, Weinsberg interchange – Feuchtwangen/Crailsheim interchange (widening to six lanes)</td>
</tr>
<tr>
<td>Bavaria</td>
<td>A 3 federal motorway (Biebelried interchange – Fürth/Erlangen interchange) (widening to six lanes)</td>
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<tr>
<td>Bavaria</td>
<td>A 8 federal motorway, Rosenheim – German/Austrian border (widening to six lanes)</td>
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<tr>
<td>Brandenburg</td>
<td>A 10/A 24 federal motorways, Neuruppin junction (A 24) – Pankow/Brandenburg state border interchange (A 10) (widening to six lanes (A 10) and full depth reconstruction (A 24))</td>
</tr>
<tr>
<td>Hesse</td>
<td>A 49 federal motorway, Kassel-West intersection to junction with A 5 (construction of new four-lane road from Schwalmstadt junction to junction with A 5)</td>
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<tr>
<td>Lower Saxony</td>
<td>E 233 (federal highway), Meppen junction (A 31) – Cloppenburg junction (A 1) (widening to four lanes)</td>
</tr>
<tr>
<td>Lower Saxony/Hamburg</td>
<td>A 26 federal motorway, Hamburg (A 1) – Rübke (construction of a new four-lane road, including port ring-road (closing of gap), envisaged as a model under the Private Sector Funding of Trunk Road Construction Act)</td>
</tr>
<tr>
<td>North Rhine-Westphalia</td>
<td>A 57 federal motorway, Köln/Nord interchange – Moers interchange (widening to six lanes)</td>
</tr>
<tr>
<td>Schleswig-Holstein/Lower Saxony</td>
<td>A 20 federal motorway, Elbe crossing (construction of a new road, envisaged as a model under the Private Sector Funding of Trunk Road Construction Act)</td>
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<tr>
<td>Thuringia</td>
<td>A 4 federal motorway, Gotha junction – Thuringia/Saxony state border (structural maintenance)</td>
</tr>
<tr>
<td>Thuringia</td>
<td>B 247 federal highway, Bad Langensalza – A 38 federal motorway (construction of a new two- to four-lane road)</td>
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</tbody>
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The start of the PPP procurement procedures and the exact project configurations depend on when the federal state highway authorities give the construction go-ahead and on the outcome of the value for money assessments. The procurement procedure for the A 10/A 24 project in Brandenburg and the project on the A 3 in Bavaria are currently underway. Other procurement procedures are under preparation.
Public - Private - Partnerships (PPPs) – Federal Trunk Roads

Pilot projects and other schemes

A-model
(Upgrading model)
- Since 2005
- Remuneration by the state on the basis of HGV tolls and depending on traffic levels
- In return, contractor is responsible for construction, operation, structural maintenance and pro rata funding of all lanes
- Usually involves widening to six lanes on busy motorways
- Life-cycle based contract life (usually up to 30 years)
- Length of sections: around 45 km - 75 km
Examples: A 1, A 4

V-model
(Availability model)
- Since 2009
- Remuneration by the state based on availability
- In return, contractor is responsible for construction, operation, structural maintenance and pro rata funding
- Focus on upgrading and structural maintenance of busy motorways
- Life-cycle based contract life (usually around 30 years)
- Length of sections: around 45 km - 80 km
Examples: A 9

F-model
(Named after the Private Sector Funding of Trunk Road Construction Act)
- Since 1994
- Contractor himself collects remuneration from all users based on traffic levels
- Contractor is responsible for construction, operation, structural maintenance and funding
- Limited scope of application (e.g., bridges, tunnels and mountain passes)
- Life-cycle based contract life
Example: Warnow Crossing (B 103n)
Since 2005, the German government has implemented a model known as the A-model, under which the contractor is responsible for construction, operation, structural maintenance, and pro rata funding of all lanes. Remuneration is provided by the state on the basis of HGV tolls and depending on traffic levels. This model usually involves widening to six lanes on busy motorways. Life-cycle based contract life (usually up to 30 years) and the length of sections around 45 km – 75 km are typical. Examples include A1 and A4.

The F-model, named after the Private Sector Funding of Trunk Road Construction Act, was introduced in 1994. Under this model, the contractor collects remuneration from all users based on traffic levels. The contractor is responsible for construction, operation, structural maintenance, and funding. However, the scope of application is limited to projects such as bridges, tunnels, and mountain passes. Life-cycle based contract life is usual. An example is the Warnow Crossing (B103n).

The V-model, or Availability model, was introduced in 2009. It focuses on upgrading and structural maintenance of busy motorways. Remuneration is provided by the state based on availability. The contractor is responsible for construction, operation, structural maintenance, and pro rata funding. Life-cycle based contract life (usually around 30 years) and the length of sections around 45 km – 80 km are typical. Examples include A9.

New generation projects include A3 (Biebelried junction – Fürth/Erlangen interchange), A4 (Gotha interchange – Thuringia/Saxony state border), A6 (Weinsberg interchange – Feuchtwangen/ Crailsheim interchange), A8 (Rosenheim - national border DE/AT), A10/A24 (Neumünster – south of Hamburg-Nordwest junction), A10 (Kassel-West interchange – connection to A5), A49 (Kassel-West interchange – connection to A5), A57 (Cologne – Moers), B247 (Bad Langensalza – connection to A38), A20 (Elbe Crossing (F-model)), A26 (Hamburg A1 – A7).

