



**Conférence Européenne
des Directeurs des Routes**

**Conference of European
Directors of Roads**

Public private partnerships (PPP)



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FOR INFORMATION

1 Executive summary

Concept and objectives of public private partnerships

Public private partnerships (PPPs) are contractual agreements between public and private partners for the development or management of a project aimed at delivering a public service, whereby a substantial part of the financing and the risks is shared between the public and private parties.

PPPs may aim to increase the availability of financial resources, increase the efficiency of a project or reduce its costs, simplify the development of the project, reduce the lead-time, optimize the whole life cost cycle of the project, allow funding structures that are more reliant on the users, or defer public liabilities without showing them in public accounts.

Stakeholders

The main stakeholders involved in a standard PPP include the public authority, which is responsible for the design, tender, and management of the PPP contract; the PPP contractor, which is responsible for the development of the project in the terms specified by the public authority; the financial agents, who are responsible for providing the financial resources; and the funding agents, who are responsible for payment and the provision of the income stream.

Types of PPPs

Some of the variables may include the degree of involvement of the public authority in the funding and financing of the scheme, the length and nature of the contract between the public authority and the PPP contractor, risk sharing between the private and public parties, tasks included, financial schemes, or mix of green-field projects and takeover projects.

The most typical example of PPP schemes is the BOT (*Build, Operate, and Transfer*). Nevertheless, the basic BOT principle can be extended to include additional clauses that may include subsidies during operation, initial contributions, or loans from the public authority. Other usual types of PPP include DBFO with shadow tolls or finance by contractor.

Advantages of PPP

The advantages of PPP include the incorporation of the private sector's capital and expertise, the facilitation of conditions for a life cycle optimization of the project, a more customer-oriented service, and the development of new business opportunities.

Disadvantages of PPPs

The most relevant disadvantages include higher financial and transaction costs, the negative public perception of tolls, and the complex contractual structure.

Critical aspects

A successful PPP requires a structure that is suited to the particular conditions of the project, clear and effective risk allocation, stability for the contractual and legal framework, as well as a transparent bidding process. In addition, the public authority should have clear objectives and avoid placing unreasonable expectations on the private party.

Options for the European road directors

Reinforcing the role of public investment

This option would be tantamount to maintaining the current status quo. Nevertheless, some road directors may intend to reinforce the allocation of all or part of certain government income streams, such as road or fuel taxes, to road budgets.

Allocation of funds generated by the *Eurovignette* to road investment

Whereas it is almost certain that there will be a strong resistance to the allocation of such income stream to road projects, road administrations can make a strong case for road projects with a positive environmental impact.

Promotion of Europe-wide interoperable technologies as the basis of future road pricing and road funding schemes

As a key system that could in the future be used as a funding tool for different road networks at European level, national road administrations should ensure the development of a Europe-wide system that is compatible at European level, while allowing for specific functionalities at national level.

Extension of the ‘user pays’ principles

The least controversial option would appear to be to increase the income base of road administrations beyond the mere reliance on public budgets.

Promotion of private finance

PPP schemes can be a straightforward and flexible way of augmenting the funding of road projects beyond public budgets and extending the ‘user pays’ principle without necessitating a single approach for the entire network that may require complex amendment of the legal framework.



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3 Definition of the issue

3.1 *The concept¹ and objectives of public private partnership*

A public private partnership (PPP) could be defined as a contractual agreement between public and private partners for the development or management of a project aimed at delivering a public service, whereby the risk, the provision of funding, or the provision of finance are substantially shared².

The responsibilities and degree of involvement of the private and public parties can vary to a great extent, both in terms of finance and risk allocation. Other variables include the nature and feasibility of the project, legal framework, time horizon, number and nature of the stakeholders, financial environment, as well as the public perception of the involvement of the private sector in public services. As a result, the potential structures for specific PPP schemes can be extremely diverse.

The objectives of a PPP scheme may be:

- to increase the availability of financial resources, allowing the development of additional projects without recourse to public budgets;
- to increase the efficiency of a project or reduce its costs, incorporating specific private sector technologies, know-how, management techniques, or innovative financial schemes;
- to simplify the development of the project, reducing the lead-time and merging different procurement phases into one single tender process;
- to optimize the whole life cost cycle of the project, incorporating development and management/maintenance into one single contract;
- to allow funding structures that are more reliant on users and those directly benefiting from the project, thereby avoiding distortions generated by taxpayer funding through public budgets;
- for accountancy purposes, to defer public liabilities without showing them in public accounts.

3.2 *Stakeholders and roles*

Whereas the list of stakeholders taking part in a specific PPP scheme can vary according to its nature and that of the project, some typical agents and/or roles can be identified:

¹ There is no internationally accepted legal definition of the term PPP. The concept of PPP, as mentioned in this document, refers only to PPPs for road infrastructure and does not cover PPPs for ITS or other systems.

² For the purposes of this report, 'funding' shall be understood to mean the income stream generated by the project, whereas 'finance' shall be understood to mean the provision of liquidity through debt for the development of the project.

- **The public authority:** This is the public entity that is ultimately responsible for the project and for the decision to carry out and design the PPP scheme. During the preparation of the scheme, the public authority is responsible for preparing the tender documents, managing the tender³ process, assessing the proposals submitted by the different bidders, selecting one proposal, and formalizing the contractual framework. During the lifetime of the project, the public authority is responsible for the enforcement of the terms of the contract⁴. In concessions, where there is a transfer of assets back to the public sector at the end of the contractual period, the public authority is responsible for arranging alternative management or operation of the services for the moment the transfer takes place.
- **The PPP contractor:** This is the entity responsible for the development of the project in accordance with the terms specified by the public authority. Therefore, the project PPP contractor is the main party responsible for delivering the services specified in the PPP contractual framework, which can be provided by the PPP contractor directly or by other third parties selected by the PPP contractor. The project PPP contractor can be an existing company. However, in many cases it can be a special purpose company set up especially for the development of the project. This is very often the case when the PPP is structured as a 'project finance' scheme⁵. In this case, the shareholders may include several of the stakeholders in the project, such as the building contractors, the operators, or even the public authority. Nevertheless, the involvement of third parties in the shareholding structure of the special purpose company does not eliminate the need for a solid contractual framework that regulates their responsibility in the project if their role is substantial⁶.
- **The operator:** The project PPP contractor can directly operate the infrastructure⁷. However, if specific know-how is required (market or specialized technical knowledge), then an independent company can be brought on board to carry out the operation on behalf of the project PPP contractor. The relationship between them—including capacity, level of service, or pricing policy—must be clearly regulated in a specific contract.
- **Financial agents:** The use of private finance can be one of the most defining aspects of a PPP. Normally, the project requires an initial investment, which must later be recovered through an income stream. Therefore, a finance scheme must be set up in order to compensate the cash flows over the lifetime of the project. Basic sources of finance in a PPP may include the capital provided by the project PPP contractor (equity), loans provided by banks, and securities or bonds sold on capital markets as an investment product.
- **Funding agents:** Funding agents are responsible for providing the income stream on which the feasibility of the project rests. The funding agent could be the users in schemes with direct tolls or the public authority in shadow toll schemes. The funding role of the public authority may also include public subventions for the operation or contributions towards the initial investment.

³ The selection of a private partner does not necessarily have to be done by public tender; it can be done by direct negotiation between the public authority and the project PPP contractor.

⁴ Some of the tasks involved in the enforcement may include the responsibility of other public bodies or regulators other than the public authority responsible for the project.

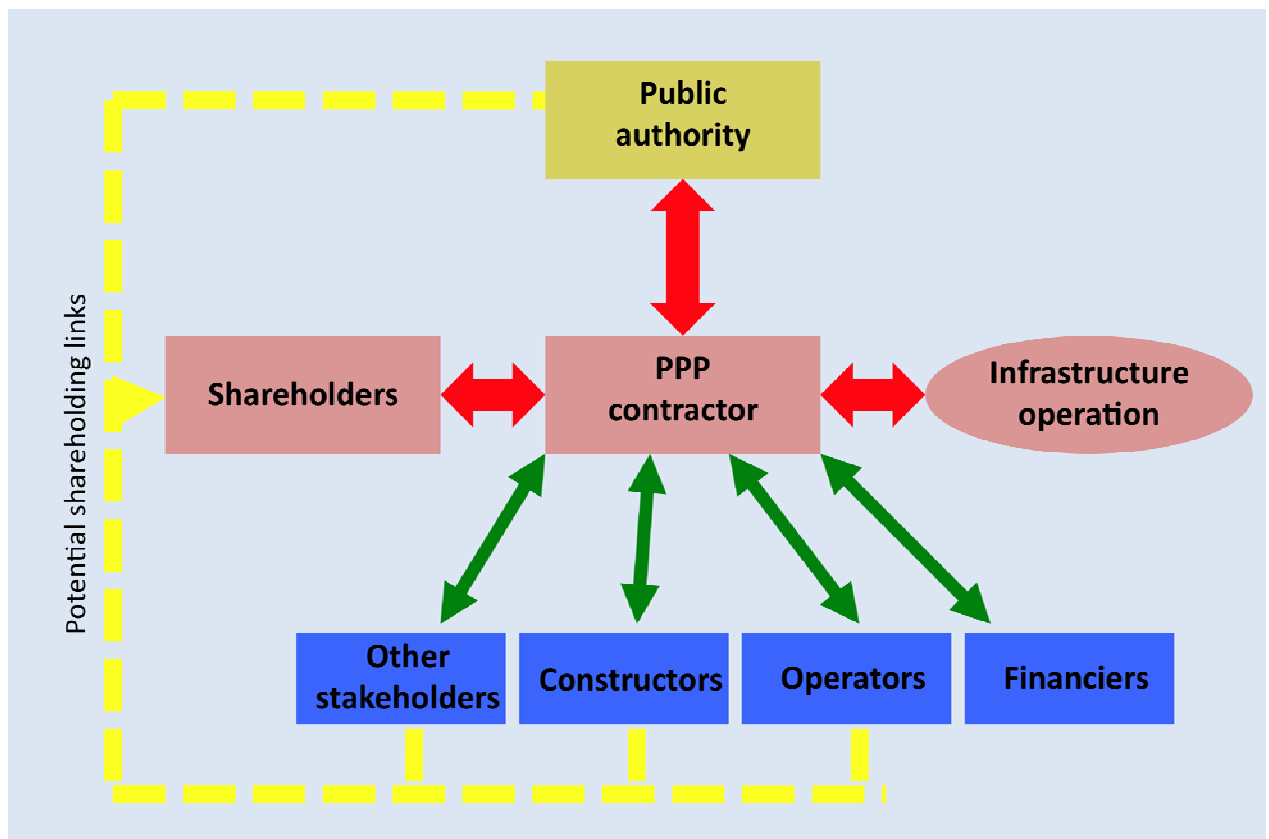
⁵ 'Project Finance' is a structure whereby the only guarantee for the debt is the future cash flow expected from the project, without encumbering other assets of project sponsors.

⁶ For instance, the building contractor could be one shareholder. Nevertheless, a contract specifying the conditions, scope of the work, and price should be signed by both parties.

⁷ This is usually the case in road projects.

- **Building contractor:** Building contractors can be one of the project PPP contractor's shareholders. However, if the influence of the contractor in the arrangement of the project is too large, this may lead to suboptimal value over the lifetime of the project, as the potential profit during the construction phase can be disproportionately large in comparison with the capital it may have to provide in terms of equity. The project PPP contractor must in any case monitor construction management carefully in order to ensure that the particular interest of any individual shareholder does not prevail over that of the project as a whole.
- **Other beneficiaries:** In large and complex infrastructure projects, there may be beneficiaries other than those using the infrastructure. Such beneficiaries could be parties benefiting from increased land values, enhanced accessibility, or new business opportunities created by the operation of the infrastructure. Therefore, it could be reasonable to integrate such stakeholders into the PPP structure so that they contribute to the feasibility of the project.
- **Regulator:** Apart from the public authority responsible for the scheme, other public bodies may have a role to play in the technical or economic regulation of certain aspects of the project.

Figure 1
MAIN AGENTS IN PPP SCHEMES



Source: compiled by author

3.3 Types of PPPs

There are many different kinds of PPP and approaches to PPP. Moreover, these different types and approaches are permanently evolving in order to meet the conditions of the projects and specific requirements of the stakeholders, such as size, complexity, funding sources, and finance needs. Variables may include:

- the degree of involvement of the public authority in the funding and financing of the scheme (such as direct contributions, subventions, shadow tolls, state guarantee, direct tolls, or other forms of direct user fees);
- the length and nature of the contract between the public authority and the private PPP contractor (public contract or a concession contract);
- risk sharing between the private and public parties;
- the tasks included (design, build, finance, operate, maintain, property, transfer);
- the financial scheme;
- a mix of green-field projects and takeover projects.

It is not easy to provide a clear breakdown of PPP into homogeneous types as each specific scheme has a substantial number of particular conditions that make it unique. On the other hand, the aim of this report is not to provide a full description of potential types⁸, but to propose a qualitative tool that may help CEDR members and decision makers to qualify a particular PPP scheme according to a number of key attributes. In this respect, the variables that are considered more relevant are those referred to in the definition, i.e. the share between the public and the private parties in terms of risk, funding, and finance.

