

4<sup>th</sup> International Conference on Road and Rail Infrastructure 23-25 May 2016, Šibenik, Croatia

# Road and Rail Infrastructure IV



#### CETRA<sup>2016</sup>

# 4<sup>th</sup> International Conference on Road and Rail Infrastructure 23–25 May 2016, Šibenik, Croatia

TITLE

Road and Rail Infrastructure IV, Proceedings of the Conference CETRA 2016

EDITED BY Stjepan Lakušić

ISSN 1848-9850

PUBLISHED BY
Department of Transportation
Faculty of Civil Engineering
University of Zagreb
Kačićeva 26, 10000 Zagreb, Croatia

DESIGN, LAYOUT & COVER PAGE minimum d.o.o. Marko Uremović · Matej Korlaet

PRINTED IN ZAGREB, CROATIA BY "Tiskara Zelina", May 2016

COPIES 400

Zagreb, May 2016.

Although all care was taken to ensure the integrity and quality of the publication and the information herein, no responsibility is assumed by the publisher, the editor and authors for any damages to property or persons as a result of operation or use of this publication or use the information's, instructions or ideas contained in the material herein.

The papers published in the Proceedings express the opinion of the authors, who also are responsible for their content. Reproduction or transmission of full papers is allowed only with written permission of the Publisher. Short parts may be reproduced only with proper quotation of the source.

Proceedings of the 4<sup>th</sup> International Conference on Road and Rail Infrastructures – CETRA 2016 23–25 May 2016, Šibenik, Croatia

# Road and Rail Infrastructure IV

#### **EDITOR**

Stjepan Lakušić Department of Transportation Faculty of Civil Engineering University of Zagreb Zagreb, Croatia

#### CFTRA<sup>2016</sup>

4<sup>th</sup> International Conference on Road and Rail Infrastructure 23–25 May 2016, Šibenik, Croatia

#### **ORGANISATION**

#### CHAIRMEN

Prof. Stjepan Lakušić, University of Zagreb, Faculty of Civil Engineering Prof. emer. Željko Korlaet, University of Zagreb, Faculty of Civil Engineering

#### ORGANIZING COMMITTEE

Prof. Stjepan Lakušić Prof. emer. Željko Korlaet Prof. Vesna Dragčević Prof. Tatjana Rukavina Assist. Prof. Ivica Stančerić Assist. Prof. Saša Ahac Assist. Prof. Maja Ahac Ivo Haladin, PhD Josipa Domitrović, PhD Tamara Džambas Viktorija Grgić Šime Bezina All members of CETRA 2016
Conference Organizing Committee
are professors and assistants
of the Department of Transportation,
Faculty of Civil Engineering
at University of Zagreb.

#### INTERNATIONAL ACADEMIC SCIENTIFIC COMMITTEE

Davor Brčić, University of Zagreb Dražen Cvitanić, University of Split Sanja Dimter, Josip Juraj Strossmayer University of Osijek Aleksandra Deluka Tibliaš, University of Rijeka Vesna Dragčević, University of Zagreb Rudolf Eger, RheinMain University Makoto Fujiu, Kanazawa University Laszlo Gaspar, Institute for Transport Sciences (KTI) Kenneth Gavin, University College Dublin Nenad Gucunski, Rutgers University Libor Izvolt, University of Zilina Lajos Kisgyörgy, Budapest University of Technology and Economics Stasa Jovanovic, University of Novi Sad Željko Korlaet, University of Zagreb Meho Saša Kovačević, University of Zagreb Zoran Krakutovski, Ss. Cyril and Methodius University in Skopje Stjepan Lakušić, University of Zagreb Dirk Lauwers, Ghent University Dragana Macura, University of Belgrade Janusz Madejski, Silesian University of Technology Goran Mladenović, University of Belgrade Tomislav Josip Mlinarić, University of Zagreb Nencho Nenov, University of Transport in Sofia Mladen Nikšić, University of Zagreb Dunja Perić, Kansas State University Otto Plašek, Brno University of Technology Carmen Racanel, Technological University of Civil Engineering Bucharest Tatjana Rukavina, University of Zagreb Andreas Schoebel, Vienna University of Technology Adam Szeląg, Warsaw University of Technology Francesca La Torre, University of Florence Audrius Vaitkus, Vilnius Gediminas Technical University

