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# ad Hoc Workshop PPP Schemes and Railways Financing



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# Introduction

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Private Public Partnership (PPP) schemes have long been established as efficient tools for governments. At this particular point in time, they also represent a unique investment opportunity. In a period of economic crisis, governments may be reluctant to invest in costly infrastructure projects and may put existing projects on hold. PPP schemes could be the answer to this dilemma. The most important criterion that influences the success of such investment schemes is a clear social and/or economic need for the utility. This need is what justifies the potential profits and therefore the success of the investment.

Railway companies have, since their founding, had to deal with both investments and operations. As State companies they operated on a monopolistic basis and were the only clients of their own massive infrastructure investments. This resulted in huge deficits and organizations without profits. Here it should be added that governments often used railways as “personnel pools”, servicing political interests and further burdening their deficits. Furthermore, the provision by railways of other “social services” such as hospitals, hotels, etc, created massive organizations which, in many cases, lost focus.

The workshop on PPP schemes and railway financing, organized by UNECE, in cooperation with the Community of European Railway and Infrastructure Companies (CER) and the International Union of Railways (UIC), on 7<sup>th</sup> November 2012 in Geneva, showed that PPP schemes in railway projects are not common practice and railways have not benefited enough from these kinds of investments. The reasons for this are many, but the following were highlighted during the workshop:

Railway organizations of Member States of the European Commission are ahead in the challenge of implementing the directives arising from the four rail packages. Some of these challenges include separating operations from investments, the use of infrastructure by private rail operators and covering high maintenance costs. Even inside the European Commission, cases vary. The Railway organizations of Member States from the northern part of Europe are dealing mainly with the improvement of the quality of their services and the expansion of their business. There are some cases where railways had used PPP schemes for high speed line investments. Southern European countries are suffering from the economic crisis and their main objective for railways is the elimination of deficits. The rail organizations of the eastern part of Europe, with well-established but old network and infrastructure, are struggling to

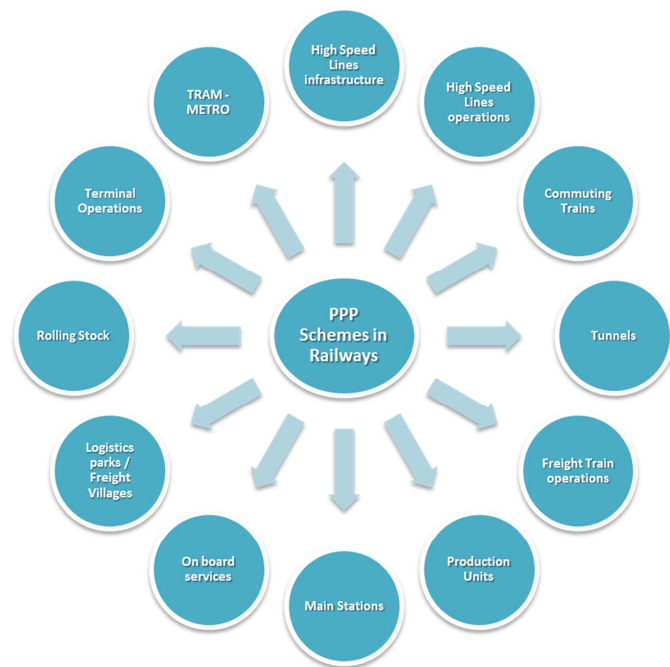
survive between the implementation of EU directives, the high maintenance costs and the need for modern rolling stock and an organization that generates profits.

Railway organizations of Member States in the Caucasus and Central Asia are facing the challenge of restructuring their businesses and becoming profitable. They have retained their monopolistic statuses, operating under their Governments' umbrella. . However, the need to further develop their services, expand their businesses and become profitable through sustainable development is clear and they remain stable objectives. PPP schemes are not feasible, mainly because Governments have not yet decided to offer part of these State organizations' assets to the private sector.

Some unique examples presented during the workshop can be considered as best practice: the investments under PPP schemes in India. Railway organizations could benefit from these case studies, in particular regarding possible areas for PPP schemes implementation.

The areas in which railways have already implemented PPP schemes for their investments are varied:

1. High speed line infrastructure / operations;
2. Commuting trains;
3. Freight train operations;
4. Production Units;
5. Main stations;
6. On board services;
7. Logistics parks / freight villages;
8. Rolling stock;
9. Terminal operations;
10. TRAM – METRO;
11. Tunnels;



It is important to note that even though cases of investments under PPP schemes in railways are few, the ranges of investments are quite many. This justifies behind why railways should urgently explore PPP schemes' potential. In many cases, such as freight villages, main rail stations, production units, etc., railways improve their services, expand their businesses and create extra sources of profits without the risk involved in investment. For instance, in most European capitals the main rail stations are old buildings which also serve as tourist attractions. The renovation of such buildings and their transformation into shopping malls, with catering and hotel facilities costs a lot of money. Railways

could transform such “inactive” assets to alternative, direct and indirect, sources of profits. Direct, because tenants occupying space in the station pay rent to the railways. Indirect, because such additional services would make passengers more keen to use railways’ services.

The second, crucial element of a PPP scheme investment is the existence of funds. International financial institutions (IFIs) base their decisions on which projects to fund on specific criteria that railways should know and apply. These are:

1. Overly optimistic cost estimation;
2. Unforeseen technical problems;
3. Overly optimistic timetable;
4. Teething problems due to innovative technology;
5. Complex projects with large numbers of technical interfaces: track work, electric supply, signaling, telecom, etc;
6. Industry concentration: only a few players;
7. Incomplete land acquisition process;
8. Overly optimistic demand forecasts;
9. Insufficient political support;
10. Insufficient public support, including NGOs;
11. Open environmental issues;
12. Inadequate project preparation:
  - a. Political support for PPP solution;
  - b. Is PPP the best solution?
  - c. Inadequate legal framework;
13. Capital intensive projects; raising money is challenging and expensive;
14. Insufficient revenues (optimistic forecasts) in case of demand risk allocation – is the institutional framework adequate to allocate demand risks?
15. SPV shareholder structure:
  - a. Are the shareholders strategic investors, i.e. rail technology producers, construction companies?
  - b. Is the senior lender / underwriter involved in equity?
16. Are the risks of such a capital intense project delivering value for money e.g PSC?
17. Inadequate risk allocation;
18. Is the possibility of financial rebalancing adequate?