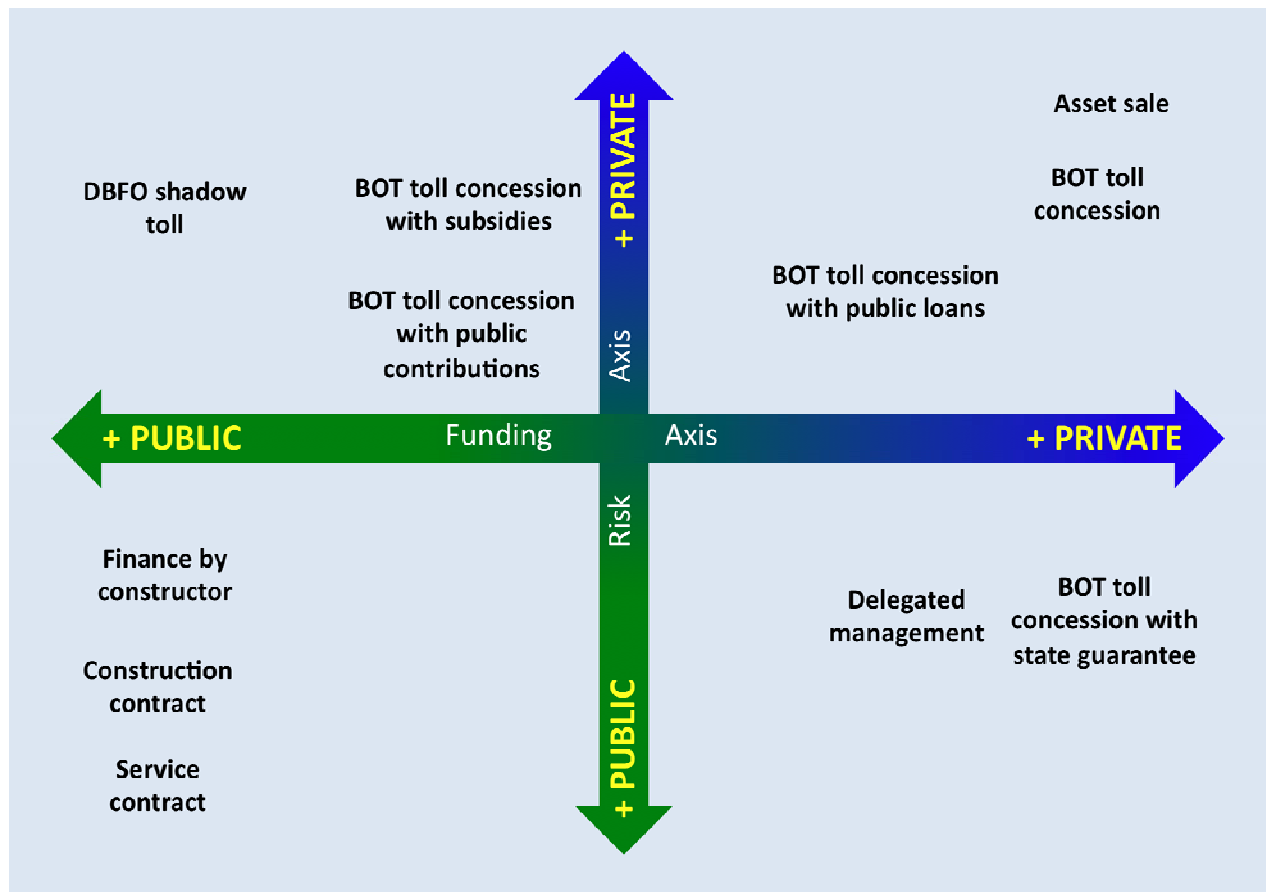


Construction of the Fedafjorden Bridge, route E39, section Lyngdal-Flekkefjord, Norway

⁸ Given the extensive amount of literature available on the matter, it is considered more efficient to refer the reader to one of the several documents describing with more precision the different types of PPP in use. See Appendix B for references and resources

Figure 2

**PPP TYPE DISTRIBUTION ACCORDING TO THE
RISK-FUNDING SHARES OF PUBLIC AND PRIVATE PARTNERS**



Note that 'funding' is understood to mean the income stream generated by the project (see footnote 2 in section 3.2)

Source: compiled by author

Figure 2 illustrates⁹ the different levels of public and private involvement in terms of risk and funding depending on the type of PPP scheme in question. One of the conclusions that can be reached from this is that any form of outsourcing could theoretically qualify as a PPP since outsourcing is a form of collaboration between public and private parties. However, as illustrated by Figure 2, all the funding and financing¹⁰ responsibility for both service contracts and construction contracts is in the hands of the public authority, whereas only a small part of the risk is borne by the private party. Consequently, the outsourcing of activities should not be considered a PPP scheme.

⁹ The exact location of each type of PPP in the graph can vary considerably according to the specific conditions of each individual scheme, and so this figure should be considered an example of how each type of PPP could rate in terms of the sharing of risk and funding between public and private parties.

¹⁰ See Figure 3.

At the opposite end of the scale lies the asset sale, where risk and funding for the private party is greatest. BOT¹¹ toll concessions are positioned very close to the asset sale, but in this case the public authority bears some of the risks of the project. There are other types of BOT toll concessions where the public authority plays a larger role, both in terms of risk and funding—a solution that may be more suitable for projects where the internal rate of return is not sufficient for their development as part of a fully private scheme:

- **BOT toll concessions with public subsidies:** The public authority provides a certain level of subsidy to the operation based on traffic units. Whereas this increases its financial exposure to the project, most of the risk remains with the private party.
- **BOT toll concessions with public contributions:** The public authority provides a certain amount of the initial investment¹². The public authority's level of financial exposure in this case is similar to that in the previous case, with the difference that it reduces the initial capital to be mobilized by the private PPP contractor and therefore its risk.
- **BOT toll concessions with public loans:** The public authority provides part of the capital required in the form of loans with preferential conditions¹³ that must be repaid at some point during the lifetime of the project. This does not increase the public commitment to the project as much as in the two previous cases, as the money has to be repaid in the future. Nevertheless, it represents a risk for the public party.
- **BOT toll concessions with state guarantee:** This scheme is structured like a normal BOT toll concession, with the difference that the public authority underwrites the borrowing of the private PPP contractor. This considerably improves the bankability of the project, reducing the interest rate of the debt (as the banks would consider the rating of the state rather than that of the private PPP contractor). However, this represents a considerable liability for the public authority, as it assumes most of the financial risk.
- **DBFO or shadow tolls**¹⁴: These schemes could be considered an extreme case of a BOT toll concession with subventions where the public authority pays 100 per cent of the toll.
- **Finance by constructor:** This refers to a construction contract whereby the public authority makes a single payment for the infrastructure when it is completed.
- **Delegated management:** The public authority signs a contract with a private company for it to carry out the operation on its behalf, but without any transfer or lease of assets.

¹¹ BOT: build, operate, and transfer.

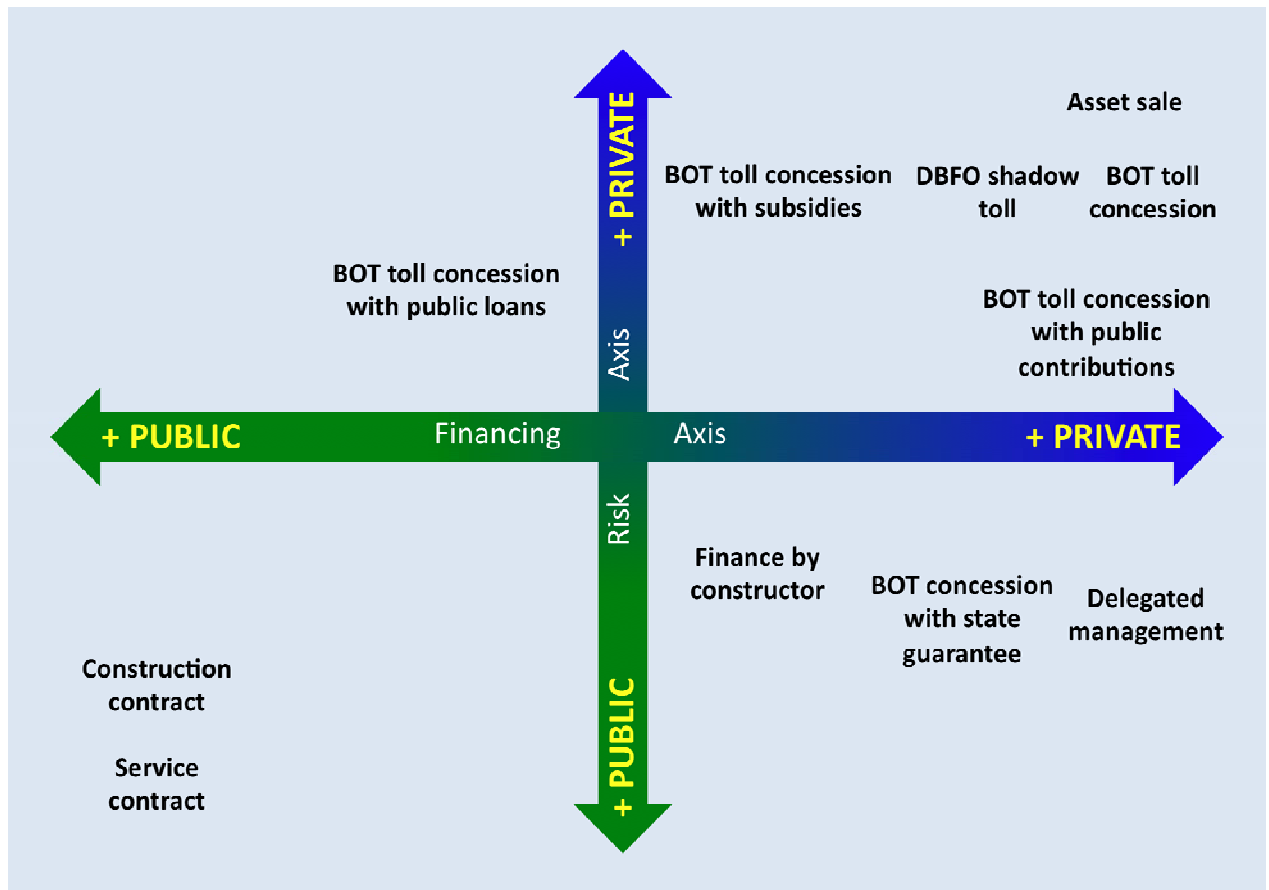
¹² This investment could take the form of cash or built assets.

¹³ In some cases, the loans may give the public authority the right to a share of the profits above a certain threshold.

¹⁴ Considering that the acronym DBFO (design, build, finance, and operate) indicates the substance of the system, and considering that the public authority in the UK pays the toll on the basis of the traffic and other quality parameters, the terms 'DBFO' and 'shadow tolls' have come to represent the same concept in the UK.

Figure 3

**PPP TYPE DISTRIBUTION ACCORDING TO
RISK-FINANCING SHARE BETWEEN PUBLIC AND PRIVATE PARTNERS**



Note that 'financing' is understood to mean the provision of liquidity through debt for the development of the project (see footnote 2 in section 3.2)

Source: compiled by author

Figure 3 is similar to Figure 2, with the difference that in Figure 3, the share of financial responsibilities (rather than funding ones) is correlated with the risk share. Note that the financing role is radically different from the funding one, since the financial responsibility only entails the provision of the required liquidity over the lifetime of the project, whereby the capital borrowed by the PPP contractor must be returned to the lenders. In Figure 3, the same PPP schemes as those in Figure 2 have been included, but they have been displaced horizontally in order to reflect the share of financial exposure between public and private partners in each particular case.

3.4 Advantages of PPP

- **Life-cycle optimization.** Operation and maintenance requirements are taken into account right from the beginning of the project, creating some favourable conditions for the development of the project under a whole life cycle approach. This can in turn optimize cash flows and reduce costs.
- **Private sector expertise and capital.** Private parties bring with them specific knowledge and know-how, particularly in terms of management. In addition, private capital creates additional resources for the public sector, freeing funds that may be allocated to other policies.
- **Incentive to innovate.** The flexibility of PPP schemes, together with the possibility for the private party to generate a profit, represent a strong incentive to innovate, optimize, and take advantage of all opportunities for business development. This can represent a higher 'value for money' approach than that of a traditional scheme.
- **Business development.** A consistent strategy of promoting the involvement of the private sector in road projects may lead to the development of a specific economic sector of high entrepreneurial value¹⁵.
- **Customer service.** As customer service and satisfaction benchmarks can be built into the contract as an incentive to the project PPP contractor to deliver a high level of service.
- **Project management.** In the same way, the contract can easily incorporate specific incentives for the private party to complete the project on time and within the budget.
- **Risk allocation.** A PPP scheme allows for the allocation of some of the risks to private parties and other stakeholders other than the public authority, thereby representing a reduction in the risks borne by the road administration.

3.5 Disadvantages of PPPs

- **Higher financial costs.** To the extent that private finance is prevalent in a particular PPP scheme, financial costs are usually higher, since private companies normally have lower credit ratings than public authorities and sovereign debt¹⁶. On the other hand, efficient private management could be expected to bring cost savings that outweigh the higher finance cost. In any case, carrying out a cost benefit analysis for any particular PPP is a good idea in order to ensure that the project provides value for money.
- **High transaction costs.** As a PPP tender process is generally longer and more complex than those required for traditional public procurement contracts, transaction costs are considerably higher. This means that a private party needs to spend a considerable amount of money just to submit a bid. This in turn prevents smaller firms from taking part in the process, thereby reducing competition.

¹⁵ See Appendix A - PPP country profile: Spain.

¹⁶ However, if the project has state guarantee, the debt may have the same cost as that of the granting state. This is the case in the Øresund link between Copenhagen and Malmö.

- **Public perception about tolls.** PPP schemes often entail project funding from users rather than taxpayers¹⁷. Motorists already pay a substantial amount of money in the form of fuel and vehicle taxes, in most cases generating far more resources than those effectively devoted to road development and operation. Nevertheless, there seems to be a lack of awareness among the general public about how road income and expenses are earmarked, particularly in those countries with non-allocated taxes systems. Whereas it could be argued that the extension of the ‘user pays’ principle through direct tolls is positive from an economic point of view, as it allows for a more efficient allocation of resources, the entrenched public opinion that the use of roads should be free of any extra charge is a limiting factor for PPPs, unless a shadow toll scheme is used.
- **Conflict resolution procedures.** Conflict resolution procedures for PPP schemes (i.e. if the private party fails to comply with the terms of the contract), are normally complex and cumbersome, more so than is the case with traditional public procurement contracts.
- **Structure and documents.** As various parties can be involved in a PPP over a long period of time, the contractual framework required for regulating all the responsibilities, risks, and covenants can be rather complex.
- **Risk of bankruptcy.** The financial failure of the PPP contractor is potentially more disruptive than is the case with traditional construction contracts.