# INVESTMENTS IN INFRASTRUCTURE THROUGH PPP IN SPAIN PAST ACHIEVEMENTS AND CURRENT TRENDS

#### Alejandro Lopez Martinez<sup>1</sup>, Cesar Queiroz<sup>2</sup>

- <sup>1</sup> OHL Strategic Planning, Madrid, Spain
- <sup>2</sup> Consultant on Roads and Transport Infrastructure, Former World Bank Highways Adviser, Washington, D.C., USA

#### **Abstract**

Concessions and public-private partnership (PPP) agreements appear to be an adequate approach to tackle infrastructure deficit and promote sustainability in the road sector. However, when different models are analyzed in several countries and regions, successful stories are not always found. In order to build a successful story, several steps are needed, including political commitment and clear policy, competent public administration, a legislative framework to enable PPP, availability of both public and private capital, and willingness to invest by the private sector. Also, a positive economic framework is a contributing success factor. This paper reviews the required legal framework that supports the concept of PPP, such as a suitable procurement law promoting a competitive selection of concessionaires, the transfer of risks to the private sector, and the use of minimum revenue guarantees to mitigate risks, focusing on the case of Spain. It also discusses past success stories and current trends as a consequence of the financial crisis. Spain has a dense road network of more than 165,000 kilometers in an area of approximately 500,000 square kilometers. Highways and high capacity corridors represent more than 15,000 kilometers and many of them are managed through a PPP scheme. A review of basic PPP concepts under the Spanish PPP law is presented, including recent policy changes, pointing out the main responsibilities of the public and private partners in the process. Furthermore, the paper describes the PPP bidding process emphasizing the different steps of the process and how the stakeholders interact. The paper also describes good governance recommendations to ensure that the private sector's involvement yields the maximum benefit for the public, as well as future challenges for infrastructure concessions in Spain.

Keywords: infrastructure, Spain, roads, PPP, concessions

#### 1 Introduction

Despite the financial crisis, the use of public-private partnerships (PPP) in the roads sector appears to be an adequate approach to release public funds for investments unable to attract private financing, tackle infrastructure deficit, and promote innovation and sustainability in the sector. One of the most used methods of implementing PPPs is through the road concession system, which basically consists of transferring construction, maintenance and operation of infrastructure to a private partner, in exchange for the right to charge a user fee for a period (i.e. the concession life).

Spain has a long experience implementing PPP projects in the road sector, which has been facilitated by an adequate PPP enabling environment. The first road concession was "the Gua-

darrama tunnel" in the north of Madrid region, opened to traffic in 1953. Since then, more than 2,800 km of road concession have been implemented across the different regions of Spain [1]. This paper describes the framework needed to create a PPP enabling environment, including a suitable procurement law promoting a competitive selection of concessionaires, the transfer of risks between the public and private sectors, the use of a structured bidding process and good governance practices, focusing on the case of Spain. The paper also analyzes the experience of Spanish companies delivering PPP, the challenges that all the stakeholders are facing in view of the financial crisis and possible solutions for PPP financing.

### 2 Legislative framework

In many countries the legislative system may not support the concept of PPP, such as the transfer of the responsibility to have a private entity provide a public service, and the suitability of procurement legislation for PPPs. A study by the European Bank for Reconstruction and Development (EBRD) illustrates that several countries, where concession legislation has low to medium compliance with international standards, have limited or no successful PPP programs [2]. However, countries such as Spain have specific PPP legislation and have established a successful PPP program. The Toolkit for PPP in Roads and Highways [3] states that a legislative framework includes two different types of laws:

- a) The laws that make PPP possible, also called the "enabling" law or framework, such as a country concession law or PPP law.
- b) The laws that may have an impact on a PPP project, which are numerous because PPPs are large and complex multi-faceted projects.

The enabling law could either be general or sector specific, including concession and PPP laws, and sector specific laws, as the case of Spain that will be described later in this paper.

#### 3 Concession law

In order to establish an enabling environment for PPPs for a country, an appropriate concession law is fundamental. This law should apply to construction, expansion, rehabilitation and maintenance of assets providing a public service, aiming at improving the efficiency and modernization of public services. A concession law can be kept relatively simple and general, while specific regulation should be documented in operational guidelines (or decrees). A separation between law and regulation provides more flexibility for amendments during the implementation of a PPP program [4].

Concession laws typically identify the government agency responsible for overseeing the bidding, construction, and operation of the authorized projects and set parameters for each. Laws vary as to the rules of tender, but frequently involve a several-stage process.