# Public-Private Partnerships: a Rail Sector Perspective

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## ***Investment in rail infrastructure: a strategic imperative***

Rail can play an important role in helping to shift surface transport towards a more sustainable path, both in terms of greenhouse gas emissions and in terms of oil consumption. Europe is especially suited for an expansion of rail transport given its comparatively high density of human and industrial settlements. Furthermore, Europe's very high dependence on energy imports in general, and on oil imports in particular, makes such a shift all the more necessary: Europe today remains highly vulnerable to oil price shocks. The recent expansion in the production of unconventional resources of both oil and gas offers an important reprieve from more serious problems for the global economy, but these developments are occurring chiefly in North America and are unlikely to help reduce Europe's dependence on expensive and potentially insecure sources of oil imports.

As highlighted in the European Commission's 2011 Transport White Paper, a shift to rail seems especially attractive for intermediate and long distances, for both passenger and freight. High-speed rail can compete favorably with aviation over distances of 300-900 km. The success of high-speed rail in North-West Europe (e.g. Eurostar, Thalys) is testament to that potential. Concerning freight, the example of the United States shows that rail can be the dominant transport mode for long distances: according to the 2007 US Commodity Flow Survey, rail carries over 50% of freight on a tonne-kilometre basis for distances above 250 miles (402 km).

In order for the European rail sector to be able to supply the necessary volume of services, rail infrastructure capacity needs to be expanded. However, European public budgets face severe constraints. In the short-term most European governments still struggle with the aftermath of the Great Recession of 2008-2010 which led to substantial increases in public debt on top of high pre-existing debt

levels. Europe's demographic decline will increase the redistributive obligations placed upon governments in the already very substantial areas of health and social spending. Europe thus faces a serious threat of economic decline unless non-politicized sources of funding can be found.

As a result, the natural long-term evolution of infrastructure financing is towards ever-greater recourse to user-financing. This is already a reality in the railway sector, where track access charging is applied systematically across Europe. Road infrastructure financing still needs to adjust to this new reality, through a systematic adoption of distance-based charging to cover infrastructure wear-and-tear and environmental externalities. In the intervening period the rail sector faces an uphill struggle in terms of inter-modal competition. State funding and co-funding therefore remain essential in transport infrastructure in general and in rail infrastructure in particular. The imperative is therefore to find ways of 'doing more with less'. This is where Public-Private Partnerships come in.

### ***Public-Private Partnerships in European rail projects***

PPP experience in the European rail sector is relatively limited compared for instance to road projects. Nevertheless, a number of projects have been completed successfully and it is possible to identify a few basic patterns. Table 1 contains an overview of key characteristics of selected rail PPP projects in Europe. The reader should please note that this overview is work-in-progress – further checking of data was still in process at the time of writing of this article.

PPPs are primarily applied for premium parts of the infrastructure, in particular high-speed lines, airport links and seaport links, station construction and renovation, and signalling. Also, the majority of rail PPPs are of the DBFM type (Design-Build-Finance-Maintain). This normally means an availability payment model: the State remunerates the Special Purpose Vehicle for making capacity available, with possible further modulation of payments based on additional quality criteria. The infrastructure manager collects the revenue from track access charges as with any other part of its network. In sum, the traffic risk is borne by the State directly, and by the infrastructure manager.

A minority of projects are of the BOT type (Build-Operate-Transfer). In that case the traffic risk is borne by the private partner who receives the revenue from track access charges plus (possibly) additional remuneration for meeting additional quality goals, including availability of capacity.

France currently leads the way in terms of PPP projects, having initiated several high-speed projects and one signaling project in recent years.

**Table 1 – Overview of selected rail PPP projects in Europe**

Project	Time from design to completion	Contract duration	Route length	CAPEX	Public co-funding (grants)	Type of PPP
Stockholm-Arlanda Airport	1993-1999	41	39	SEK 4.1 bn	SEK 2.4 bn	BOT
HS1 Channel Tunnel rail link	1996-2003 (2007)	90	109	GBP 5.8 bn	GBP 2.01 bn	DBFM
Oresund road-rail link	1991-2000	25-30	38	EUR 2.0 bn	NA	DBFM
HSL-Zuid	2000-2007	25	100	EUR 6.0 bn	EUR 0.11 bn / year	DBFM
Perpignan-Figueras HS	2005-2009	50	45	EUR 1.1 bn	EUR 0.6 bn	BOT
Diabolo rail link Brussels	2007-2012	35	3	EUR 0.54 bn	EUR 0.25 bn	DBF
Liefkenshoek rail link Antwerp	2008-2013	38	16	EUR 0.84 bn	EUR 0.05 bn / year	DBFM
Tours-Bordeaux HS (HSL SEA)	2011-2016	50	340	EUR 7.8 bn	EUR 4.0 bn	BOT
GSM-R France	2010-2015	15	14000	EUR 1.5 bn	EUR 0.16 bn	DBFM
Lisbon-Madrid HS	2009-2013	40	165	EUR 7.8 bn	NA	DBFM
Nimes-Montpellier HS	2012-2017	25	80	EUR 1.8 bn	NA	DBFM
Montpellier Odysseum Station	2012-2017	30	-	100/120 M€	50%	DBFM
Bretagne-Pays de la Loire HS	2011-2017	25	214	EUR 3.4 bn	EUR 1.85	DBFM



With the exception of individual stations, the projects are relatively large, usually in a range of 0.5 to 8.0 billion euro. Project life-times are long, very often above the “standard” 25 year timeframe seen in many other sectors of the economy. This is a reflection of the long life-time of rail infrastructure. Construction times on the other hand are often relatively short, and the experience to-date suggests that PPPs are helpful in achieving on-time completion. For most projects State co-funding is in a range of roughly 40% - 60% of total capital expenditure. Governments should therefore not assume that rail PPPs offer a path towards a full withdrawal of state funding (which in any case would not be justified from a broader policy perspective). Furthermore, the general investment needs of railway networks should not be forgotten, e.g. renewals or upgrades of existing lines. Those needs are usually addressed through standard procurement, and this needs to continue. Further reliance on PPPs for premium projects (in rail, in road, or any other sector) should free up resources for traditional procurement.

### ***PPPs and track access charges***

Rail PPPs need to fit in with an already existing and rather well-developed system of infrastructure user charging. According to EU rail legislation, in the general case, track access charges must be non-discriminatory, related to wear-and-tear in line with the notion of ‘cost directly incurred’, and may include mark-ups above that level in line that the ‘market can bear’. However ‘higher charges’ can be applied in the case of new investments. Article 32 (3) of Directive 2012/34/EU states the following:

*“For specific future investment projects (...) the infrastructure manager may set or continue to set higher charges on the basis of the long-term costs of such projects if they increase efficiency or cost-effectiveness or both and could not otherwise be or have been undertaken. Such a charging arrangement may also incorporate agreements on the sharing of the risk associated with new investments.”*

The legal framework is therefore flexible. Rail PPPs can be designed with or without any specific use of or changes to the general infrastructure charging system. Availability payments can be used while the infrastructure manager continues to receive the revenue from the track access charges, which may be set at the normal level, or at a higher level (in line with the principles above that are contained in the legislation). On the other hand the revenue from the charges can also be used, partly or fully, to

remunerate the private partner in a PPP context – and hybrid solutions between these two cases are also possible.