3.6 *Critical aspects to be addressed*

- **Optimizing PPP scheme structure:** PPP is a principle that allows for the development of a project whereby the project stakeholders—public and private—assume different responsibilities. Although there are different approaches to PPP such as those described above, the specific structure of an individual PPP scheme must be customized to suit the project on the basis of several particular project characteristics, such as the institutional and legal framework, the market financial conditions, the public attitude towards private involvement in public projects and the ‘user pays’ principle, or market and competition conditions in the private sector. For this reason, a specific PPP scheme may well be based on one of the general types, but may nonetheless include specific clauses that modulate particular aspects in order to ensure a balanced approach to the distribution of risk and financial responsibility among stakeholders.
- **Risk allocation:** One of the most important aspects of PPP is risk management. Indeed, the identification of the different risks and the allocation of each of these risks to the stakeholder best suited to control or manage it, is a crucial issue when it comes to designing a PPP scheme. The project PPP contractor can assume certain risks. However, these risks should be clearly identified and approached using a stable framework in order to ensure that they can be efficiently managed, avoiding a risk premium with additional costs. The public authority should be aware that the most efficient schemes are those that entail the public authority assuming some of the risks itself. A different approach is likely to increase the overall cost of the project. At the same time, identifying hidden risks in highly innovative structures is extremely important in order to avoid future disputes between the parties and any undue transfer of costs to the public party.

¹⁷ This is not always the case. See, for example, shadow toll schemes.

- **Stability:** The public party should be in a position to guarantee a stable framework for development over the lifetime of the project. The respect of the legal provisions of the original contract and the principles under which it was granted is extremely important for the private party and its financiers if they are to 'trust' the public party. This is not only important for existing projects, but for future ones, as any further changes in the legal or regulatory framework may be perceived as an additional risk and priced accordingly in later deals¹⁸.
- **Transparent bidding process:** The public authority should make sure that the bidding process is open and transparent in order to encourage competition and, therefore, to increase the chance of finding an appropriate private partner and optimise the outcome of the project.
- **Expectations of the private party:** Governments often have unrealistic expectations regarding the performance of the private party, such as levels of service that are significantly higher than those on the rest of the network. This may result in potential private partners being reluctant to join the PPP.
- **Traffic demand forecasts:** The success of many PPPs is often directly linked to traffic demand. Therefore, an accurate forecast of traffic demand is an extremely important element, as discrepancies between real and expected demand can make it harder to meet financial liabilities, which might in turn lead to the failure of the project.
- **Concession duration:** The duration of the concession should be determined on the basis of the particular conditions of the project in order to optimize cash flow and debt repayment. Optimizing the concession duration is necessary for a balanced approach to the distribution of risk and finance between the public and private parties.
- **Clear objectives:** The public authority should specify its objectives for each specific PPP scheme. This will make it easier to make a balanced decision in terms of the distribution of risk and finance, to build an efficient partnership with the private partner, and to assess the final success of the scheme.

¹⁸ This is known as 'political risk'

4 Ways forward

4.1 *The role of finance and funding in road management*

Funding road infrastructures is probably the most complex and controversial aspect of road management. It is in stark contrast to other transport infrastructures, where part of the fare paid or price of the ticket purchased is devoted to the infrastructure. Ensuring the toll-free flow of traffic, which is perceived as an inherent attribute of road transport, has traditionally constituted a technical hindrance to making motorists pay for road use. This has in turn led to a certain public perception that the use of road infrastructure is a public right and should, therefore, be free of any charge in addition to the costs already borne by the motorist¹⁹. As a result of this, road administrations have traditionally relied on public budgets to secure the resources required to build, maintain, and operate a network.

Private finance represents a departure from the traditional public formula and its well-known constraints. However, private finance is not a panacea and brings its own limitations. Among these, the difficulties of bringing the requirements of a private operation into line with the safeguarding of public interest, and the unsuitability of private finance for projects that are economically feasible but financially unprofitable due to a lack of traffic flow, are the most important ones.

4.1.1 Public funding and road user charges

It is in the interest of the road users to have well maintained roads because the resulting reduction in vehicle operating costs is greater than the corresponding cost of road maintenance. This is why the first step in seeking financing for road maintenance is to look to road users to pay the cost of road maintenance. Experience in a number of countries has shown that road users are willing to pay for road maintenance as well as expansion if they can see that the fees and taxes that they pay result in improved road conditions.

Preferred road user charges are those that establish the closest link between the charges and the use of the roads. Generally speaking, the most appropriate charges are those for the use of the road space and those for the disproportionate damage caused by heavy vehicles.

- **Method of charging for roads.** The principles of taxing road users are that charges should be economically efficient, equitable, cost little to collect, and are difficult to evade. They should also be adjusted for inflation (Yenny 2002).
- **Taxes on vehicle fuel** satisfy, to a certain extent, the above criteria and are widely used. They are relatively inexpensive to collect, easy to administer, and reasonably equitable because they are proportionate to road use. Their main disadvantage is that they do not reflect the much higher damage done to roads by heavy vehicles. Although trucks consume more fuel per kilometre than cars and therefore pay more fuel taxes per kilometre travelled, this is not in proportion to their higher impact on the roads. Therefore, fuel taxes need to be supplemented by additional charges on heavy vehicles. Taxes on fuel are also used by governments for purposes such as restraining fuel consumption or **raising revenues for the budget**; this is common practice in many developing and developed countries. Nevertheless, sufficient funds need to be set aside to carry out an appropriate level of road maintenance and expansion.

¹⁹ i.e. fuel and vehicle taxes

- **Vehicle licenses** are common in most countries, mainly in the form of annual license fees. They are easy to collect and can differentiate between types of vehicle and reflect the road-related costs that each type generates. The main drawback is that they are not use-related. A truck used for only 20,000 km per year would pay the same as one travelling 100,000 km per year.

Until such time as road pricing is no longer a system comprising a number of isolated schemes rather than a principle that applies to an entire network, public funding is likely to remain the main source of capital for road development and operation. However, it must be emphasised that the only impediments to a change in this situation are public opinion and political will. Indeed, technology is currently advanced enough to allow for the implementation of schemes that could accurately monitor and bill the exact use of the infrastructure by an individual motorist without any interference with the traffic flow²⁰.

Nevertheless, some aspects inherent to the public funding of road infrastructures and PPP should be born in mind in the decision-making process:

- **Availability of resources:** As long as road funding is subject to approval by parliaments or assemblies, fighting for its share in a public budget along with a considerable number of other policies, it is unlikely that road funding will adequately cover actual needs.
- **Political decision-making:** Democratically elected representatives are responsible for approving public budgets. However, politically biased decisions in terms of road investment and expenditure may result in the suboptimal allocation of resources.
- **Hidden cross subsidies:** Public funding means, to a great extent, that the taxpayer foots the bill. As this does not reflect the amount of road used by each individual taxpayer, the system generates transfers of wealth among individuals, which are largely unknown. Whereas it could be argued that those paying more taxes should subsidize poorer members of the society, who would then benefit from cheaper roads? Mixing two policies together (roads and welfare) does not seem to be a good recipe for a consistent and transparent allocation of public resources.

However, the continued reliance on public budgets could be complemented by measures aimed at mitigating some of these drawbacks, such as:

- The heightening of awareness in society about how much it costs to manage a road network. In particular, the public should be made aware of the cost of achieving certain levels of service, the implications in terms of taxes, and the notion that using the road is not free.
- NRAs should encourage politicians to take a long-term view of road investment and promote an approach that focuses more on the real needs of the transport system, avoiding a short-term view that focuses more on political considerations²¹.
- The promotion of road pricing schemes and their eventual extension to the entire network could improve drivers' and citizens' awareness of the marginal cost generated by each trip.

²⁰ Satellite-based systems, such as GPS or Galileo, would allow for the establishment of a system that records the exact route of a transponder-equipped vehicle along the entire network.

²¹ An expansive infrastructure policy is not a guarantee for re-election.

4.1.2 Private funding and finance

Increasing the involvement of private resources in road finance could be an adequate way forward in terms of mitigating the described limitations of public funding. However, the number of projects that could be developed under a fully private scheme²² without any public contribution is relatively small.

PPPs represent a way forward in terms of trying to overcome the limitations of private financing of road infrastructures, thereby allowing the use of such schemes to become more widespread. Rather than a tool, PPP can be considered a principle whose ongoing development should allow new formulas that contribute to a greater role for the private sector in road development. The list of different PPP types is constantly growing as individual schemes incorporating new ways of blending different elements of public and private interests are developed.

In this way, the traditional BOT toll concession formula has been extended to include mechanisms that allow public contributions or risk mitigations that allow a private PPP contractor to develop the project in market terms. Some of these have been described in section 3.3, but this does not preclude the implementation of other potential formulas adapted to the specific requirements of a particular case. In principle, there should be no limits to 'creativity' as long as the objectives of both parties, public and private, are met.

Nevertheless, some aspects inherent in the private funding of road infrastructures and PPP should be born in mind when making decisions:

- **The cost of a PPP:** The development of a project as part of a PPP scheme is not necessarily cheaper. Despite the public contribution to the project, users still have to pay tolls, which could be perceived as unfair. However, it must be remembered that the public contribution must bridge the gap between the financial return on the project and its economic feasibility, and from that perspective it should represent a fair price.
- **Public and private objectives:** The public objective is to provide a public service, which in this case means providing a safe and efficient road infrastructure at an adequate cost.
- The private objective is to develop a business and generate a profit. Both are equally respectable. A PPP is not about putting one set of objectives ahead of the other. Far from it, a good PPP scheme is one that allows the fulfilment of both sets of objectives at the same time. A PPP where one party loses—regardless of which party that is—is a failed scheme.
- **Funding and finance:** Both concepts represent different things. Whereas it could be argued that private finance is not advisable on the basis of potentially higher costs as a result of its higher rates or the requirements of a private profit, it is harder to argue against the funding of the infrastructure by its users rather than the taxpayers. Whereas so far, both concepts seem to have developed together (private funding and finance), NRAs could develop strategies to make users pay for the infrastructure, regardless of its public or private management scheme.

²² Like a BOT toll concession.

- **Eurovignette and external costs:** The European Commission is actively promoting several strategies aimed at internalizing the external costs of transport, among them a new legislative proposal amending directive 1999/62/EC. In the field of road transport this would mean that member states could make trucks pay for the congestion, noise, and air pollution they generate. Whereas the current directive proposal indicates that the income should be used by member states to improve the sustainability of the transport system as a whole, investments that seek to tackle congestion or noise may qualify for the allocation of funds.



Asti-Cuneo motorway, Italy

4.2 Options for the European road directors

- **Reinforcing the role of public investment**

This option would be tantamount to maintaining the current status quo. Nevertheless, some road directors may intend to reinforce the allocation of all or part of certain government incomes, such as road or fuel taxes, to road budgets. In addition to this, it would seem appropriate to follow some of the described strategies aimed at limiting the negative side effects of public funding.

- **Allocation of funds generated by the *Eurovignette* to road investment**

Although it is almost certain that there would be strong resistance to the allocation of such income stream to road projects²³, road administrations can make a strong case in favour of road projects with a positive environmental impact, such as optimizing the use of existing infrastructure, improving road safety, reducing road noise, or the construction of bypasses to prevent traffic going through villages or populated areas.

- **Promotion of Europe-wide interoperable technologies as the basis of future road pricing and road funding schemes**

The external cost charges considered in the proposed *Eurovignette* Directive should be levied by electronic means without interfering with the traffic flow. Because the schemes would have to be implemented at the initiative of individual member states, there is the risk that different countries would develop systems based on different and incompatible technologies. As a key system that could in the future be used as a funding tool for different road networks at European level, national road administrations should ensure the development of a Europe-wide system that is compatible at European level, while allowing for specific functionalities at national level.

- **Extension of the ‘user pays’ principle**

The least controversial option would appear to be to increase the income base of road administrations beyond the mere reliance on public budgets. However, a legal framework allowing road administrations to charge motorists would be required²⁴. If this principle were to be taken one step further, other beneficiaries of the road infrastructure could be required to contribute to its funding.

- **Promotion of private finance**

PPP schemes can be a straightforward and flexible way of augmenting the funding of road projects beyond public budgets and extending the ‘user pays’ principle without necessitating a single approach for the entire network that may require complex amendment of the legal framework.

- **CEDR’s PPP toolkit**

As part of the work carried out by PG Funding, a toolkit illustrating some practical characteristics of PPPs has been developed. The toolkit is available on the CEDR website and explains some of the details and features of specific PPP schemes depending on their legal base, risk allocation, funding agent, or contractual structure etc. The toolkit is, therefore, an instrument made available by CEDR to NRAs²⁵ in order to give them a better insight into the practicalities of PPP development.

²³ Please note that it is up to each member state to decide whether it chooses to implement Eurovignette schemes.

²⁴ Not to mention difficulties related to public perception and political aspects.

²⁵ National road administrations.

5 Comparison of ways forward

- Although public funding is likely to remain the main source of resources for road administrations, its inherent rigidities mean that a new approach is necessary. This new approach would involve users and beneficiaries—rather than taxpayers—providing a larger share of the required funds, as is the case in other modes of transport.
- PPP seems to be a flexible and efficient way of using additional resources for road investment while incorporating the know-how and managing techniques of the private sector.
- National road administrations must be aware of the technological and interoperability implications of the different systems required for the collection of tolls in road pricing schemes, which are likely to become increasingly widespread in the future. There would also seem to be some potential for synergy between the development of road pricing schemes, the implementation of external cost charges, and PPP projects.

