InfraNews

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09-Feb-2016
For **Stefan Brueggemeier** at VIFG

Why Germany opted for PPPs for its Federal Highways

08 Feb 2016

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Last year a new generation of German road PPPs was launched. Professor Torsten Böger, Managing Director of VIFG (Germany's Transport Infrastructure Financing Company) explains why PPPs are the best option for upgrading and updating Germany's federal highways.

In April 2015, Germany's transport minister Alexander Dobrindt launched a "new generation" of PPP projects for Germany's highways. The new generation encompasses eleven projects, but more are likely to be added.

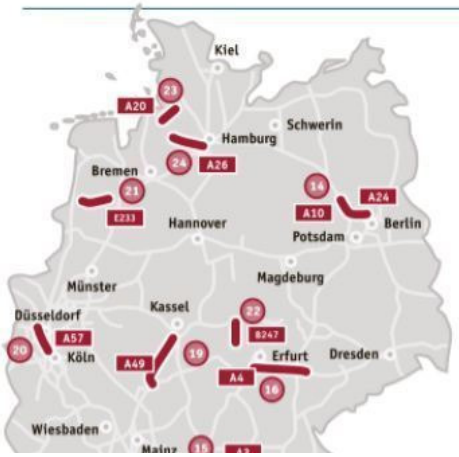
Experiences with federal highway PPPs realised to date are positive. The German government shares this assessment. To date, over 400 kilometres of highway for their construction, maintenance, and operation have been awarded to private firms using PPP models.

At the federal level, Germany has an extensive road network featuring approximately 12,900 km of highways and about 38,900 km of federal roads. With the eleven "new generation" projects, a total of another 600 km of federal highways will be expanded and administered by private partners. The total adds up to over EUR 14bn.

The new generation projects are also characterised by a consistent opening up of financing since sponsors involving institutional investors throughout. Accordingly, different segments of the capital markets such as bond financing or the EU Project Bond Initiative can be used so that new institutional investors and financiers such as pension funds, insurance companies, as well as additional construction companies may participate in the projects. This allows private project financing costs to be minimised, therefore optimising the overall economic feasibility of projects.

Another trait of the new generation is its basic structure as an availability model. And for the first time, PPP projects are not only planned for highways but also for federal roads and include, in addition to new projects and extensions for high-volume highway segments, maintenance and gap closure projects. The prerequisite for project implementation is an existing building right and a positive value for money test.
The A10 / A24 project in Berlin and Brandenburg, was the first "new generation" procurement and began in spring 2015. Additional projects are in the pipeline. However, projects announced prior to the new generation will also continue to be implemented. Accordingly, procurement procedures for the A7 in Lower Saxony and the A6 in Baden-Württemberg are progressing. Financial close for the A94 in Bavaria took place in January of this year.

3rd Batch of PPP-Projects: New Generation



14.	Brandenburg	A10/A24 (AS Neuruppin (A24) – AD Pankow/State Border BB (A10))*	In Tender
15.	Bavaria	A3 (AK Biebelried – AK Fürth/Erlangen)*	In the Pipeline
16.	Thuringia	A4 (AS Gotha – State Border TH/SN)*	In the Pipeline
17.	Baden-Wuerttemberg	A6 (AK Weinsberg – AK Feuchtwangen/Crailsheim)*	In the Pipeline
18.	Bavaria	A8 (Rosenheim – Federal Border D/A)*	In the Pipeline
19.	Hesse	A49 (AK Kassel-West – A5)*	In the Pipeline
20.	North Rhine-Westphalia	A57 (AK Köln/Nord – AK Moers)*	In the Pipeline
21.	Lower Saxony	E233 (AS Meppen (A31) – AS Cloppenburg	In the Pipeline

		(A1))*	In the Pipeline
22.	Thuringia	B247 (Bad Langensalza – A 38)*	In the Pipeline
22.	Schleswig-Holstein / Lower Saxony	A20 (Elbquerung)*	In the Pipeline
24.	Lower Saxony / Hamburg	A26 (Hamburg (A1) – Rübke (including Hafenquerspange))*	In the Pipeline

* Project start is depending on public permission and positive VfM

From Pilot Projects to the New Generation

In Germany, the first PPP projects were initiated around fifteen years ago to achieve greater control over timelines and expenditures than is possible with conventional implementation and to be able to ensure critical maintenance measures and operational services over the life cycle of the projects. This goal has been achieved in federal highway PPP projects realised to date.

In 2005, the Ministry of Transport introduced the A-Model (expansion model), launching the first federal highway concessions as pilot projects. In these models, the private partner bore the traffic volume risk associated with German truck toll revenues on highway segments.

Pilot projects

1.	Bavaria	A8 (AS Augsburg-West – AD München-Allach)	Construction completed
2.	Thuringia	A4 (State Border Hesse/Thuringia – AS Gotha)	Construction completed
3.	Lower Saxony	A1 (AD Buchholz – AK Bremen)	Construction completed
4.	Baden-Wuerttemberg	A5 (Malsch – Offenburg)	Construction completed

Key points

- **Concession to a private partner**
- **Widening from 4 to 6 lanes**
- **Operation and maintenance over a specific period (e.g. 30 years)**
- **Remuneration through toll revenues of the section + start-up financing**

From the public authorities' point of view as commissioning agent, all pilot projects have been characterised by a strict adherence to target costs and deadlines, and all were opened to traffic two or three months ahead of the contractually established timetable. The quality of workmanship and availability of the segment stipulated by the contract has also been achieved in all cases so far. Given the positive experiences with these projects, the Ministry of Transport launched an additional series of PPP projects for federal highways.

Not least as a result of the financial crisis, remuneration based on traffic volumes was replaced with an availability fee for the majority of future projects.