### ***Policy discussion***

As can be seen from Table 1, a small wave of rail PPP projects should come to completion in France in 2016-2017. It will be very useful and important to analyse these projects in detail at that time and draw lessons from them. On the other hand, it should be noted that practical expertise in rail PPPs is still relatively rare. Many European countries have no experience of rail PPPs at all – and building up the necessary skills base for a successful handling of such projects must be taken seriously. On a preliminary basis, project outcomes in other sectors of the economy as well as the limited experience with rail PPPs suggest that speed and timeliness of the construction phase is an important advantage of using PPPs.

On the other hand it is important to note that PPPs are not generally or systematically superior to other forms of procurement in terms of total project costs. Denmark, for instance, has had good experience using State Guarantees rather than PPPs. In Sweden, public debt financing is seen as feasible and good value-for-money thanks to the availability of low-interest loans from Sweden's central bank (*Riksbank*).

In sum, PPPs can deliver value-for-money and more timely completion under good circumstances, especially for relatively large 'premium' projects. Further development and dissemination of the relevant legal, financial, and economic expertise at national level is essential for those countries that wish to develop rail PPPs. This includes not only the skills and the people needed to set up successful PPP projects, but also both the ability and the willingness to carry out objective economic appraisals of the actual costs and benefits of different forms of procurement for a given project before choosing any particular option. International organizations and international financial institutions should support this.

# PPP Model for Rail projects

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## **The Policy Development**

The Project will need to align with the Government's key policy objectives. Key Objectives should include:

- I. the recognition and support of the Host Country's transport policy and planning goals;
- II. ensuring the financial strategic and operational participation of parties other than the Host Country in one or more aspects of the design, construction, operation and maintenance of the Project;
- III. achieving a framework for the privatisation of the Project which draws heavily on the creativity of the private sector;
- IV. the creation of a proper interaction with the "market place" in developing the Project framework;
- V. the procurement of optimum service levels and maximum consumer satisfaction while obtaining maximum value for money from privatisation with an appropriate risk transfer in the development and operation of the Project;
- VI. completion of the Project as soon as possible, on schedule and within budget;
- VII. the balance of commercial risk to both the public and private sectors, and therefore by implication the project would be economically viable;
- VIII. allowance for the state to have sufficient control over the Project, whilst recognising the requirements of the private sector to optimise its own efficiencies and economies;
- IX. enabling the Project to have minimal environmental impact and be properly assimilated into the urban and rural landscape;
- X. obtaining all required planning and other consents so as to permit construction to commence as soon as possible;
- XI. allowing the private sector to harness a robust and deliverable financing to ensure that the Project is built and operated on time and budget and can be integrated with the rest of the Network (in the case of Europe the Trans European Network) as soon as possible;

## **The Approach**

A Government can achieve its objectives in a number of ways and the options listed below represent the broad cross section but the actual implementation could be by any variant or blend of those options.

In considering any infrastructure it is also necessary to consider the environment within which that infrastructure is to operate. Many industries have, up to now, been run on a vertically integrated basis. For instance in the electricity sector generation, transmission and distribution were all included within one organisation. Railways have included infrastructure provision, operation, passenger and freight services and the supply of rolling stock, again within one organisation. Developments over the last twenty or so years, however, have led to unbundling. In the case of energy, this has led to a segregation between generation, transmission and distribution. A similar approach has been taken to railways including the unbundling of rolling stock from the supply of passenger or freight services.

### ***Transport Options***

On one approach, the Government could incorporate a special purpose company whose shares were initially owned by the public sector. That company would procure the design and construction, completion and operation of the infrastructure. Where plant (including rolling stock if appropriate) was required, that too would be acquired by the special purpose company. Once the special purpose company was shown to be income producing to a satisfactory level then there could be a sale by Government of the shares in the company, whether in whole or in part. The disadvantage of this approach is that whilst the special purpose company is borrowing funds and is owned by the public sector this will normally be treated as a public sector obligation. On the other hand funds can be released for further transactions once there has been a successful share offer and sale.

Another option is that having established a special purpose company, before borrowing to finance the project commences, the public sector could require contractors and suppliers to buy shares in the special purpose vehicle. To the extent that the special purpose company was not considered to be controlled by the public sector, the borrowings of that company ought to be treated as falling outside the public sector borrowing requirement. A further advantage of this technique is that it may well bring in private sector management skills at an earlier stage.

A further variant is that the public sector could design and construct the project and then sell the project assets to the private sector either during or after construction. Whilst this technique has been adopted both in Portugal and Morocco in relation to power stations as this was not planned at the time that the schemes were conceived the construction contracts and the like were not easily assignable to the private sector purchaser.

A further scheme is where the civil engineering works are carried out by the public sector and the operational aspects are added to by the private sector. This was the approach adopted by the Netherlands for their high speed link but the civil engineering works were carried out under a separate regime as a result of which the procurement did not correlate with the procurement of the track, catenary system and control systems. As a consequence there were delays and costs to the public sector.

Finally there is the more recognized route which is where the public sector sets out its minimum requirements and invites the private sector to bid to design, construct, finance, operate and maintain the project although in reality the public sector will have to contribute funds as the income is unlikely to be sufficient to cover O&M costs and fully repay capital used for construction.

### ***Achievement of value for money***

There are a number of instances throughout the world, where what the state thought was to be desirable was found not to be so desirable. During the 1970s and late 1980s having an aluminium smelter or a dry dock was thought to be a good thing in a number of countries. Unfortunately by failing to take into account what was happening in other countries a number of these schemes proved to be rather expensive with no real underlying commercial success.

In that respect a key issue is projections of usage. During the development stages of High Speed 1 (formerly CTRL) the UK Government received certain warnings as to the ability of the private sector to take usage risks. Nevertheless a policy decision was made; when the project was taken to the lending market the projected passenger volumes were not being met, financing became difficult and in the end required further substantial government support. On the other hand the project has brought about substantial development of poor and run down inner city areas and thus some of the monies expended by government have produced socially desirable outcomes. In addition there was some alleviation of the capacity constraints which existed on the Kent rail lines.