6 Conclusions

Roads are a transport infrastructure whose funding and financial requirements are still mostly provided and managed by the public sector through public budgets. Whereas this could be the result of practical difficulties in setting generalized user pay schemes, it would seem adequate to explore the possibilities of extending a new approach whereby motorists bear a larger share of the cost of roads rather than taxpayers. Indeed, other modes of transport have almost completed that evolution (airports and ports) already, or are half way through it (railway).

PPP is a principle that allows the development of specific projects to be structured in accordance with their specific characteristics and requirements, incorporating those private stakeholders whose role is or could be relevant for an efficient development or operation.

In particular, PPPs not only allow for the promotion of a larger role for private finance in the development of road infrastructures, they also incorporate specific know-how and technologies from the private sector. The private sector can provide additional funds for road projects, thereby allowing for an increase in available resources and the diversion of a certain amount of public funds to other policies. In addition, PPPs allow for the promotion of the 'user pays' principle, which can be an efficient tool for allocating resources to the road more efficiently, based on the requirements of mobility and the infrastructure rather than on political considerations.

While there are still problems and difficulties inherent in PPPs, the fact that they are constantly evolving is evidence of their flexibility in adapting to the changing requirements of road networks. It therefore seems that road administrations have an important, leading role to play in promoting PPP as a valid formula that will allow them to secure the resources they need to provide value for money in road management, while maintaining effective control over their entire networks.

Appendix A – Country profiles: national experiences with PPPs

FINLAND

FRANCE

GERMANY

GREECE

IRELAND

ITALY

The NETHERLANDS

NORWAY

SPAIN

UNITED KINGDOM

COUNTRIES WITHOUT PPPs (SWITZERLAND and LUXEMBOURG)

National experiences with PPPs: Finland

Overview of projects and network

The road sector is the main area in which PPPs have been developed and used in Finland, even though they have only been used in two projects so far. The current main road network covers about 13,300 km of road including 700 km of motorway. The two PPP concessions cover 120 km of motorway in total. The projects shown in Fig. 1 are the E75 Järvenpää–Lahti project (contract period 1997–2012) and the E18 Muurla–Lohja project (2005–2029). These two projects represent less than 20 per cent of the Finnish motorway network. Tolls are not levied in Finland. The Ministry of Transport and Communications promoted the PPP projects, transferring practical responsibility of the procurement process to the Finnish road administration.

The first project (the E75 Järvenpää–Lahti) was developed in the mid 1990s; the second contract (the E18 Muurla–Lohja) was signed in 2005.

The two concessionaires are entirely private and consist mainly of the same PPP contractors.

Types of PPP used and risk allocation

The Finnish PPP road projects were developed according to the Design, Build, Finance and Operate (DBFO) formula, whereby the concessionaire is responsible for raising the finance and bears most of the risk. The contracts and the payment mechanisms fulfil the off-balance sheet requirements of Eurostat.

Risk is primarily borne by the private concessionaire (except e.g. *force majeure*, administrative risks of road plans, false input data provided by the client). In the discussions regarding possible new PPPs, there has been considerable interest in increasing public risk sharing in terms of financing because of the critical views regarding private financing.

Legal basis

The concessions in the Finnish PPPs are regulated by conventional procurement legislation. In Finland there is no special legislation for PPPs. However, in order to make PPPs possible, it was necessary to make some adjustments to Finnish legislation concerning value-added and trade taxation. The adjustments were introduced on the occasion of the E75 project (shadow toll). For the E18 project, the tax regime was set after authorization by the Central Board of Taxes.

The DBFO contract tailored for each project defines the principle of PPP with explicit provisions.

Financial instruments

The concessionaire is responsible for the financing of the project and bears the risk accordingly. The financial arrangements may include equity and capital raised on the markets by different means (loans, bonds). The two special purpose companies (E75 and E18) have used bank loans for financing. As already stated, a new kind of model that would see the government paying an irrevocable and fixed portion of the gross service payment—after the road has been opened to traffic—is being developed and examined for potential new PPPs.

Regulatory framework

The Finnish road administration is responsible for the technical regulation and the legal and financial establishment of road concessions granted by the national government. A small ad-hoc expert group that worked with external technical, legal, and financial consultants was responsible for procurement and partly supervised processes for the PPP projects. A separate unit for large road investment has been founded within FINNRA²⁶. This unit is accountable for PPPs and other projects.

Lessons learned

The two PPPs were a success. Both projects were opened to traffic earlier than the client expected, which meant an earlier break-even for the company and an earlier social benefit. The following lessons were learned from the E18 Muurla–Lohja procurement process carried out in 2004 and 2005:

- legally valid plans including EIA must be completed before the tender process begins;
- PPP helped optimize investment and maintenance for this technically challenging project;
- increasing the number of elements that were open to proposal by the bidder facilitated innovations; performance specifications were more widely used than technical requirements;
- an availability-based payment mechanism is preferred in Nordic countries;
- the contract period should last at least 20-25 years;
- marketing of the projects should get underway early at international road shows;
- between 3 and 5 short-listed bidders is ideal;
- general European documents should be used if possible;
- contacts with lenders—especially with international financial institutions, e.g. EIB²⁷ and NIB—should be established at an early stage;
- dialogue should be maintained with bidders throughout the procurement process.

Matti Vehviläinen
Director of road investments
Finnish Road Administration

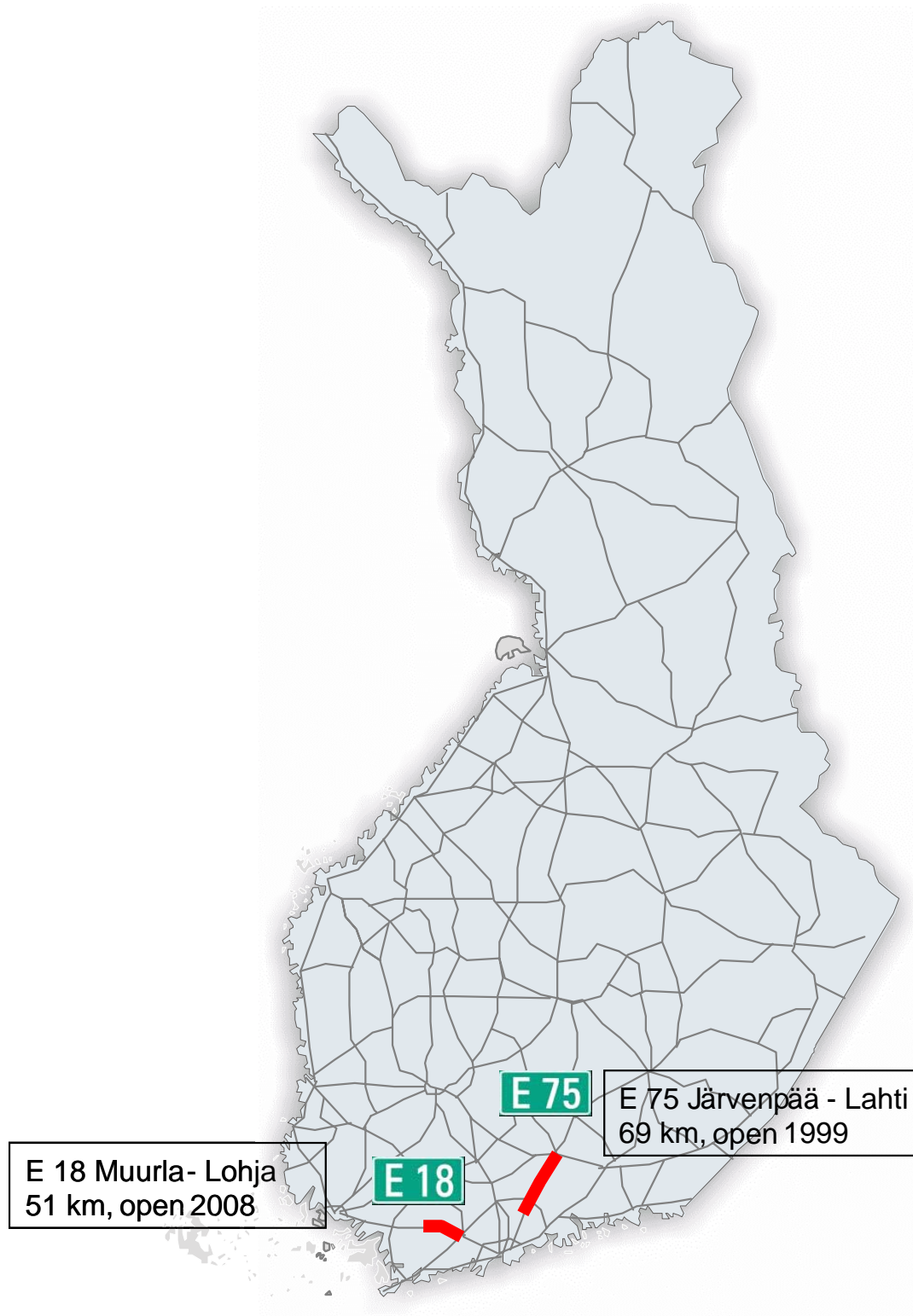
References:

www.ftiehallinto.fi/e18

²⁶ Finnish national road administration

²⁷ European Investment Bank

Figure 1. Finnish PPP road projects



National experiences with PPPs: France

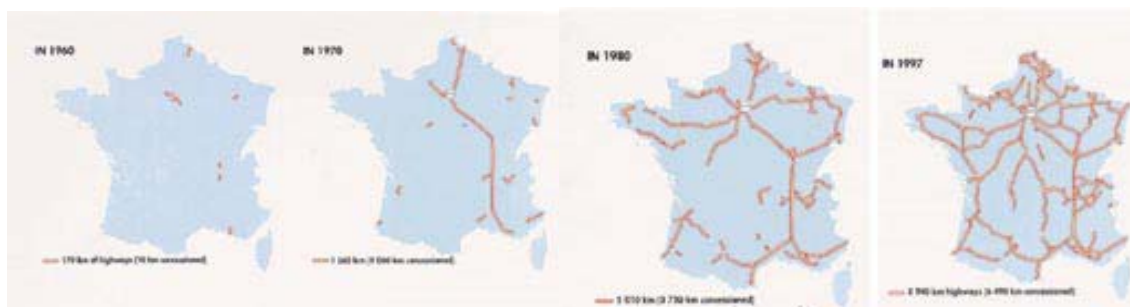
Overview of projects and network

One of the main sectors in France where PPP projects have been developed is its road sector. Of the 11,000 km of motorway in France, some 8,500 km have been conceded to private parties. At present, the concession network consists of 14 private companies (3 companies still have public or semi-public ownership: ATMB, SFTRF, CCIH), of which the largest operates 2,937 km in total, and the smallest 3.2 km²⁸. Only the state has the power to implement road concessions within the main transport network. It can also initiate procedures after consultation with local or regional bodies.

The remaining 2,500 km of motorway are state-funded national highways. The state also operates about 5,000 km of express road.

The ministry in charge of national roads is the Ministry of Ecology, Energy, Sustainable Development, and Spatial Planning via its Directorate-General for Infrastructure, Transport, and the Sea (DGITM).

CONCEDED MOTORWAY NETWORK IN FRANCE (1960, 1970, 1980, 1997)



Source: DGITM

The main motorway policy in France was established in 1955²⁹. The dominating 'user pays for use policy'³⁰ led to the first concessions being awarded in 1958. The concession policy has developed considerably over the past 50 years. Whilst the first concessions (historical concessions) were granted under competitive bidding, they were also subject to *adossement*³¹. The state remained the majority shareholder of the concession. Later concessions were subject to European competition rules. This allowed new candidates to enter the market. These candidates benefited from public funding in those cases where their intrinsic financial profitability could not be assured. This new bidding method resulted in greater competitiveness among a greater number of bidders and greater transparency in the selection of parties and the awarding of contracts. In line with this development, most historical concessionaires were completely privatised after 2005³².

²⁸ ASF and Compagnie Eiffage du viaduc de Millau (the highest motorway viaduct in the world) respectively

²⁹ Law of 18 April 1955.

³⁰ Toll road users in France can always choose to use an alternative toll-free road.

³¹ *Adossement* was a mechanism by which the concession for any new section was automatically granted to the nearest existing concession company after negotiation but without competition. The new sections concerned, if not balanced with existing tolls, were financed by the revenue collected on sections already operated by the concession company.

³² The two tunnel concessions exploited by ATMB (the Mont-Blanc tunnel) and SFTRF (the Fréjus tunnel) are for the most part publicly owned.

The historical concessions concentrated on the North to South-East connections with Paris as the hub. In recent decades, the South-West connections became more developed while the network became more decentralized from the Paris hub.



Toll roads in France in 2004 (Source: DGITM)

The most recent concessions to be completed were those relating to the Millau Viaduct and the A19, A28, and A41 motorways (construction of which is due to end in December 2008). The concessions that have yet to be completed are the A88, A86, A19, and A65 motorways.

Historical concessions were extended every time an *adossement* took place, which is why none of these contracts has ever reached term. With the end of *adossement*, the term of historical concessions has been stabilised: it is planned that they will terminate between 2028 and 2032. For new concessions, the contract period is between 55 and 65 years. The term for the Millau Viaduct contract is even longer, namely 79 years.

Types of PPP used and risk allocation

The French road concessionaire is vested with the rights and duties of the state according to the design, construct, finance, operation and maintenance (DBFOM) formula. The concessionaire is responsible for all activities that lead to the actual realisation and operation of the infrastructure from the moment the contract is signed until its termination. The realisation of the contract also involves preliminary studies, consultations with neighbouring property owners, communes, land acquisition, etc.

In exchange, the state monitors the execution of the work and issues the authorisation to commission the motorway.

Legal basis

For a preliminary understanding of the legal basis involved, it must be understood that besides contemporary European Directives, concessions in France are executed within a different legal framework than other PPP projects. France regards a concession as a power delegated to a private party with all associated risks and perils. They do not regard the concession as a public private partnership where risks and finances are shared. In France, PPP projects are regarded as a new phenomenon on the basis of which no road project has yet been designed.