Second batch projects include A7 (Neumünster Nord – Utho of Hamburg-Nordwest junction), A10 (Krems – nat. border DE/AT), A10/A24 (Neumünster – south of Hamburg-Nordwest junction), A10/A1 (Kassel-West interchange – connection to A5), A57 (Cologne – Moers), B247 (Bad Langensalza – connection to A38), A20 (Elbe Crossing (F-model)), A26 (Hamburg A1 – A7).

Other projects include A28 (Hesse/Thuringia state border – Gotha junction), A1 (Bremer Kreuz interchange – Buchholz junction), A5 (Malsch – Offenburg junction).
Brief project outlines –
First PPP batch, 2005 – 2009

In the first batch of PPP projects, the Federal Government and the federal states awarded contracts for four A model pilot projects (= upgrading projects) to private sector concessionaires. This involves 230 km of concession sections on motorways, of which around 175 km were widened to six lanes. Total investment for construction of the first batch is around 1.1 billion euros. All four A model pilot projects were opened to traffic before the contractually agreed date of completion.

First PPP batch projects:

- **Federal motorway A 8, Augsburg – Munich (Bavaria)**
  - Start of concession: 1 May 2007, concession life of 30 years
  - Concession section: around 52 km (of which 37 km widened to six lanes)
  - Widening completed on 9 December 2010
  - (Contractually agreed date: 31 December 2010)

- **Federal motorway A 4, Hörsel Hills Bypass (Thuringia)**
  - Start of concession: 16 October 2007, concession life of 30 years
  - Concession section: around 44 km (of which approx. 24.5 km widened to six lanes/new six-lane road constructed)
  - Widening/new construction completed on 7 September 2010
  - (Contractually agreed date: 31 December 2010)

- **A 1 federal motorway, Bremen - Hamburg (Lower Saxony)**
  - Start of concession: 4 August 2008, concession life of 30 years
  - Concession section: around 72.5 km (of which 65.5 km operation and structural maintenance)
  - Widening completed on 11 October 2012
  - (Contractually agreed date: 31 December 2012)

- **A 5 federal motorway, Malsch - Offenburg (Baden-Württemberg)**
  - Start of concession: 1 April 2009, concession life of 30 years
  - Concession section: around 60 km (of which around 41 km widened to six lanes)
  - Widening completed on 17 July 2014
  - (Contractually agreed date: 30 September 2014)
Brief project outlines –
Second PPP batch, 2009 – 2017/18

The second PPP batch comprises nine projects with a total of around 540 km of sections under contract and a total level of investment for construction activities of around 3 billion euros.

Second PPP batch projects

- A 8 federal motorway, Ulm - Augsburg (Bavaria)
  Start of concession: 01/06/2011; duration 30 years
  Uniform toll model
  Concession section: around 58 km (of which around 41 km widened to six lanes)
  Widening completed: 28/09/2015
  (Contractually agreed date: 30/09/2015)

- A 9 federal motorway, Lederhose - Thuringia/Bavaria state border (Thuringia)
  Beginning of contract: 01/10/2011; duration 20 years
  Availability model
  Contract section: around 46 km (of which around 19 km widened to six lanes)
  Widening completed: 28/11/2014
  (Contractually agreed date: 30/11/2014)

- A 7 federal motorway, Hamburg – Bordesholm (Hamburg/Schleswig-Holstein) – Construction phase
  Beginning of contract: 01/09/2014, duration 30 years
  Uniform toll model
  Contract section: around 65 km (of which around 59 km operational and maintenance section)
  Planned completion of the widening: 28/12/2018

- A 94 federal motorway, Forstinning – Markt (Bavaria) – Construction phase
  Beginning of contract: 01/02/2016
  Availability model
  Concession section: around 77 km (of which around 33 km new construction)
  Planned completion of the new construction: 31/10/2019

- A 7 federal motorway, Bockenem junction – Göttingen (Lower Saxony) – Construction phase
  Beginning of contract: 01/05/2017
  Availability model
  Concession section: around 60 km (of which around 29 km widening)
  Planned completion of the widening: 30/11/2020

- A 6 federal motorway, Wiesloch/Rauenberg - Weinsberg (Baden-Württemberg) - Construction phase
  Beginning of contract: 01/01/2017
  Concession section: around 47 km (of which around 25.5 km widening)
  Planned completion of the widening: 30/06/2022

- A 1/A 30 federal motorways, Lotte/Osnabrück – Münster (North Rhine-Westphalia)
  Procurement procedure under preparation
  Availability model
  Concession section: around 91 km (of which around 37 km widening)

- A 61 federal motorway, Worms – Speyer (Rhineland-Palatinate) – planned
  Procurement procedure under preparation
  Availability model
  Concession section: around 44 km (of which around 4 km widening)

- A 44 federal motorway, Kassel/Süd – Diemelstadt (Hesse) – planned
  Preliminary coordination with Hesse motorway administration