In the case of High Speed 1 part of the forecasting assumed passenger traffic from North of London. However the experience of de-regulation of air traffic as experienced in the USA was not carried over within the European context and therefore increased the overall project optimism bias as the impact of cheap direct flights into Europe from regional airports was not factored in. ( see also Bent Flyvberg's papers on optimism bias)

### ***The Approach to Risk***

In the cases of both High Speed 1 and the Dutch HSL, CMS prepared a risk register which was added to by the other consultants, financial and technical. Then with key stakeholders from the public sector (representatives of the affected ministries) the risks were gone through, the preferred allocation and sharing noted, a policy framework developed and then discussions with the private sector commenced. In the case of HSL, a web-site was developed and the private sector invited to give comments to an address given on the web-site. Then the tender process was begun. Whilst the comments received in both cases were not sufficient to change certain elements of government policy, nevertheless it did create sufficient confidence in the process for at least four strong consortium bidders to be formed in each case.

## The Netherlands -Two Case Studies: HSL-South and RegioTram Groningen

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### **Introduction – the importance of PFI in the Netherlands**

Since 1999, PFI has landed in the Netherlands. The first project was the HSL-South project, to be discussed in this paper. Subsequent projects included seven road projects closed until today, one waste water treatment plant and then accommodation projects, including detention centres, tax offices, ministries, a museum, two schools and several multifunctional buildings. After a slight hiccup between 2001 and 2005 and under the influence of a standard policy which requires a PPC-test on large capital investment projects exceeding a certain value, most notably the Ministry of Transport has launched an impressive pipeline of projects, including roads and a number of locks, the largest one with a capex value of € 800 million.

Since 2005, the Dutch government has been developing a standard DBFM contract, both for housing as for infrastructure projects, as well as standard tender guidelines.

The government is a strong supporter of privately financed PPP projects, since in 2010 a report was published which evaluated the projects tendered until then. That report demonstrated the value for money those projects had helped creating.

In the Netherlands, ESR requirements have never been the driving force for projects taking the PPP-route (such as is the case in Belgium). The value for money principle is the key driver for each projects of which it is decided to follow the PPP-route.

When using the acronym "PPP", reference is made to DBFM- and DBFMO-projects. In the Netherlands, at least not recently, the "concession" is not a project delivery method which has found applicability. That being said, currently a study is undertaken to build a new portion of the A15 road as toll road.

As said, standardisation has been well developed here, with contracts that have proved to be bankable and widely accepted, with an AAA-rating and a steady deal flow, currently the Netherlands is ranking very high on the list of potential investors and lenders.

That being said, the credit crisis has hit The Netherlands too. In this regard, alternative credit funding is looked into seriously. In a road project recently closed, the N33, index linked debt funding was applied and APG, the main pension fund, provided debt funding. Meanwhile, institutional investors are looking into new structures, project bonds, credit enhancement, and vehicles such as Pebble<sup>1</sup> are seriously being considered or used. At the same time, the government from its side provided milestone payments up to 50% of capex value to reduce the burden of having to come up with too much (long term) debt.

So, PPP is here to stay.

That all begun in the early nineties, with the HSL-South project to be discussed. However, on a regional level, PPP is still difficult to manage, as will be demonstrated from the RegioTram project.

## ***HSL-SOUTH***

### **General**

The High Speed Link – South is a 125 km long new high speed train line. It runs between Amsterdam Central Station and the Belgian Border. The actual new line is between Schiphol Airport and Rotterdam and then between Rotterdam and the Belgian border.

Track gauge is 1,435 mm. The electrification is 25 kV.

The total investment amounted to € 4.55 bn.

It opened in 2009 after a long delay, mainly caused by political discussion regarding signalling systems: ERTMS was a standard not quite developed at that time.

The line is operated by:



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<sup>1</sup> [http://clients.squareeye.net/uploads/ipfa/ICM-16147729-v2-PEBBLE\\_-\\_IPFA.pdf](http://clients.squareeye.net/uploads/ipfa/ICM-16147729-v2-PEBBLE_-_IPFA.pdf)

- Thalys which runs a HSL-connection between Amsterdam and Paris (Schiphol – Paris in 3:04 hours)
- Fyra which runs a HSL-connection between Amsterdam and Brussels (Schiphol-Paris in 1:34 hours).

The latter connection started on 9 December 2012 with new rolling stock supplied by AnselmoBreda of Italy. The trains were delivered far too late. Currently, they cause unacceptable failures: 50% of the Fyra trains does not arrive on schedule or at all, due to technical issues. For instance, the Fyra train requires a continuous 3G connection with traffic control and that is simply impossible on the HSL-South. On the track Schiphol-Rotterdam, there is no GSM, GRPS or 3G connection for 50% of the time. That was simply not in the specifications for the line, which – when these were developed in the late nineties – did not take into account the anticipated development of mobile connections.

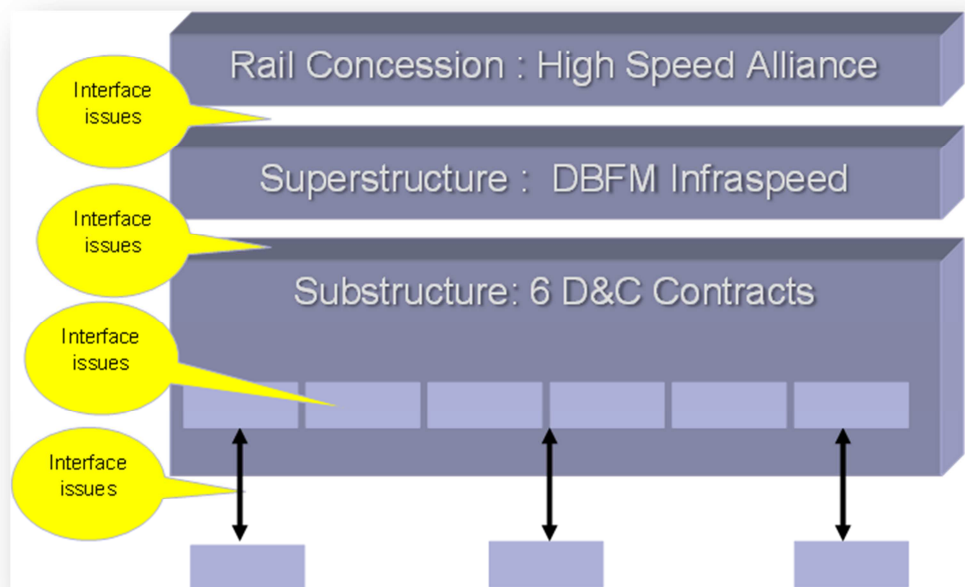
These sort of issues all stem from the fragmented project structure.

### **Project structure**

The project consists of several layers.