Therefore, a distinction must be made between the legal basis for concessions and the legal basis for PPP projects.

The concession of toll motorways in France is based on the Law of 18 April 1955, later revised by the Law of 22 June 1989, the *Code de la voirie routière*. Major amendments to the legal basis were introduced by the European 'Works' Directive³³, which was transposed into French law in 1991 and gave scope and effectiveness to the principles of community law that stipulate non-discrimination, equal opportunities for candidates, and transparency in selection procedures. This gave rise to the implementation of an official procedure for competitive bidding.

The *adossément* structure subsequently came to an end with the introduction of the Sapin Law³⁴, which was also based on the above-mentioned European Directive.

Other PPP projects in France are based on the creation of a PPP contract by the Order of 17 June 2004. The framework of this order was until recently very restrictive and consequently, no infrastructure project based on this order has yet been implemented. The framework contains strict rules on the period of the contract as well as on financing, investment, and project management.

Financial instruments

The concessionaire is the principal party responsible for all risks and perils of the project and is, therefore, responsible for the financing of the project as a whole. Financial arrangements may include equity and other means of financing (loans, bonds, asset-backed securities, or toll-backed securities). However, due to the fact that motorway concessions now in operation are not always intrinsically profitable (due to low traffic flows), they usually require public funding, paid in equal proportions by the state and the territorial local authorities.

The financial package for the joint participation of state and territorial local authorities, resulting in the signature of a finance agreement, is closely linked to the competitive bidding process.

While concessionaires do have great financial freedom, the evolution of toll rates is initially fixed. However, in the case of additional investment (enlargement for example, especially for the large historical concessions, the network of which is several hundred kilometres long), 5-year contracts are negotiated and could have an impact on toll charges. Contracts also deal with several clauses regarding return of good fortune, forfeiture, and fiscal framework.

Regulatory framework

Within the Ministry of Ecology, Energy, Sustainable Development, and Spatial Planning, the Directorate for Transport Infrastructure³⁵ is responsible for the regulation of road concessions granted by the national government. It co-ordinates all technical, legal, and financial issues between the state and the concessionaires and supervises the fulfilment of concession contracts.

³³ The European Council 'Works' Directive, 93/37/EEC, covering co-ordination procedures for public works contracts, replaced by the European Parliament and Council Directive, 2004/18/EC, covering co-ordination procedures for public works, supplies and services contracts.

³⁴ Law 93-122 of 29 January 1993 and its enforcement decree of 24 March 1993

³⁵ Formerly the French National Road Administration

Company contracts exist within a framework that regulates a number of commitments and objectives assigned to the concession company, particularly in respect of additional investments in exchange for a regulation covering toll charges over a period of five years. All company contracts include matters relating to development strategy, investment policy, financial and toll charge policy, safety policy, quality of the service provided, employment policy, and environmental policy.

Lessons learned

The concession policy of the 1950s gave France a boost in motorway construction that lasted from the 1960s through to the 1990s. During this period, investment came from other parties and all liability remained with the concessionaire. Concessionaires had great freedom to act. Neither oil crises, failing traffic flow, more stringent environmental issues, or security policies can be foreseen within a 60 year contractual period. This demands strong supervision and strong execution of the concession policy by the state.

In order to develop the benefit of long-term complex contracts even when toll charges are not possible, new methods of private sector participation in the financing of roads must be put into practice: as mentioned above, there are prospects for further state involvement by way of public private partnership (PPP) contracts.



Viaduct, France

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www.ppp.bercy.gouv.fr
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- Déroulement général des procédures pour la réalisation des autoroutes concédées en France (in French only, a digital copy is available upon request)
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- Autoroutes de France, Rapport du Conseil d'administration 2006

National experiences with PPPs: Germany

Overview of projects and network

PPP is still a relatively new tool in Germany. There is, however, a growing number of PPP projects in the road sector. In all, there are about 18 projects either in service (5), in the procurement phase (1), at the economic feasibility study stage (6), or under consideration (6), including two so-called 'F Model' projects implemented at local government level (tunnel under the river Warnow/Rostock, Herrentunnel/Lübeck).

Types of PPP used

Four first-wave so-called 'A Model' projects progressed through tender recently or are in the final phase of procurement (A1, 4, 5, and 8). The A Model offers—if necessary—a start-up payment provided by the government to the project company during the construction phase.

The second kind of projects implemented in Germany is known as F Model projects. The first two projects—both of which are tunnels that link existing local roads—are open to traffic in Rostock and Lübeck. Like the A Model, the F Model includes the possibility of a start-up payment. The cost effectiveness of four more F Model projects (A 281, 252, 8, B50n) is currently being verified.

Legal basis

There is no specific legal or statutory framework for PFI/PPP procurement. General rules must, however, be applied. The most important aspect of this process is to ensure highly transparent procurement using—for the time being—a negotiation procedure or a competitive dialogue.

However, there is specific legislation for the implementation of PPP projects in the road sector. In 1994 the Federal Parliament passed the Fernstraßenbauprivatfinanzierungsgesetz (FstrPrivFinG, Act concerning the private financing of trunk road construction projects), the legal basis for the so-called 'F Model'. According to the F Model, specific traffic infrastructure projects (such as bridges or tunnels) are planned, constructed, and operated by a private company, and are financed by a toll collected directly from those using the facility by the private operator. Although major efforts have been made to boost this new form of partnership, there are at present only a few projects in existence.

The A Model was implemented in the form of the legal introduction of a toll for heavy vehicles on federal motorways. According to the A Model, parts of the federal motorway network with high traffic volumes are widened by means of additional lanes and operated by a private investor. The refinancing is done by collecting toll from trucks with a gross vehicle weight of 12 t and more. However, it is not the investor who collects the toll, but the private company named 'Toll Collect' (a service provider acting on behalf of the Federal Republic of Germany), which has set up a toll system that is capable of calculating and collecting road use charges based on the distance travelled. The money collected by Toll Collect goes to the Federal Ministry and is then given to the private A Model operator.

In addition, legislation was recently passed with a view to reducing potential legal disadvantages relating to PPP projects. In summer 2005, the Federal Parliament adopted the PPP Acceleration Act (ÖPP Beschleunigungsgesetz 2005), which contained the following key aspects:

- Partial abolishment of real estate transfer tax in connection with PPP projects; and
- First steps to allow the involvement of open property funds in PPP.

Financial instruments

With PPP, private finance is typically used to fund construction, start-up and development costs, and working capital requirements. The main sources of private finance are: equity, bank debt, mezzanine bank debt, and finance leases.

Regulatory framework

So-called 'PPP Task Forces' or 'Centres of Competence' have been set up by the federal government as well as by several *Länder* authorities. These task forces mainly collect and distribute information, gather details of transactions in order to establish best practice, and try to compile non-binding standard documents. They have no legal competence.

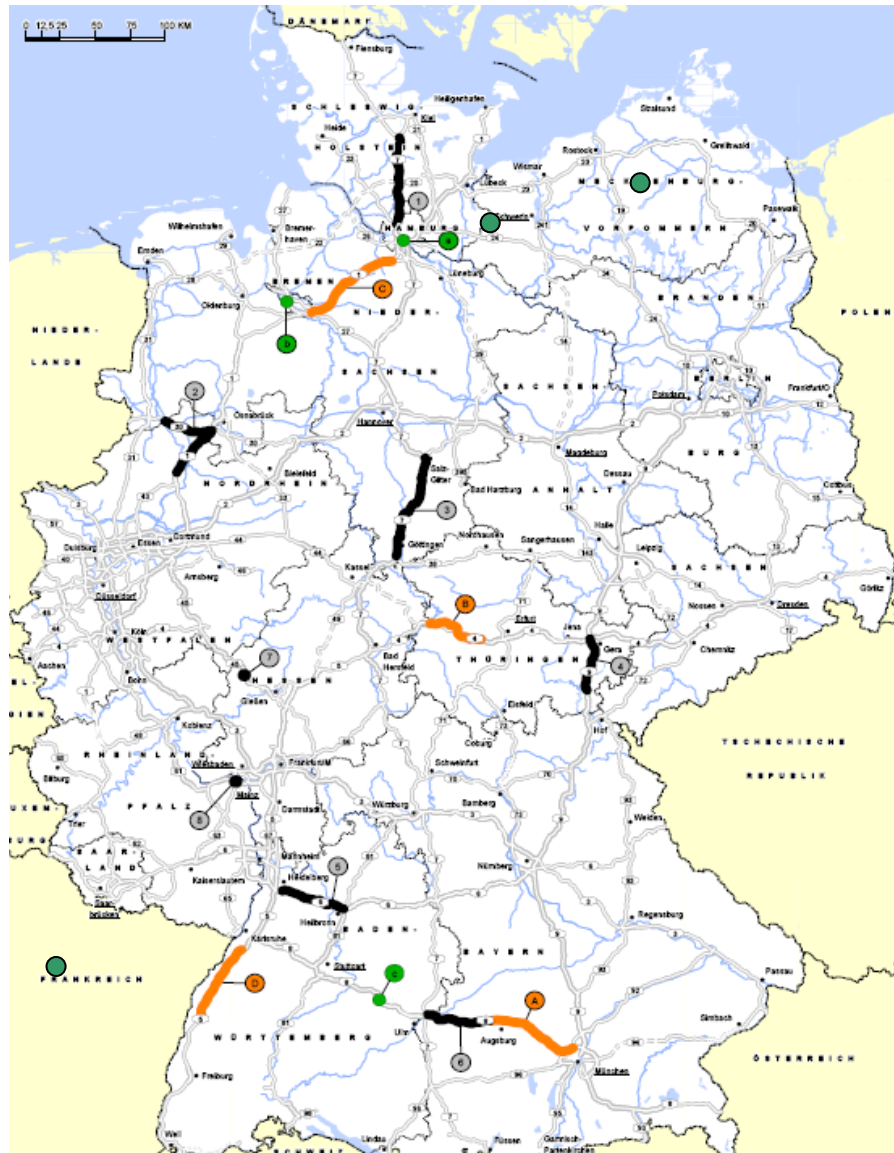
Lessons learned

The objectives of public private partnerships, i.e. to promote innovation, increase efficiency, and accelerate the completion of projects have been partially met with the first A Model projects.

One important factor when selecting projects is the question of cost effectiveness. The most profitable financing structure should be developed for each project in the preparation phase.

The first PPP project on a German motorway, the A Model A 8, has only been in operation since May 2007. For this reason, not much can be said about Germany's experience with the A Model. However, what can be said is that construction is progressing well, as is the concessionaire's service on the road (operation). Nevertheless, the federal government has already partially analysed the four A Model pilot projects and discovered some aspects that must be improved when launching other models, namely a simplification of the payment mechanism, a shortening of the procurement phase, and the improvement of functional aspects in order to create incentives for new ideas and modernization.

PPP PROJECTS IN GERMANY



Pilotprojekte  A A 8 Augsburg - München  B A 4 Landesgrenze HE/TH - Gotha  C A 1 Bremen - Hamburg  D A 5 Malsch - Offenburg	Projekte neu geplant 1 A 7 Bordesheim - Hamburg 2 A 1/A 30 Lotte/Osnabrück - Rheine 3 A 7 Salzgitter - Drammetal 4 A 9 Hermsdorf - Schleiz 5 A 6 Wiesloch-Rauenberg - Weinsberg 6 A 8 Ulm - Augsburg	Projektzuschnitt noch offen 7 A 45 im Bereich Dillenburg - Wetzlar 8 A 60/A 643 im Raum Darmstadt Weitere Projekte  a A 252 Hafenquerspanne  b A 281 Weserquerung  c A 8 Alaufstieg
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Source: Federal Ministry of Transport, Building, and Urban Affairs

References:

<http://www.bmvbs.de/-,1405/Verkehr.htm>

<http://www.bmvbs.de/Bauwesen/-,1521/Public-Private-Partnership-PPP.htm>

<http://www.vifg.de/de/index.php>

National experiences with PPPs: Greece

Overview: projects and network

In Greece, the road sector is one of the main areas³⁶ where PPPs—in the form of tolled motorways operated as concessions tendered on the market—have been developed. All six recently awarded concession contracts (i.e. contracts concluded two years ago) are transforming parts of the Trans-European Road Network (TERN) in Greece into motorways. In most cases, this involves the upgrading of existing national roads into motorways and the construction of new sections.



The **TERN in Greece** covers about 4,140 km of road. The most important axes of the TERN (approx. 2,500 km in total) have been included in the concession contracts and will be operated by the concessionaires as tolled motorways. A large part of these motorways was developed and funded directly by the public sector in recent years. The Greek central government, through the *MEPPPW*³⁷, has been the promoter of the entire toll motorway network either as public works or as concessions. All motorway concessionaires in Greece are entirely private. Concessionaires' schemes include many construction companies from Greece, Spain, Germany, and France.

³⁶ PPPs (in the form of concessions) were firstly implemented for transport projects: the new Athens Airport ('El. Venizelos'), the Greater Athens Ring Road ('Attiki Odos' motorway) and the Rion-Antirion high suspension bridge. Six motorway concession contracts then followed. In the last three years, many other smaller projects (i.e. worth less than €200 m) were completed using PPP schemes (mainly PFIs); these projects refer to schools, public buildings, hospitals, marinas, etc.

³⁷ MEPPPW is the Ministry of Environment, Physical Planning, and Public Works (MEPPPW).

Types of PPP used

All PPP road projects in Greece have been developed according to a BOT formula, whereby the concessionaire is responsible for raising the finance and bears most of the risks.

The duration of the concession contract is 30 years (plus 2 guaranteed years), starting from the date of the start of the concession.

Financial instruments

The financial arrangements may include equity and capital raised on the markets through different means (loans, bonds, asset-backed securities, or toll-backed securities).