2nd Batch of PPP-Projects

5.	Bavaria	A8 (AK Ulm/Elchingen – AS Augsburg-West)	Construction Completed
6.	Thuringia	A9 (AS Lederhose – State Border Thuringia/Bavaria)	Construction Completed
7.	Schleswig-Holstein	A7 (AS Neumünster-Nord – south of AD HH-Nordwest)	Under Construction
8.	Bavaria	A94 (AS Forstinning – AS Marktl)	Awarded
9.	Lower Saxony	A7 (AD Salzgitter – AS Göttingen)	In Tender
10.	Baden-Wuerttemberg	A6 (AS Wiesloch/Rauenberg – AK Weinsberg)	In Tender

11. North Rhine-Westphalia	A1/A30 (A1 Lotte/Osnabrück – Münster/Nord, A30 Rheine/Nord – Lotte/Osnabrück)*	In Preparation
12. Hesse	A44 (Diemelstadt - Kassel-Süd)*	In Preparation
13. Rhineland-Palatinate	A61 with further sections of A650, A65 (Worms – State Border RP/BW)*	In Preparation

* Project start is depending on public permission and positive VfM

Experiences with Federal Highway PPPs

The are several reasons why federal highway PPPs have been almost exclusively positive. For example the life cycle approach to planning, financing, construction and operation provided by a single operator combined with the contractually guaranteed, long-term availability and quality of a highway segment (contractually stipulated level of service, fixed penalties for poor workmanship or deficient performance, etc.) has proven to be an engine for profitability. This has ensured long-term and far-sighted maintenance management.

An incentive structure based on risk-taking, private financing and a long-term transfer of responsibility to a contractual partner has turned out to be highly effective in nearly every case, resulting in profitable project outcomes. The private operator can also plan and direct the lifecycle of the project technically and economically.

In addition, they can identify risks and take into account what economic impact they will have on the remaining project implementation. In projects to date, from the public authorities' point of view, there have been no construction cost overruns or unmet deadlines. To the contrary, all projects have been completed earlier than contractually specified and the level of construction and organisational operations is of high quality.

This also leads to economic growth effects, since the infrastructure is ready much sooner than in the case of a conventional implementation. And all services are represented transparently, which is an important prerequisite, from the public authorities' point of view, for regarding highway segments as assets.

Another factor for the success and efficiency of federal highway PPP projects is the use of private capital. In the first seven PPP federal highway projects (A-Models) alone more than EUR 2.5bn of private capital has been invested.

And private capital investment not only brings relief to public budgets, but also creates an incentive for efficient project management. Escalating costs and lengthy construction times can therefore be avoided unlike with many large-scale projects. At the same time, long-term contracts ensure a high level of quality over the long run and provide a stimulus for innovation in construction, maintenance and operations.

PPPs critics

Despite these positive attributes, PPP models are often the subject of criticism in Germany. For example, the Federal Court of Auditors continues to view the implementation of federal highway PPP projects with a degree of skepticism, openly questioning the economic feasibility of this procurement model. This criticism has led to considerable uncertainty in the political realm and among the public.

This is surprising when considering that the problems involving conventional procurement has become even more acute since PPPs were first introduced. Investment and refurbishment backlogs have not been reduced, and in some cases have dramatically intensified. Moreover, a life cycle-oriented management of infrastructure and an institutional guarantee of long-term maintenance do not feature in conventional procurements any more than they did fifteen years ago. And, as before, cost risks are still not systematically factored in and budgets and timetables are still not met.

Just how differently PPP measures are evaluated is demonstrated by the frequent criticism of private financing costs. PPP critics such as the Federal Court of Auditors are eager to point to the advantages of lower interest-rate costs associated with public sector financing, concluding from this that it is not possible for a PPP project to be more value for money than one realised with public monies.

But here the essential economic functions of the financing are simply ignored.

In a PPP model, the amount of interest is an expression of the investor's evaluation of the risks associated with the project. This includes project implementation that meets target costs and deadlines, a quality level that matches contractually-specified expectations and the availability of the highway segment over a thirty-year period. And, if applicable, relative to expected revenues. This produces a strong incentive to manage the project closely, to implement a comprehensive risk management plan and to establish comprehensive and transparent process oversight.

By contrast, interest rates with public sector financing are of course unquestionably "cheaper." But

as a result of the self-insurance approach of the public sector, the amount of costs associated with financing does not indicate a project's degree of risk.

And for this very reason, the public sector financing process does not provide an incentive for administrators to create a comparable control mechanism, a project-specific risk management plan and tight project control as with PPP projects. However, since project risks do not simply disappear when the public sector is involved in construction, conventional projects also pay the price for supposedly cheap budget financing: specifically in terms of prolonged construction timelines, significant cost overruns, and workmanship defects. This mechanism can be seen with many public sector projects.

Economically speaking, the supposedly higher financing costs of the private sector are the insurance premium for completing a project on time and on budget. The assumption that the private sector must offset these cost disadvantages through more efficient construction or operations in order to be economically feasible is therefore incorrect. Quite the contrary: the more expensive financing costs of the private sector guarantee the project its secure financing, tailored to an optimised construction schedule.

Critics are not able to substantiate their frequently expressed doubts regarding the economic feasibility of PPP projects when considered in this way. And the Federal Court of Auditors also recognises the adherence of PPPs to costs and timelines.

Generally speaking, federal highway PPP models are a successful means of implementing major projects in this sector. Experiences with projects realised to date are clearly positive. As a result of high-quality workmanship and in particular through a strict adherence to budgets and timelines, transport projects with high economic value can be implemented early and profitably. With the new generation projects, this successful path will be continued.