The first (literally lowest) layer is a set of 6 D&C contracts, involving the substructure, including all tunnels and bridges and the connections between existing rail lines and the HSL-South.

The second layer is the actual DBFM-contract for the infrastructure provider. It included a concrete subslab, rail, signals and safety systems and electrification. The



NPV of that contract is around € 500 million. It was closed in 2001 after a tender notice dated in 1999. The DBFM lot was completed within budget and within time. This contract was awarded to the consortium Infrasppeed, consisting of Fluor, Siemens, Royal BAM Group, Ballast Nedam and Innisfree.



The DBFM contract was based on the UK SoP1 model. The authority legal advisers were Cameron McKenna. The current Dutch DBFM standard is far less complex.

The final layer is the actual high speed concession. It was awarded to High Speed Alliance, a joint venture between Dutch Railways and KLM. However, the price paid was far too high and the Dutch Ministry of Transport had to intervene in 2011 to save the concessionaire from bankruptcy.

### **Issues**

The fact that there are so many interfaces – clearly shown in the diagram – is in fact the single main cause for almost all of the issues which arose on the project. There were horizontal interface issues: between each of the substructure lots; there were vertical interface issues: between each of the substructure lots and the infrastructure provider. And finally the interface between the safety requirements, demanded by the Dutch government and the rolling stock.

Although the DBFM-part, as stated, was completed within time and budget in 2007, the Dutch government had to pay the infraprovider their full availability payment without receiving any concession fee for two full years because the trains did not yet run due to further specifications required by the Dutch government. Furthermore, the Dutch government took (it had no choice) all interface risks connected to the complex structure.

One could, of course, ask whether all of this could have been prevented by – for instance – tendering the contract as one lot: substructure, infraprovider and concession.

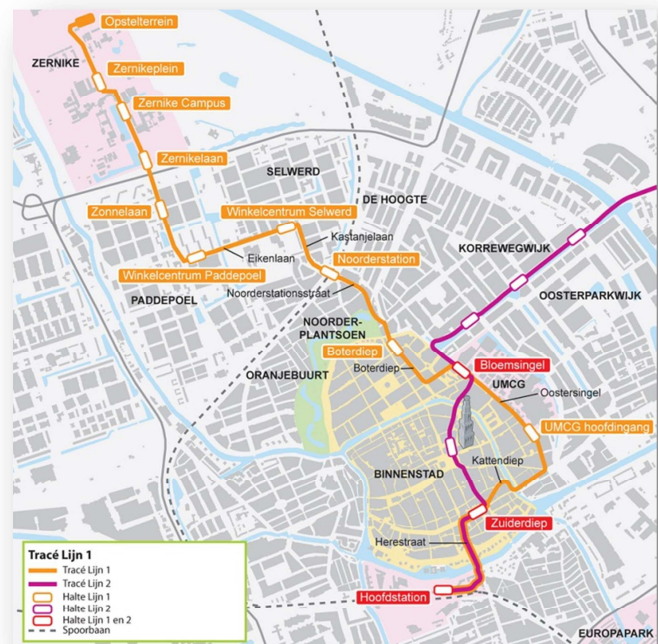
Since this was the first project of this kind in the Netherlands, both in terms of size, complexity and in structure, one could seriously doubt if the Dutch government would have had the "power" to manage such structure.

However, it works and in several years' time, all problems will have been forgotten.

### ***Regiotram project groningen***

#### **Introduction**

In 2007, the Province and the Municipality of Groningen formed a joint project organisation for the preparation and tender of a new, Greenfield, tram project. The tram was going to be servicing two lines, both from the central station of the city of Groningen, to two university complexes,



passing the University Medical Centre. The trams were thought to be a crucial part of public transport development, given the anticipated increase of passenger demand over the period 2015 – 2020 and the saturation of the inner city with bus transport already being experienced at that time.

The trams were expected to commence service in the Summer of 2016.

As of 2020, the idea was to connect the trams to a regional network, thus the name "Regiotram".

After long preparations, the project organisation in December 2010 published a contract notice in the TED for a DBFMO-contract, including the supply of rolling stock and public transport services. It was meant not to include volume risk, hence the choice for DBFMO.

Initially, three candidates expressed their interest. After one dropped of, the competitive dialogue was concluded with two remaining consortia. One consortium included Alstom and Connexion, the other included Arriva while it had chosen Siemens for rolling stock.

The project had an budgeted value of € 450 million (NPV).

On 28 September 2012, the tenders were due in.

However, two days before, the municipality of Groningen, suddenly decided there was no political support for the project and cancelled its cooperation.

The project was finally abandoned on 11 December 2012. It is not known who would have won the tender.

### **Contract**

All tender documentation was published on [www.regiotram.nl](http://www.regiotram.nl). From this site it can be seen that the contract tendered was based on the national mode DBFM contract for infrastructure. Some improvements were made so to cater for the different nature of the project (tram rather than road) and for some innovation.

The EIB was fully supporting both bidders.

As mentioned the tender procedure was based on the competitive dialogue. During the first two phases of the dialogue, the dialogue was structured so to enable the contracting authority to optimise their output specifications and the contract. The remainder part of the tender was used to let the tenderers prepare their management plans and prepare their bids.

### **Lessons learned**

DBFMO projects are complex. Regional authorities are not used to (regular) use of these. In order for a regional authority, including their civil servants, boards and councils, to fully understand the implications of using DBFMO as a project delivery method, training and good education are essential. Also, such project require a broad support, also from local stakeholders and the opposition.

Finally, tenderers spend a lot of energy and funds in preparing tenders for such projects. After Groningen, they will not likely participate in such projects if they will not receive a fairly reasonable compensation for their efforts should the authority decide to cancel the tender. In Groningen the compensation amounted to € 2 million whereas each consortium reportedly spent in excess of € 8 million to prepare.

# PPP Projects for the Railways Network in France

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The « core business » of the Major & PPP Projects Support Service:

- (i) Contract Management of PPPs, after closing;
- (ii) Emerging Projects and studies for next PPPs.

The following summary illustrates the experience of RFF in PPP projects and answers some simple questions : Why PPPs projects ? How ? What for ? Where do we stand ?

In France, we have 5 projects under PPP scheme; 4 were signed between March 2010 and June 2012:

RFF Majors Projects	Contracts Type	Planning	Amount of the transaction	Contract Duration
GSM-Rail	DBFM Availability payment	Closing in March 2010	1,5 b €	15 y
HSL SEA (Tours / Bordeaux)	Concession contract	Closing in June 2011	8 b €	50 y
HSL BPL (Le Mans / Rennes)	DBFM Availability payment	Closing in July 2011	3,4 b €	25 y
HSL CNM (Nîmes / Montpellier)	DBFM Availability payment	Closing in June 2012	1,8 b €	25 y
ODYSSEUM (New Railway Station in Montpellier)	DBFM Availability payment	Tender launch in July 2012	75 M€	30 y

We have a specific law for public authorities who wants to build buildings and infrastructures, so called « loi MOP » (loi n° 85-704): it means public financing, public procurement and a lot of constraints in the project management. PPP is one of the answers to those constraints; in case of PPP, you don't have to apply « MOP » law. RFF has the will to continue keeping this two schemes, and use PPPs when it appears relevant.