Nevertheless, depending on the economic conditions of each project (i.e. the costs and revenues (traffic)), some public financing is incorporated into all motorway concession contracts. This usually includes a contribution from the state (which is co-financed by EU Funds) in the original investment (construction) cost³⁸, the cost of expropriations, and the cost of implementation of certain studies/surveys and issuance of permits. In certain cases, the concession also includes assets (road sections etc.), which have been publicly funded.

Legal basis

The concession of toll motorways in Greece is regulated by contract, which is based on the terms laid out in the tender documents and discussed in the final negotiations between the state and the concessionaire. Every concession contract is ratified by the Hellenic Parliament and becomes a Law. Any issue not included in the concession contract is regulated by the (general) legal framework of the state.

Law 3389/05 was promulgated on 22 September 2005. This law relates to PPPs and provides the legal framework for the implementation of 'projects' with certain specific features.

Regulatory framework

The technical regulation of road concessions granted by the national government is effected by specific special services of the General Secretariat of Co-financed Public Projects of the MEPPPW. One special service is involved in the supervision of the construction works (construction period of the contract) relating to each concession contract, while another special service is responsible for the supervision of all issues (maintenance, operation, financial matters, etc.) during the operation period of all the concession contracts.

Lessons learned

The implementation of motorway projects with PPPs (concession contracts) is a relatively recent development in Greece. In view of the fact that none of the road concession projects has yet reached the end of its concession period, it is difficult to reach conclusions.

However, Greece's experience with the tendering such projects has been positive. The following lessons have been learned from this phase. Due to the importance of the development of the motorways network in Greece and to the existing time restrictions relating to co-financing provided by EU Funds, the MEPPPW was extremely careful during the preparation of the tenders and the formulation of the terms and conditions to be included in the tender documents in order to minimise the probability of tender failure (i.e. of not receiving enough bids from tenderers).

References: www.ggde.gr and www.minenv.gr

³⁸ Usually this state contribution is paid in instalments during construction. These payments are defined in the concession contract and are effected in parallel to the payments made by the other sources of finance of the construction cost.

National experiences with PPPs: National Roads Authority, IRELAND

Overview of projects and network

In 1998 the government commissioned a consultancy study to explore the potential for PPP in Ireland. The report and its recommendations were accepted by the government and in June 1999, the then Minister for Finance announced a series of pilot programs in roads, water services, waste, education, and public transport.

There is now a significant programme of PPP projects underway in Ireland across a number of sectors. The main areas where PPP procurement has been used include:

- **Accommodation projects** e.g. schools, the National Conference Centre, Criminal Courts Complex etc using Design/Build/Operate/Maintain/Finance (DBFOM)
- **Transport** e.g. tolled roads, using a concession model (similar to DBFOM but with licence to collect user charges)
- **Social housing and waste/wastewater** projects in the Local Government area, where a mix of models is used.

In the road sector, 10 schemes have been procured as PPP schemes over the period 2001 to 2007. Four of these schemes are now at operational stage with a further six at construction stage, all of which are expected to be operational by end of 2010. All of the schemes are tolled schemes with one exception, the M50 motorway, which is operated as a public sector toll facility.

While the majority of road infrastructure projects are, and will continue to be, delivered by means of conventional procurement, PPPs continue to play an important role in the delivery of vital infrastructure. In 2008, the National Roads Authority was authorized to proceed with a second PPP programme with the objective of delivering new road construction with a capital value of €1 billion through private sector funding under a PPP mechanism. The plan is that these schemes, four in total, will be procured on an availability-based payment mechanism.

Types of PPP used and risk allocation

Road PPP projects in Ireland have followed the DBFO model with a long term concession typically extending for 30 years including the construction period. The public sector is responsible for planning, land acquisition, and statutory approval risk. The private sector is responsible for raising finance and carries construction and operational risk including traffic risk in respect of the tolled schemes.

Legal basis

In 2002 supporting legislation was enacted, the State Authorities (Public Private Partnership Arrangements) Act 2002. This is enabling legislation which clarifies state authorities' *vires* to enter into PPPs and gives them the power to enter into joint ventures.

In addition, the National Development Finance Agency Act 2002 established the National Development Finance Agency (NDFA) to advise state authorities on the optimum means of financing public investment projects to achieve value for money. State authorities must seek the advice of the NDFA on all projects with a capital value of over €30 million and on all projects that involve private finance, irrespective of the capital value of the project. The agency also advises on all aspects of finance, refinancing, and insurance (including risk) of projects. The NDFA may also fund projects itself or form companies for the purposes of financing projects, although to date it has not availed of these options.

Financial Instruments

The concessionaire is responsible for providing finance for the national road PPP schemes. Sources of finance are equity, bank debt (including European Investment Bank participation), and mezzanine debt. In some cases bond finance has been utilised. For the most part, national road PPP schemes procured to date are tolled schemes and the concessionaire bears traffic risk.

The public sector does provide grants in the form of construction payments payable during the construction phase and operation payments during the operational phase. The extent of the public sector grants is detailed in the tender documents and tenderers, as part of the competitive tender process, indicate the level of grant they require as part of their tender submission. The level of the grant required is determined by each tenderer having regard to their projections of costs and toll revenues receivable.

Toll charges are determined by the authority and increases are linked to changes in the cost of living (inflation index).

Regulatory framework

The government established a framework agreement with the social partners (Congress of Trade Unions, the Irish Business and Employers Confederation and the Construction Industry Federation, as well as the departments and agencies engaged in the PPP programme). The key features of the framework include clear statements of the scope, principles, and goals of the PPP programme and the identification of key project implementation issues. The framework also clearly recognises the critical role of social partnership and stakeholder consultation in underpinning the success of PPPs.

A full suite of PPP guidance documentation has been published by the Central PPP Unit within the Department of Finance to facilitate the PPP process and is available on the Central PPP Unit's web site at www.ppp.gov.ie. The guidance dovetails with the capital appraisal guidelines that apply to traditionally procured projects, but also includes specific technical tools to evaluate PPP proposals and tenders.

In relation to national road PPP schemes, the authority is the contracting party with the PPP companies and is responsible for the regulation of the road concession contracts. As part of its oversight of concessions, the National Roads Authority engages a monitoring team during the construction stage as overseer of the works with monitoring arrangements also established for the operations phase of the projects.

Lessons learned

The roads PPP programme has proved very successful to date with project delivery on budget and ahead of schedule. It is the National Roads Authority's view that announcing a programme of 10 schemes at the launch of the process generated significant interest in the Irish PPP programme resulting in major international contractors establishing in Ireland.

It is also the case that every tender competition needs to be examined on its own merit with the appropriate level of risk transfer required to be examined on a case by case basis. Also, general market moves must be recognised such as for example, risk sharing of insurance costs which emerged as a tenderer issue as the programme evolved.

The National Roads Authority also introduced initiatives aimed at reducing the PPP tender timelines and according tendering costs. Such initiatives included going from tender stage (ITN) to the provisional preferred tenderer, rather than short-listing two tenderers to proceed to BAFO, and accordingly reduce tenderer due diligence costs.

National experiences with PPPs: Italy

Overview of projects and network

Due to the fact that a framework for concession schemes has been in existence since 1956, the road sector is a major area of application for PPPs in Italy. These schemes have been applied both to public companies and to private and mixed companies, which has created a broad public-private environment in the field of road infrastructures. According to this general scheme, under the terms of the standard concession agreement, the concessionaire has the right to construct and manage specific motorway sections already previously granted in a concession, and to plan and carry out completion, upgrading, and maintenance works listed in the agreement. The motorway sections that are the subject matter of the concession are expected to be transferred without compensation and in a good state of repair to the Italian state upon the expiry date of the concession.

As a consequence of this historical process, some 23 toll concession companies now operate in Italy, mostly owned and operated by private parties, as well as several toll motorway projects carried out within a PPP scheme. The main players are the existing concession companies, the construction companies, and some Italian and foreign newcomers.

The new projects in the field of toll road concessions relate to different schemes and players. Some relate to projects at regional level, some at national level; some were unsolicited proposals, and some were concessions granted following a traditional tender procedure. There are now some 7 toll motorway projects (worth about €8 billion) being developed as pure PPP schemes.

The Italian road network includes: a) 20,181 km of trunk roads ('Strade Statali') owned and operated under concession from the Ministry of Infrastructures and Transports by ANAS, the state-owned road agency, created in 1928 and organised as a limited company since 2002; b) 6,830 km of motorway, of which 5,568 km are managed under toll in a concession scheme by the above-mentioned 23 companies (of which two major private groups own about 65 per cent of the network under concession), the rest being operated as toll-free roads by ANAS.

Types of PPP and risk allocation

According to the criteria set by the PPP Task Force, which has been operative in Italy since 1999 (and as a branch of the Presidency of the Council of Ministers since 2006), two types of PPP are applied in Italy: a) contractual PPP and b) institutional PPP. According to the first scheme (Art. 144 Legislative Decree 163/06), the public administration (PA) invites tenders in a restricted/open procedure on the basis of a preliminary draft, a business plan, and a concession contract. The PA evaluates the tenders received with a view to selecting the most economically advantageous tender. In the framework of the second scheme, the project is designed and presented by a promoter on the basis of a Prior Information Notice published by the PA; following the selection of the best proposal, the PA puts the promoter proposals out to tender and selects the concessionaire.

In both schemes, risk allocation is designed according to international standards, i.e. construction risk and traffic risk are borne by the concessionaire. A mechanism of toll adjustment based on a price cap scheme linked, *inter alia*, to the quality of the infrastructure and the operation of the motorway means that the concessionaire has a number of tools with which to limit toll risk. Administrative and permit risks are also borne by the concessionaire.

Legal basis

The Italian motorway sector is governed by a series of laws, ministerial decrees, and CIPE resolutions that have been issued and amended over time. The regulatory framework within which the motorway concessionaires must operate is regulated not only by motorway legislation but also by generally applicable law and special legislation (for example the Road Traffic Code) and especially by the agreements entered into force by the concessionaires and ANAS³⁹.

The concession agreements set the criteria and the general terms and conditions for the construction and operation of the toll infrastructure. The relative financial plan is attached to each agreement, containing, *inter alia*, the information required to apply the formula for the calculation and adjustment of the toll rates. The financial plan must be updated periodically, especially in the case of revisions due to *force majeure* or new extraordinary investments.

The relevant legislation related to toll motorways in a PPP regime is the Code of Public Works, amended several times since 1992, the year of a substantial reform of the sector. The Code of Public Works has recently been updated (D.Leg 163/2006, amended in 2007 and 2008), following certain guidelines provided by the EU, and includes a number of provisions specifically related to PPP.

As previously explained, a PPP in a regulated industry can be the result either of a contractual or of an institutional partnership. The institutional PPP is the result of a traditional concession tender, whereas the contractual PPP is a peculiar aspect of Italian legislation, since it allows a private potential concessionaire ('Promotore', or promoter) to apply for the granting of a concession related to a public work already identified by a public administration. The public administration assesses the proposal submitted by the promoter, stating the public interest of the proposal. If the promoter's proposal is recognised as being in the interest of the public, the public administration launches a tender on the basis of the technical proposal received; the promoter is given a right of first refusal, which has recently been amended at the same time as a number of other amendments to the Code of Public Works. According to the most recent amendment, passed in September 2008, the procedure for the selection of a concessionaire has been simplified with a possible shortening of the time necessary to select the competitors and grant a concession.

It is worth noting that the declaration of public interest related to a PPP project allows the promoter to apply for a state grant for the financing of the project.

Financial instruments

The financial instrument in widespread use for PPPs in the road sector is non-recourse or limited recourse project financing. The public bodies responsible for the granting of a concession in either scheme (institutional or contractual) appraises the financial soundness of the project according to internationally recognised assessment guidelines (i.e. DSC ratios, IRRs, etc.). In addition to that, the public bodies analyse the affordability, convenience, and value for money for the public sector, which implies a detailed study of requested public co-funding in capital expenses.

Several investment funds specialising in infrastructures have recently been created in Italy, both belonging to public and private financial institutions. This will theoretically ease the financing of toll motorway projects, together with the possible improvement of the skill and technical capacity of the major industrial players both in Italy and from abroad.

The recourse to project bonds and the refinancing of toll motorway projects following the initial risky stages is still limited in Italy.

³⁹ Italian national road administration

Regulatory framework

The regulatory framework has recently been modified by the introduction of concessions granted on a regional basis, relating to toll motorways within the borders of a region. Following this development, concessions are now granted in Italy on a national basis as well as on a regional basis. In the first case, ANAS is the public entity that subscribes the concessions on behalf of the Ministry of Infrastructures and Transports and controls the application of the terms foreseen in the concession, including investments, level of service, maintenance, tariffs, etc. ANAS is also the entity responsible for the assessment of the proposals forwarded by private companies under the promoter's scheme (see 'Legal Basis' above). In the case of regional concessions, the entity that negotiates and subscribes the concession is a public body owned by the regional municipality. This body is also responsible for the control of the concession throughout the life of the project; in some cases these bodies are owned on a parity basis by ANAS and the regional municipalities. Several regional municipalities have created a specific legislative framework, based on national guidelines and laws, and have identified a number of regional toll motorway projects.

The development of regional projects and regional procedures to identify and carry on PPPs in the road sector has dominated the PPP sector in Italy in recent years. In principle, in those regions where a regional legislative and regulatory framework is in place, regional projects are developed through these entities, whereas multi-regional projects are negotiated and awarded by ANAS. Some regions, e.g. Lombardy, are now managing a number of toll motorway projects worth €9 billion.

In 2007 and 2008, several laws regarding regulation during the operation of toll motorway projects were passed. These laws have established a clear framework for the periodical revision of the financial plan related to the concession contract, including the toll adjustment mechanism. Furthermore, these recent laws have increased ANAS's power to force concessionaires to respect their contractual obligations.

Lessons learned

Italy's experience with PPP can be summed up in three groups of lessons learned:

- the Asti-Cuneo toll motorway, a PPP project based on a tender procedure;
- 4 motorway sections identified and launched by ANAS for PPP development;
- the list of toll motorway projects managed by the Lombardy Region, each of which is at a different stage of development.

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www.stradeanas.it ANAS SpA

www.utfp.it 'Unità Tecnica Finanza di Progetto' - Italian PPP Task Force

National experiences with PPPs: the Netherlands

Legislation

In the Netherlands, there are no specific rules for PPP procurement. The main legal rules governing PPP procurement are those of EC law. The EC Procurement Directives have been implemented in the Netherlands through the so-called '*Besluit aanbestedingsregels voor overheidsopdrachten*' (BAO) and the '*Besluit aanbestedingen speciale sectoren*' (BASS), the latter relating to procurement in the utilities sectors, the former to public works, supply, and service contracts in general. Both came into effect on 1 December 2005.

In addition to these regulations, a legislative proposal for a new Procurement Act was submitted to the House of Representatives in March 2006.

PPP body

There is no body specifically set up to oversee PPP projects. In order to promote the use of public private partnerships in the Netherlands, the PPP Knowledge Centre was established within the Ministry of Finance in January 1999. The PPP Knowledge Centre acts as a kind of central information desk and adviser for all public-sector bodies interested in this kind of co-operation.

PPP structures

The structure most commonly used for schemes involving private financing is one whereby the procuring authority awards the design, building, financing, maintenance and, sometimes, operation of a project under a long-term (e.g. 25 years) Design, Build, Finance, and Maintain Agreement (DBFM Agreement) to a special purpose company (SPC) incorporated by one or more shareholders (*PPP Contractors*). The SPC then attracts financing from both lenders and its shareholders to finance the project. Moreover, the SPC normally enters into one or more sub-contracts with (a group of) its shareholders to sub-contract its design, building, and maintenance obligations under the DBFM Agreement.

Private finance

The typical sources of finance can be categorised as follows:

- equity and subordinated loans to be provided by the PPP contractors/shareholders of the SPC
- secured loans from third party lenders (usually commercial banks).

National experiences with PPPs: Norway

Overview of projects and network

Norway adopted a programme of three pilot road projects to test the PPP model. These pilot projects were initiated by the Storting (Norwegian parliament). In response to this, the government included the pilot PPP projects in the National Transport Plan for the period 2002–2011 when presenting the plan to the Storting on 15 February 2001. The focus of the projects was on effectiveness and efficiency. It was therefore clear that the projects should be benchmarked to see whether the PPP model is a more efficient method of implementing road projects than the traditional method. At the same time, it was important to establish whether the PPP model could be implemented without losing political influence and public control.

The contract for the first PPP project (E39 Klett–Bårdshaug in Sør-Trøndelag County, in mid-Norway) was signed in April 2003 and the operation period began in June 2005. For the second PPP project (E39 Lyngdal–Flekkefjord in the south of Norway towards Stavanger), the contract was signed in April 2004 and the operation period began in August 2006. The E18 Grimstad–Kristiansand project on the south eastern coast of Norway is the third PPP pilot project. Three of the seven sections of this project have been completed and in operation since July 2008. All sections are expected to be completed and in operation in August 2009.

The total length of the three PPP road projects is almost 100 km, whereby several kilometres are tunnels. The total investment amounts to approximately NOK7 billion (= €0.78 billion).

The distance between the south and north of Norway is the same as between the south of Norway and the Mediterranean. The road network in Norway is 93,000 km long and includes 27,000 km of national roads, 27,000 km of county roads, and 39,000 km of municipal roads. The Norwegian Public Roads Administration is responsible for national roads. Starting in 2010, the length of the national road network will decrease to about 10,000 km and the length of the county road network will increase to about 44,000 km. There are about 300 km of multi-lane and about 450 2-lane motorways.

Types of PPP used and risk allocation

In accordance with the contract ('PPP contract') concluded by the selected tenderer ('PPP company') and the Norwegian Public Roads Administration, the PPP company assumes full responsibility for delivering the developed section based on a DBFO (Design, Build, Finance, and Operate) contract.

The Norwegian PPP model presupposes a cost-effective allocation of risk between the public and private sector. The risk allocation is specified in the contract. Pursuant to the contract, the PPP company is responsible for a significant part of the risk related to the design, construction, progress, operation, maintenance, and financing of the project. This is in line with the principle that the PPP company itself is, to a large extent, able to decide how to fulfil the contract, and that this freedom must correspond to an equally large risk.

The PPP company has little or no influence on certain types of risk (e.g. changes to plans caused by public authorities due to circumstances outside the control of the PPP company, delayed acquisition of land and property, the discovery of cultural objects on the construction sites etc.). These kinds of risks will be allocated to the Norwegian Public Roads Administration. There is also no transfer of traffic income risk to the PPP company.

The contracts are drafted in such a way as to ensure that all risks not expressly assumed by the Norwegian Public Roads Administration must be assumed by the PPP company.

The operating period starts when the road is opened, and the PPP company will be paid an annual compensation during the minimum 25 year operating period. The PPP company will not receive any compensation until construction has been completed and the operating period has commenced.

The Norwegian PPP model is based on the PPP company delivering a road to the road users on behalf of the state. The overall objectives are, therefore, reflected in the output specifications for the road and in the incentive mechanisms incorporated in the payment mechanism. This means that the technical specifications, to the extent possible, are based on output specifications that allow the company to find its own solutions for complying with these specifications. The payment mechanism calculates the annual payment and is linked to the road being available and to functional and safety-related standards being met.

The payment mechanism regulates how the PPP company is compensated and links payment to delivery. There is a yearly base payment consisting of two major elements: 'availability payment' and 'maintenance monitoring payment'. The first one is linked to the road being open and available and the other is linked to the output specifications of the road delivery. There are also two minor elements, the safety bonus and compensation for extra wear and tear because of traffic volumes above the levels of traffic forecast. The payment mechanism emphasises the transfer of sufficient risk to the PPP company, while taking into account the bankability of the project.

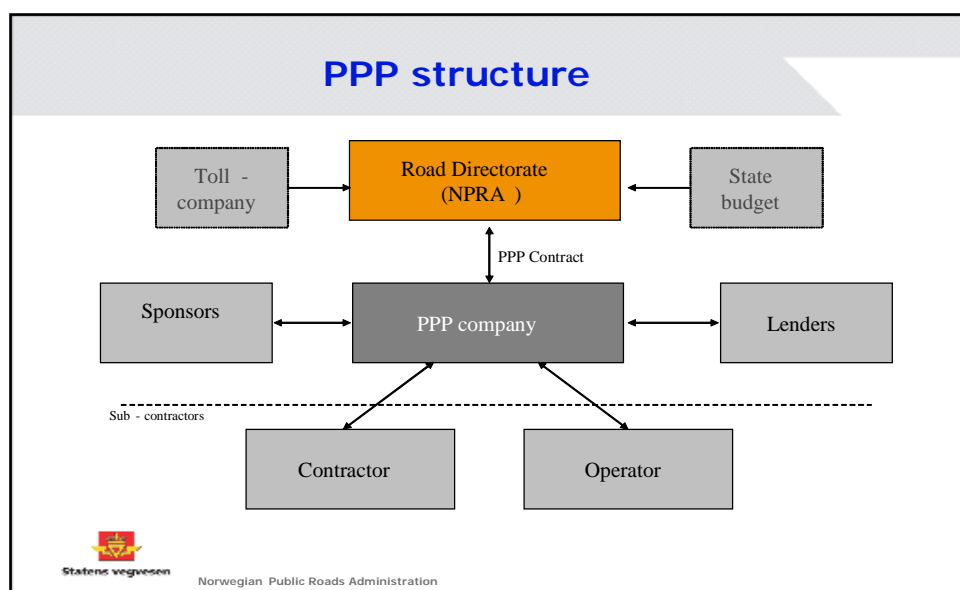
Legal basis

Norway does not have any dedicated PPP legislation.

Financial instruments

The annual compensation to the PPP company is paid regularly by the state over the entire operating period of a minimum 25 years and is funded by toll and appropriations from the state budget. The PPP company is not involved in tolling and has no traffic income risk.

The PPP company and their sponsors are responsible for raising the finance, equity, and loans. There is no public contribution during the construction phase and all investments are financed by the PPP company.



Regulatory framework

As head of the Norwegian public roads administration, the Road Directorate is the PPP company's contracting party. The PPP roads are public roads owned by the state and part of the state road network. The Norwegian public roads administration will exercise public authority in accordance with Norwegian traffic and road legislation in the same manner as for other state roads. The Norwegian public roads administration distinguishes clearly between its roles as a contracting party and as public authority.

Lessons learned

The government will evaluate the three PPP projects in the National Transport Plan for the period 2010–2019.

References:

<http://www.ppproads.no>



Fedafjorden Bridge, route E39, section Lyngdal-Flekkefjord, Norway

National experiences with PPPs: Portugal

Overview, network and projects

Overview

The entire Portuguese market for PPPs include roads, rail, ports, hospitals, water, the new Lisbon Airport and other investments under development within the jurisdiction of municipalities.

The importance of the PPP Portuguese market was over 1. 2% of the GDP during the years 2000-5, twice the level in UK, revealing that the country relies more on PPP to meet public investment than most of other European countries.

Network and projects

The National Road Plan (PRN) currently in force was approved in 1998 (Decree Law 222/98) and foresees 11,300 Km for the National Road Network (RRN) and 5,100 Km for Regional Roads.

According to the classification as defined in the PRN, the national road network (see Table 1) consists of 2,600 Km of main/fundamental roads (Itinerários Principais, IP), 3,400 Km of complementary itineraries (Itinerários Complementares, IC) and 5,300 Km of national roads (Estradas Nacionais, EN). Complementary itineraries and national roads constitute the national complementary network (8.700 km).

The motorways system account for 29% of the PRN (3.300 Km) and for 25% of the existing Portuguese road TERN network (2.800 Km).

By the end of 2007, about 85% of the fundamental network (IP) was in operation (94% is expected to be in operation in 2013) and 41% of the complementary itineraries were already in operation (57% due in 2013).

Table 2 exhibits the road motorway network under a PPP contract concession (toll and shadow toll systems).


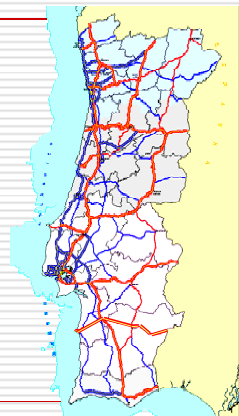

 INSTITUTO DE INFRA-ESTRUTURAS
 RODoviárias de Portugal

TABLE 1

NATIONAL ROAD PLAN (NRP)

Category of Road		Length (km)
Fundamental Network	IP	2.600
Complementary Network	IC	3.400
	EN	5.300
National Road Network		11.300
Motorways (29%)		3.300
TERN (25%)		2.800
Regional Roads	ER	5.100



Regulatory Framework, Types of PPP and risk allocation

Since 2007 Portugal has undergone a major development of the National Road Network launching a new wave of PPPs (a previous wave have started in 1997, besides a so-called first generation of PPP that started in 1972). Investment programs are determined by the Government, within the context of the PRN Plan.

The road governance has been restructured since 2007 under the setting up of an Institutional Management and Financial System with the following basic milestones:

1. Foundation of a main entity as representative of the State in the concession contracts – InIR, IP – Instituto de Infra-Estruturas Rodoviárias. InIR, IP also acts as supervisor of the road infrastructure sector and as technical and economic regulator. It is financed by a specific contribution from operators and by the public budget.
2. The grant of a 75-year concession contract encompassing the development and management of the PRN to Estradas de Portugal, SA (EPSA) a 100% state-owned company (formerly EP, EPE) which, until 2007, acted as supervisor, regulator (functions since then assumed by InIR, IP) and network operator.

According to this contract, EPSA has the right to earmark revenues (taxes imposed on fuel consumption, Contribuição de Serviço Rodoviário, CSR), collected from the ISP (tax on petroleum products). Revenues also include tolls, levels of capacity available and level of service payments. EPSA also has the right to take over existing State concessions (at present under the direct control of State) and supervised by InIR, IP, upon their termination (in 30 years) as well as the right to their toll revenues.

EPSA will accordingly be financed by CSR, its own revenues, EU grants and long term loans which include market and EIB loans and bonds.

As part of the 2007 new governance structure, the State, through MOPTC, Ministério das Obras Públicas e Comunicações, launched 11 new PPP sub-concessions, under EPSA. These new concessions will be designed in the format of DBFO concessions (design-build-finance-operate) and will include the construction of new roads and the maintenance and modernization of existing roads, with a global total of almost 2,500 Km and amounting to about 6 G€.

3. Sub-concession contracts between EPSA and the private operators were established according to Decree Law 18/2008, Código dos Contratos Públicos, which sets up new procedures for public procurement under and according to the Directives 2004/17/EC and 2004/18/EC.

A transfer of risks was settled in almost cases between two contract levels (State – EPSA and EPSA – Sub-concessions) in order to minimize asymmetries between the risk matrices. Major differences between these two types of contracts are in EPSA traffic risk, where no comparative history exists (with impact on revenues).

4. The EPSA concession contracts establish a complex set of obligations in order to accomplish detailed quantitative targets on environmental, safety and level of service indices. The regulator authority (InIR,IP) shall raise enforcement rules to monitor how EPSA is performing in these areas.
5. Operational rules were approved by the regulator authority in the Manual of Operation and Maintenance (MOM) and in the Quality Control Plan (PCQ). Economic and financial information was provided to the regulator authority in order to enable monitoring the concession's performance and its sustainability in the short and medium-long term.

Concerning PPP, the Decree Law 86/2003 established the general principles of efficiency concerning risk share between both the public and the private partners. This law was amended in 2006 (Decree law 141/2006). This new regulation has made the reinforcing coordination of public entities involved both in the launching of new PPP contracts and/or in the renegotiation processes possible. The new law will also enable there to be a closer financial management and a harmonized risk share, without additional risks for the public entities.

Financial Instruments

New projects are financed through risk mitigation strategies under project finance schemes including partnerships with operators, banks (national, international), EIB loans and taking minority stakes (equity capital).