There are two different scheme in France (due to legal framework) to make PPP:

- I. a DBFM scheme, with availability based-contract and paiement;
- II. a concession (or BOT) scheme.

For the railway sector, tolls are:

- I. paid directly by trains operating companies (TOC) to the SPV in a BOT scheme ;
- II. continue to be paid at RFF, railway infrastructure manager, in case of DBFM contract.

Before each projects, RFF made an assessment of the project, with some technical and financial assumptions. The PPP scheme must create « Value for Money » (VfM) for the public sector, and for the citizens.

The advantages of a PPP:

- a. Most part of the project risks are transferred to the private sector, included traffic risk for some projects (HSL Tours-Bordeaux);
- b. Respect of delays and costs, through a turnkey contract;
- c. Optimization of the project with a Life cycle cost objective;
- d. Decrease of public funding (circa 45 % on HSL Tours-Bordeaux project) and no subsidies during operating period;
- e. Jumbo projects may be launched;
- f. The PPP scheme allow to realize several projects in the same time (4 HSL in France 2012-2017);
- g. Competition during tender process;
- h. Innovation of the private sector.

## Thriassio Pedio: Issues and challenges

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### **Introduction**

«Thriassio Pedio» basically consists of an effort by the HRO: Hellenic Railways Organization to develop a freight transport, to relocate the maintenance factories of the «Redis» area and to develop a multimodal freight center: rail, truck and ship with connection to «Ikonio» port (Piraeus port). The effort is co-funded by the EU, along with a long term concession scheme.

Maps and photos of the area and project are provided in the appendix.

### **Objectives and functions**

The objectives and functions in such infrastructure as defined by the HRO, who is the initiator and owner, can be described briefly as follows:

- I. Railway network connection with Piraeus port (Ikonio port), a missing link of the network for decades.

- II. Intermodal connectivity (Ship, rail, road).
- III. "Thriassio Complex: Freight Station and marshalling yard"(Railways facility: Freight station, Warehousing, Logistics, Intermodal connection mainly with trucks, Rolling stock maintenance factory, railway passenger station, bus depot etc).
- IV. "Thriassio private freight centre" (Private companies warehousing, logistics and door to door distribution in the greater Attica area). This centre will function as a container and logistics hub, linked by rail both to the Neo Ikonio cargo port, in western Piraeus, and to the cross-country motorway Patra-Athens-Thessaloniki - Evzoni (PATHE).
- V. This project is under construction in a land plot area of 1,750,000m<sup>2</sup>, and is anticipated to be fully operational by 2014.

### ***History***

In order to understand the issue a brief history of the evolution up to date, is presented in two levels, the specification of the «Master Plan» first and the development of different «Call for tenders» for implementing the PPP.

#### **History (Master Plan)**

So the HRO proceeded to the following actions over time to determine the size and function of the project:

- I. 1970 HRO long term investment objectives concentration of railway infrastructure operations, the creation of freight terminals, marshalling yards and other facilities servicing of rail freight.
- II. 1976 HRO with its own resources made expropriation of the area.
- III. 1984 the master plan of the complex by the Romanian Society Contransimex.
- IV. 1999 new Master Plan adapted to modern trends, prepared by the German company DE CONSULT.

#### **History (Call for tenders)**

Since the Master Plan was considered the appropriate and as the European Union but also the HRO already considered essential and obvious the need to implement the project, the following call for tenders were implemented, combined with the purely railway project and the PPP part of private business exploitation:

- I. 15.11.1996 original decision of the E.U., 60 million euros funding and completion 31.12. 2000.

- II. 22.11.2000 E.U. increases the amount of funding to 125 million euros and completion 31.12.2006. (E.U. financing decision associated with the concession with a private investor for the Freight Centre.)
- III. 2001 HRO announced a tender to find a financial advisor of 3,95 million euros budget and thus received from the E.U. planned advance of Community Financing.
- IV. 16.07.2002 call for tenders was conducted by HRO. (The evaluation of the bids made after 6 months, but after objections from of tenders, was declared unsuccessful). As this was a condition and was not achieved by the Greek authorities until 21.03.2003, the E.U. funding stopped.
- V. 2004 after further delays, decided to establish a new subsidiary of HRO (THRIASIO S.A. was renamed in 2005 to Freight Centres Inc.).
- VI. 2004 call for expression of interest for the lease of 7 parts of the property to private investors who would undertake the construction and operation of warehouses. The invitation to tender was canceled before the tender submission.
- VII. 12.12.2005 the property transferred to Freight Centers Inc. in order to find private investors by a new call for tenders.
- VIII. 2006 call for tenders, after that, payments from the E.U. were possible for projects ERGOSE S.A.
- IX. 23.11.2006, were amended the terms of E.U. financing setting a new amount of 90,379,999 € while extending completion date until 31.12.2009. (Condition of eligibility of expenditure the private operation of the Freight Center.)
- X. July 2007, as part of the restructuring process of HRO subsidiary Freight Centres Inc., was absorbed by the GAIAOSE S.A., which continued the contest. The final binding offers were submitted in December 2007. After significant delays due to conflicting views on of tenderers tensions between the Greek courts and the European Commission, the proclamation of the provisional contractor held in July 2009. Finally, the contest was canceled, after withdrawal of the offer of the contractor.
- XI. 01.06.2010 new call for tenders was announced at one stage to select the concessionaire investor. After several extensions, the deadline for submitting bids was set for 19.07.2011. Significant changes requested by stakeholders to ensure sustainability and viability of the project, lowering the risk for private investors. Despite changing the terms of the project in accordance with the suggestions of interested investors, there was no bid.

- XII. 13.03.2012 new call for tenders in order to continue efforts to find a private concessionaire for the Freight Centre. At the closing date, 18.4.2012 submitted 2 proposals. The duration of the expressions of interest submitted was three months. In view of the elections of May 2012, the Board of GAIAOSE S.A. did not decide anything asking guidance from the new political leadership.
- XIII. New call for tenders is expected for the near future eventually in collaboration with TAIPED (The Hellenic Republic Asset Development Fund).