Lessons Learnt

Some challenges have to be taken into account for the success of PPPs and “the devil is always to be found in the details”.

As far as selection and preparation phases of the PPP process are concerned, attention should be given to political priorities and stakeholder consultations, risk analysis of traffic forecasts and technical solutions, other risks and risk share, as well as to decisions concerning user/taxpayer costs.

To structure the financing of a PPP, in depth knowledge of the regulatory and economic framework is paramount, in order to draw up clear-cut tender documents and favor competitive and sequential bids.

The success of the construction phase of a PPP will depend on the monitoring of time and costs and on the team assignment and implementation of the contract procedures to ensure the opening within the scheduled time limit.

As far as operations are concerned, the setting up of a supervision team with good skills in legal, engineering and finance expertise, are strongly recommended in order to comply with contractual operating standards and to minimize renegotiation procedures.

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National experiences with PPPs: Spain

Overview of projects and network

The road sector is one of the main areas where PPPs have been developed in Spain in the form of BOT toll motorways operated as concessions tendered on the market. The current toll motorway network includes about 3,300 km of road. This represents around a quarter of the whole Spanish motorway network, the rest being toll-free motorways developed and funded directly by the public sector. The Spanish central government, through the Ministerio de Fomento⁴⁰, has been the promoter of the largest part of the toll motorway network, with a total length of around 2,750 km of motorway under concession. Regional and local authorities are responsible for the rest.

ROAD CONCESSIONS IN SPAIN

Public authority	Length (km)
National government	2,759
Regional and local governments	523
Total	3,282

The first projects were developed in the 1960s, and until the 1990s most Spanish toll motorways were predominantly concentrated along the eastern Mediterranean coast, in the north and north-east of the country, with some isolated sections near Madrid, Seville, and the north-west. Over the last 10 years, new sections have been developed, contributing to a more widespread distribution of the tolled network, particularly around Madrid.

TOLL MOTORWAY NETWORK IN SPAIN



Source: www.aseta.es

⁴⁰ Spanish Ministry of Transport and Infrastructures

Unlike other European countries with substantial toll motorway networks, all motorway concessionaires in Spain are entirely private. Incidentally, some of the world's largest players in the motorway concession sector are Spanish companies.

Types of PPP used and risk allocation

Most Spanish PPP road projects have been developed according to a BOT and DBOT formula⁴¹, whereby the concessionaire is responsible for raising the finance and bears most of the risks. Nevertheless, some clarifications must be made:

- The first toll motorway projects developed (mainly those tendered in the 1960s and 1970s) included two specific clauses that represented a substantial transfer of risk to the public authorities: the currency exchange rate guarantee for the debt raised abroad, and the state guarantee for part of the debt⁴².
- Some of the projects developed more recently would have not been feasible under a fully private finance scheme, and so some public contributions have been incorporated⁴³.

Therefore, Spanish road PPPs include different formulae, in which the public participation may include elements of risk sharing, as well as some finance sharing. However—and this also applies to projects developed after the two above-mentioned clauses were repealed in 1988—risk in most projects is primarily borne by the private concessionaire (except *force majeure*), and so the public element in the PPP has predominantly taken the form of public finance or contributions.



⁴¹ Certain projects promoted by some regional authorities have been developed according to a DBFO scheme with a shadow toll scheme.

⁴² At the time, the Spanish capital markets were neither large nor mature enough to provide sufficient funds for the development of the projects, and so this clause was deemed necessary to allow private concessionaires to raise capital in foreign markets without introducing an exchange rate risk which might have rendered the projects unfeasible.

⁴³ These have included direct financial contributions in the form of subsidies for the construction, the inclusion of sections or assets built by the public authorities, or loans in preferential terms provided by the public authorities.

Legal basis

The concession of toll motorways in Spain has been regulated since 1972 by Law 8/1972: Toll Motorways. Certain provisions of this law were subsequently repealed, notably those relating to the state guarantee for loans raised abroad and the exchange rate guarantee for the repayment of such loans at the original rate (both articles were removed by Law 25/1988: Roads). A new law regulating the concession of public works was approved and enacted in 2003 (Law 13/2003: Regulating the Concession of Public Works). This law updated different legal aspects of PPPs, including a new approach to the allocation of risk to the private concessionaire consistent with EU regulations, and updated further provisions of Law 8/1972: Toll Motorways. In April 2008 a new Law of Public Sector Contracts came into force (Law 30/2007) superseding the previous Law 13/2003. The new law further develops the principle of PPP, making explicit provisions specifically aimed at projects where a partnership between the public and the private sector is required.

Financial instruments

The concessionaire is responsible for the financing of the project and bears the risk accordingly. Financial arrangements may include equity and capital raised on the markets through different means (loans, bonds, asset-backed securities, or toll-backed securities). Nevertheless, it is possible to incorporate some public financing into a concession if the economic conditions of the project make it advisable to do so. This may include capital down payments by the granting authority to be returned later during the lifetime of the project according to the terms of the contract, or incorporating into the concession certain elements or assets which have been publicly funded.

Regulatory framework

The Dirección General de Carreteras⁴⁴ is responsible for the technical regulation of road concessions granted by the national government. As for the financial regulation, a department in the Transport Ministry called Delegación del Gobierno en las Sociedades Concesionarias de Autopistas de Peaje, is responsible for the co-ordination between the state and the concessionaire companies. This department is responsible for supervising the fulfilment of concession contracts, the evolution of the financial conditions and balance sheet of the different concessions, as well as their fares, traffic, operational information, and accounts.

Lessons learned

Whereas the legal system described in sections above allowed for the construction of a substantial network of toll motorways in the 1960s and 1970s, the two clauses described above represented a considerable financial liability for the state:

- As for the exchange rate guarantee, the state was responsible for selling the concessionaires the currencies required for the repayment of loans at the rate that applied when they were raised. As the national currency (the peseta) normally depreciated against the foreign currencies in which the loans had been raised, this represented a substantial liability for the state, which had to devote a large part of its road budget to this item in the 1970s and 1980s.
- The oil crisis of the 1970s limited traffic volumes in some new concessions below the levels forecast. Some companies went bankrupt as a result. Because these companies had a state guarantee, they and all their liabilities had to be nationalised into a National Motorway Company. This company was later privatised.

References: www.fomento.es; www.boe.es www.aseta.es

⁴⁴ Spanish national road administration

National experiences with PPPs: United Kingdom

Overview of projects and network

The Highways Agency is an executive agency of the Department for Transport (DfT), and is responsible for operating, maintaining & improving the strategic road network in England on behalf of the Secretary of State for Transport. The strategic road network consists of 7,000 kilometres of all purpose trunk road and motorway that carry one-third of all vehicle traffic and two-thirds of all freight journeys.

The Private Finance Initiative (PFI) was launched within the UK in 1992. It was intended to facilitate closer co-operation between the public and private sectors and introduce private sector skills and disciplines into the delivery and management of projects and services traditionally undertaken by the public sector.

The Highways Agency formally launched its use of PFI to procure a road service on parts of the motorway and trunk road network in August 1994. The private sector, over the 30-year life of the contract, assumes responsibility for the operation and maintenance of a length of existing road and the detailed design and construction of specified improvement schemes and their subsequent operation and maintenance.

Types of PPP used

The Highways Agency operates a portfolio of Design Build Finance Operate (DBFO) projects which account for around 10 per cent of the network, rising to 17 per cent with the M25 DBFO which, at the time of writing, is currently under negotiation with the preferred bidder, Connect Plus.

The ten projects are grouped into Tranche 1 and 1A contracts (the first eight) and the subsequent A1 Darrington to Dishforth DBFO and A249 Stockbury (M2) to Sheerness DBFO. The first eight contracts primarily used the shadow toll payment mechanism, based on the number of vehicles using the road. The A1 Darrington to Dishforth contract uses the Active Management Payment Mechanism. The A249 contract combines the Active Management Payment Mechanism with elements of the Availability Payment Mechanism.

All of the DBFO contracts are based on the relevant 4ps (Public Private Partnerships Programme) model contract. The M25 DBFO contract is SOPC4 (Standardised of PFI Contract Terms) compliant and highways derogations, if required, are applied for.

In addition, four other private finance contracts are managed by the agency; M6 Toll, Second Severn Crossing, National Traffic Control Centre (NTCC) and National Roads Telecommunications System (NRTS).

The M6 Toll Motorway, the first toll motorway in the UK, opened in December 2003. The scheme is a privately financed three lane motorway and is 27 miles (43 km) in length. The 53 year concession is to privately finance, design, build and operate the new road and transferring it to the government at the end of the period. Costs are recouped through setting and collecting tolls.

Legal basis

DBFO Contracts are awarded under the negotiated procedure applicable to Public Works Contract Regulations 1991 (SI 1991/2680) which implement the EC Works Directive (93/37/EEC).

The M6 Toll Road was constructed under the provisions of the Highways Act 1980 and went out to concession and is being tolled under the provisions of the New Roads and Street Works Act 1991.

Financial instruments

The DBFO contract is usually for a period of 30 years, from the commencement date. Since 30 years is currently beyond the range of conventional debt, the choice of period also encouraged financial innovation, use of alternative sources of funding and the possibility of re-financing after the completion of construction, all of which can provide financial benefits to the Highways Agency.

When a DBFO Co is referred to as bearing the financing risks, (ignoring the obvious risk of cost increases in construction) this should be interpreted as bearing the risk of movement in the interest rate after contract award (which can be mitigated by the use of financial derivatives) and the risk of default under the debt and derivative facilities.

Regulatory framework

The Highways Agency is responsible for managing the contracts on behalf of the Department for Transport. Partnerships UK and the Treasury provide guidance on the procurement and operational phases of PPP/PFI contracts. The Highways Agency is externally audited by the National Audit Office (NAO).

After the contracts were awarded, the Highways Agency introduced the Private Finance Best Practice Group to ensure consistency and to identify, develop and share best practice in the management of the Agency's private finance contracts.

Lessons Learned: reports on the first four DBFO contracts

Following the award of DBFO contracts in 1996; the NAO examined the procurement process and the final contractual arrangements to ascertain whether the process and deals were likely to deliver good value for money.

The NAO report⁴⁵ was very positive, emphasising that the process for delivering the first four DBFO projects was well managed by the agency and that value for money was achieved. The NAO concluded that the first four projects alone were likely to deliver savings of about £100 million.

⁴⁵ The Private Finance Initiative: The First Four Design, Build, Finance and Operate Roads Contracts, National Audit Office, 28 January 1998 <http://www.nao.org.uk/pn/9798476.html/>

The NAO report highlighted that two of the four projects were expected to deliver savings of around 20 per cent, compared with conventionally procured alternatives, but that the other two could cost some 7 per cent more.

The main criticism was that the Agency's analysis of the winning bids overstated the expected savings by £69 million because of the Treasury's advice that an 8 per cent discount rate be used for transport projects. A 6 per cent rate was normally used across government for investment projects.

The NAO report was the subject of a Public Accounts Committee (PAC) hearing. The PAC acknowledged that DBFOs allowed for a productive partnership between the public and private sectors; provided incentives for efficient management; encouraged a commercially minded operating industry; and delivered the environmental and economic benefits of road improvement earlier than would be possible with conventional procurement arrangements.

References

Highways Agency;
www.highways.gov.uk

Department for Transport;
www.dft.gov.uk

National Audit Office;
www.nao.gov.uk

Partnerships UK;
www.partnershipsuk.org.uk

4ps;
www.4ps.gov.uk

National experiences with PPPs: Countries without PPPs (Switzerland & Luxembourg)

Switzerland

A certain part of the income from fuel taxes is allocated to road budgets, as well as 100 per cent of income from the *Motorway Vignette*. So far, these resources have sufficed to meet all road development and operation requirements for the national network.

The Swiss government charges a distance-based duty on heavy good vehicles, based on the weight of the truck and its emission category. This duty is levied on the entire Swiss territory and Liechtenstein. All vehicles of more than 3.5 tones that are used to transport freight, are registered in Switzerland, or travelling on the Swiss road network are subject to this duty. One-third of the income generated is transferred to the cantons; the remaining two-thirds are kept by the state. The cantons mainly use this funding to cover costs not met through other means. The state uses its share to fund rail projects such as the Rail 2000 (new lines through the Alps, links to the European high-speed rail network, and rail noise abatement measures).

Luxembourg

Luxembourg does not have a dedicated regulation on PPP, other than the 2003 Law on Public Contracts. To date, it has not been necessary for the Luxembourg road administration to use PPP schemes for the development of any road projects.

Appendix B – References and resources

Resource Book on PPP Case Studies. 2004. European Commission. Directorate-General Regional Policy

Guidelines for Successful Public-Private Partnerships. March 2003. European Commission. Directorate-General Regional Policy

Guidance on Setting up Institutionalized Public-Private Partnerships. 2004. European Commission

Green Paper on public-private partnerships and Community Law on public contracts and concessions. 2004. European Commission

Public-Private Partnerships. Options to ensure effective competition. 2005. Speech by Mr. Charlie McCreevy, European Commissioner for Internal Market and services

Case Studies of Transportation. Public-Private Partnerships around the World. Final Report. July 2007. U.S. Department of Transportation. Federal Highway Administration

Public-Private Partnerships: Terms Related to Building and Facility Partnerships. 1999. Government Accounting Office (USA)

The Capital Beltway & Public-Private Partnerships. 2007. National Council for Public-Private Partnerships

<http://www.fhwa.dot.gov/ppp/> (USA Federal Highway Administration website for ppp: Extremely interesting)

http://ec.europa.eu/internal_market/publicprocurement/index_en.htm

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52005DC0569:EN:NOT>

<http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/05/698&format=HTML&aged=0&language=EN&guiLanguage=en>

<http://www.ncppp.org> (USA National Council for Public-Private Partnerships)

http://www.hm-treasury.gov.uk/public_private_partnerships_index.htm (UK Government website on PPP)



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