### ***Impact of Project Delays and Ambiguities***

The delays and ambiguities of the project led to a number of problems which are presented below:

#### *Financial Impacts:*

- I. Increase project costs.
- II. Reduction returns and anticipated cash inflows to all parts.

#### *Non-Financial Impacts:*

- I. Problematic freight transportation.
- II. Missing link for the function as complete network.
- III. Hampering development of the region.
- IV. Increased hardships to parties due to more than expected process and construction periods.
- V. Strain on legal system due to litigations.

### ***The economics of PPP in Infrastructure***

It is interesting to underline that in the implementation of the project, and particularly of PPP there are no studies that estimate the necessary economic valuation and assessment of the project as: NPV, IRR, ROI and ROE.

Even more, there are no particular studies as “Commercial viability”, “Cost benefit”, “Cost effectiveness”, to ensure a clear economic consideration of the project.

The economics of PPP in Infrastructure requires specific analysis for the Goal, the Need and Approach definition in both the private and public sector as presented below and have not been implemented:

*Goal:* -Attract private investments for infrastructure projects.

*Need:* -Lack of Budgetary Resources.

-Improve efficiency in service delivery.

*Approach:*



*Private Sector contribution for:*

- Financial investments (A Tool of Financial Arrangements).
- Best Management practices (A Tool of Governance or Management).
- Efficiency in service delivery.
- Efficient use of capital resources.

*Public Sector contribution limited to:*

- Providing institutional commitment to project (A Language Game...)
- Project Development & Selection of Developer (A tool of Development Process)
- Viability gap funding

***Specific issues***

Specific issues have been identified, during more than a decade of effort, and require Ad Hoc reexamination for project's success.

These are outlined below:

- I. Conflicting and Troubleshooting issues (Lack of clarity, Confusion of the two parts functions; need to specify the quality and quantity of the service it is required from the private partners).
- II. Transportation issues (Athens is a destination area thus trucks for door to door transportation, Athens – Thessaloniki corridor under construction thus insufficient capacity, Thessaloniki is the main export port to Europe, Cosco uses Ikonio as port for transit feeder-shipment, 17 km inland warehousing producing more transshipment).
- III. Design and proof consultant.
- IV. Technical capability of the concessionaire (Experts missing).
- V. Environmental and archeological issues (Rather limited risk).
- VI. Financing issues (E.U. conditional co-finance, Public funds, Private funds role).
- VII. Legal issues (Potential Competition between the "Thriassio Complex: Freight Station and marshalling yard" and "Thriassio private freight centre").

***Challenges Ahead***

On the basis of all the above issues the challenges ahead and the appropriate actions are identified below:

- I. Clarify vision and Redefine the business deal:

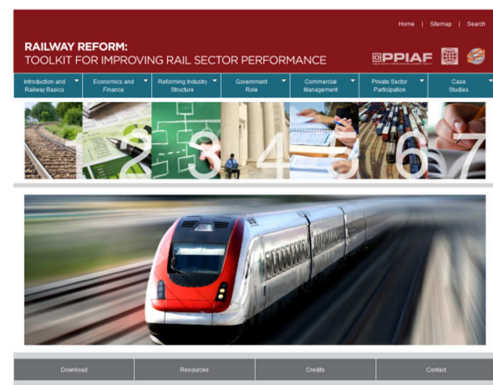
- a. 1. Define different conceptual issues of PPPs relating to governance, management and policy design.
  - b. 2. Define the common features such as nature of cooperation, inter-organizational arrangements, financial relationships and commitment should be very precise.
  - c. 3. Governance aspects such as decision making process, and roles and responsibility of different organizations/actors should be specific.
  - d. 4. The purpose of a PPP should be specific.
- II. Business Plan - Valuation.
  - III. Competition, Transparency and accountability.
  - IV. Induction of appropriate technologies in Railways.
  - V. Reducing Unit Cost of Operation per TEU and tn.
  - VI. Global response (OSE-rail and private-truck interests).

# Public Private Partnerships Schemes and Railway Financing

*Martha Lawrence, Senior Railway Specialist, World Bank*

The World Bank provides financing and technical support to developing countries worldwide. The Bank's active portfolio includes some US\$ 5 billion in railway project financings. In addition, the Bank provides technical advice on railways, funded by our budget, by trust funds and through reimbursable advisory services.

World Bank has prepared a toolkit on railway reform that is available in English, French, Spanish and Russian<sup>2</sup>. The Bank considers that the goal of railway reform is to create a railway sector that is market effective, cost efficient, and financially sustainable. Railway reform is complex, as a country may take many actions to reform its railway sector, including increasing competition, changing the industry structure, improving sector governance, and



<sup>2</sup> [www.ppiaf.org/railtoolkit](http://www.ppiaf.org/railtoolkit)

engaging the private sector. However, there is one universal principle – that railways are more market effective and cost efficient, when managed commercially.

Involving the private sector in railway activities is one way to increase the commercial orientation of the railway and attract private capital to it. The mechanisms for involving the private sector range from outsourcing to fully private ownership of the railway, with many options in between. The Railway Reform Toolkit provides several tools for involving the private sector including a Concession contract Guide and a Service Contract Guide.

The World Bank’s experience with PPPs in rail has mostly been with concessions. The Bank supported concessioning of railways in Latin America and Mexico in the 1990s and more recently in Africa and Armenia. The results of these concessions are mixed. Most concessionaires have increased traffic volumes and have increased operational efficiency. Financially, very few concessions have been sustainable in Africa, due to very low traffic density, while the results in Latin America have been much stronger. In almost all cases investment has *not* met expectations.



Five lessons about Public Private Partnerships (PPPs) in rail can be learned from this experience.

**Consider the incentives.** PPPs can be quite good at creating positive incentives for providing attractive service and reducing costs. It is, therefore, not surprising that rail concessions have often resulted in increased traffic and reduced operating costs.

**PPP financing is not free.** A PPP may provide financing and a team of experienced business people to manage the railway. But a PPP does not provide free money. **A viable source of revenue must be available** – either traffic or from government – to pay back the financing. Otherwise the PPP won’t work.



**Keep expectations realistic.** All parties tend to be overly optimistic when PPPs are proposed.



Government starts to think that a small passenger service can be transformed into a viable High Speed Rail operation. Investors consistently over estimate traffic and underestimate the investment required. It is important to keep the expectations in check, so that the

resulting transaction is financially viable.

**Avoid “phony math.”** If a country has problems with insufficient funds to support passenger services or infrastructure, creating a PPP is not



going to solve it. Governments should be suspicious of projections that show such problems miraculously disappear. In markets with low traffic density, government will have to provide funding for infrastructure. Similarly, in most passenger markets, government will have to provide financing.



**Government capacity is needed.** To pursue PPPs effectively, Government needs capable and experienced staff. To achieve desired results, the PPP must be structured so that the incentives and financing support the goals of a market effective, cost efficient, financially sustainable railway. PPPs are much less likely to be effective, if the tendering government lacks capacity.

In conclusion, PPP is an important tool in the “toolkit” of railway reform. Like any tool, it is powerful and needs to be used with a realistic understanding of what it can and cannot do. The five lessons from World Bank experience suggest ways to use this tool for positive results.

## Conclusions and Recommendations

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Experts from various countries, rail authorities, international organizations and private consulting firms shared their experience of applying Public Private Partnership schemes and railway financing. The participants were of the opinion that examples of effective application of PPP schemes to railways could assist in the development of guidelines and/or best practices.

The participants:

- I. Agreed that at the moment there are – regrettably – only cuts in governments’ budgets regarding transport infrastructure investments including railway;
- II. Observed that there were and continues to be demand on Pan-European level for investments in new infrastructure and / or upgrade of the existing lines;
- III. Noted that the most difficult part for railways financing is to identify the set of principal funding schemes;
- IV. Observed that infrastructure technology, especially for railways investments, is very complex, resources intensive and expensive;

- V. Noted that the return on investment of railways projects under PPP schemes is very long, exceeding 30 years; in some cases overpassing 50 years;
- VI. Observed that the majority of railways investment projects under PPP schemes have been focused on the development of High Speed lines and airport / seaport links;
- VII. Observed that there are not many railway investments under PPP schemes, especially compared to road transport;
- VIII. Agreed that there is usually less political intervention on road projects – investments under PPP schemes - than on rail projects;
- IX. Observed that railways projects are usually more complex than road projects, as they include viaduct construction, track works, overhead lines, tunnels construction, multisystem vehicles including their testing, signaling and safety systems, etc.;
- X. Agreed that PPP project construction usually perform better thanks to the rightly set incentives and thus have a potential to ensure better service and less money for investment;
- XI. Agreed that there are different methods for Governments to choose between traditional methods of investments and PPP schemes while the Value For Money should be always the priority;
- XII. Noted that the political interventions can be significantly reduced through their monetization when applying PPP scheme; however it remains very important challenge to reduce the political risk during tender and during execution of a PPP project;
- XIII. Noted that investments on railways and not only under PPP schemes are not systematically cheaper than traditional ones;
- XIV. Noted that appropriate risk allocation is needed; the risk should be allocated to the partner that can control and mitigate the risk;

Considering the implementation of PPP schemes on railways investment as an important opportunity and parameter for railways development which can only be tackled through collective efforts and cooperation at all levels, the participants agreed on the following recommendations:

Recommendations:

1. The lessons learned during the workshop should be disseminated to Governments, Governments' entities, rail authorities and other organizations that are involved in railways investment, mainly through the sessions of the Working Party on Rail Transport;

2. Governments should have thoroughly analyzed every business case and its validity, profitability and risk assessment before proceeding to tenders for investments under PPP schemes;
3. Governments should make their investment proposals under PPP schemes attractive for the investors mainly through the use of international standards, transparent and open processes and discussions and mainly through clear goals and objectives fully supported by political will;
4. Governments should avoid complex structures and therefore surprises for them and for their investors; the DBFM (Design, Build, Finance and Maintain) or Life Cycle Contracts are the most commonly used;
5. Governments should strengthen their regulatory institutions, prepare standardized contractual documents and remember that the perfect law for PPPs or the perfect financial moment do not exist;
6. Governments should choose the appropriate mechanisms to evaluate their possible PPP projects, such as the VGF (Viability Gap Funding), the VFM (Value for Money Analysis) and the public – private comparator;
7. Governments should manage incentives for train operators in the case the track construction have an impact on the vehicle parameters (typically signaling), e.g. through track access charge discount
8. Governments should note that International Financial Institutions could provide lending for investments under PPP schemes by considering – among others - the following risks:
  - a. Unforeseen technical problems;
  - b. Too optimistic timetable, cost estimation, demand forecasts;
  - c. Insufficient political support;
  - d. Incomplete land acquisition process;
  - e. Complex projects with large number of technical interfaces;
9. A central body which will concentrate and disseminate best practices, case studies and lessons learned on railways investments under PPP schemes worldwide is needed;

# Program of the Workshop

<b>10:00 – 10:30</b>	<b>Official Opening</b>	
	<b>Ms. Eva MOLNAR</b> , Director, Transport Division, UNECE	<b>Welcome address</b>
	<b>Dr. Libor LOCHMAN</b> , Executive Director, Community of European Railway and Infrastructure Companies (CER) AISBL	
<b>10:30 – 11.45</b>	<i>The International Organizations Perspective</i>	
10:30-10:50	<b>Mr. Jan van SCHOONHOVEN</b> , Executive Program Leader UNECE PPP Centre of Excellence	
10:50-11:10	<b>Mrs. Margit MOLNAR</b> , Head of Competitiveness and Structural Analysis, OECD Development Centre	
11:10-11:30	<b>Mr. Edward CHRISTIE</b> , Senior Economics Adviser of CER	
11:30-11:45	Discussion	
11:45-12:00	Coffee Break	
<b>12:00- 13:00</b>	<i>The consultants Perspective</i>	
12:00-12:20	<b>Mr. Jonathan BECKITT</b> , Partner - Infrastructure & Project Finance Group, CMS Cameron McKenna LLP	
12:20-12:40	<b>Mr. Van Wassenauer</b> , Allen and Overy,	
12:40-13:00	Discussion	
13:00-15:00	Lunch Break	
<b>15:00-16:15</b>	<i>The railways perspective</i>	
15:00–15:20	<b>Mr. Gweltaz GUIAVARC’H</b> , Head of Major Projects & PPP Support Service, Major Projects Division, RFF France	
15:20-15:40	<b>Dr John C. MOURMOURIS</b> , Professor, Head of the Dept. International Economic Relations and Development, Democritus University of Thrace	
15:40-16:00	<b>Mr. Mukul Saran MATHUR</b> , Representative of UIC / Executive Director Traffic/ PPP, Ministry of Railways of India,	
16:00-16:15	Discussions	
16:15-16:30	Coffee Break	
<b>16:30-17:30</b>	<i>The Banks perspective</i>	
16:30-16:50	<b>Mr. Alfredo DIAZ</b> , Expert on railway and PPP , European Investment Bank (EIB)	
16:50-17:10	<b>Mrs. Martha B. LAWRENCE</b> , Senior Railway Specialist, Sustainable Development Network, The World Bank Group	
17:10-17:30	Discussions – Conclusions - Recommendations	