# 4 The Spanish road sector

Spain has a dense road network of more than 165,000 kilometers (not including urban roads) in an area of approximately 500,000 square kilometers. Highways and high capacity corridors represent more than 15,000 kilometers and many of them are managed through a PPP scheme. Figure 1 shows the toll highway network in Spain.

More than 83 percent of all cargo and 87 percent of passengers are transported by road [5]. In Spain, toll highways are managed by the "Dirección General de Carreteras," under the Ministerio de Fomento (Ministry of Public Works responsible for transportation in Spain).



Toll highway network in Spain (Source: Asociación de Sociedades Españolas Concesionarias de Autopistas, Túneles Puentes y Vías de Peaje)

# The Spanish PPP legal framework

The concession of toll highways in Spain has been regulated since 1972 by Law 8/1972: Toll Highways. 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 Highways. In October 2007, a new Law of Public Sector Contracts was approved, Law 30/2007, superseding the previous Law 13/2003. The new law further develops the principle of PPP, making explicit provisions aimed at projects where a partnership between the public and the private sector is required.

An update of the Law of Public Sector Contracts was approved in March 2011, integrating all the previous provisions and also new requirements regarding private funding for public contracts [6].

The "Dirección General de Carreteras" is responsible for the technical regulation of road concessions granted by the Spanish national government. As for the financial regulation, a department in the Ministerio de Fomento called "Delegación de Gobierno en las Sociedades Concesionarias de Autopistas de Peaje", is responsible for the coordination between the state and the concessionaires. This department is responsible for supervising the fulfillment 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 annual statements and reports [7].

457

# 6 The PPP bidding process

The Spanish PPP law provides for three distinct phases in the bidding process [8]:

- a) Public disclosure of feasibility studies. Depending on the project, economic-financial studies and preliminary design can also be disclosed. The standard bidding document that will be used during the process is disclosed at this phase.
- b) Once the comments and recommendations made during the public disclosure phase have been taken into consideration, the detailed design process starts, under the supervision of the "Dirección General de Carreteras".
- c) Final phase is the actual bidding that must be publicly announced according to the law. Tenders are generally evaluated taking into account: (i) Technical quality; (ii) Feasibility of the proposal and technical and financial solvency of the concessionaire, and (iii) Efficiency of the concession scheme.

# 7 Risk sharing

Good practices for the public stakeholders to maximize the potential and to ensure the maximum general interest for PPP projects involve: affordability; value for money; fiscal rules and expenditure limits; risk sharing; the need for competition and transparency; regulatory issues; adequate institutional capacity; the public sector comparator; and the importance of political support [9]. The approach of the Spanish legal framework regarding risk sharing in infrastructure PPP projects is based on the following ideas [10]:

- a) Private stakeholders should be allocated most of the commercial risks.
- b) Public stakeholders should be allocated the risks that cannot be adequately managed by any other stakeholder.
- c) Public stakeholders may assume or mitigate some risks, but this assumption should generally avoid aggravating Spain's public deficit. Public subsidies are contemplated as a means of rebalancing the financial aspects of the contract only in extremely justified circumstances, as their use is strongly constrained by the law.
- d) The risk mitigation must be understood in a symmetrical way, either in favor of the concessionaire or in favor of the public authority.

Figure 2 provides an overview of the main types of risks involved in a PPP project.

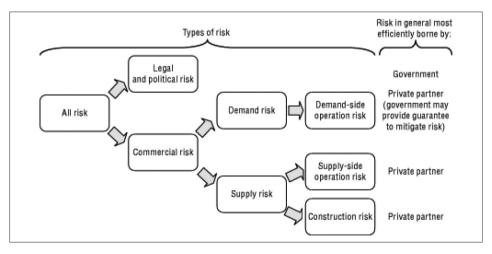


Figure 2 Categorizing PPP risks (Source: OECD 2008)

### 8 Current trends in Spain

PPPs and publicly managed assets have been vulnerable to the global financial crisis, affecting severely Spain and particularly its construction sector. The budget constraints and the credit restrictions are two factors disturbing the future development of the concessions market in Spain. In 2014, there were only 7 million euros tender processes for road concessions. The Spanish State General Administration only tendered 430 million euros in concessions in 2012 in opposition to the more than 8,000 million euros that were tendered in 2007 under "the first generation Highway Plan". According to the figures of the association of major Spanish contractors and concessionaire groups, concession contracting under regional and local governments also dropped dramatically [11]. Table 1 gives the amounts in euros of concessions tendered in Spain in the period 2010 – 2014.

Sector	2010	2011	2012	2013	2014
Ports	139.3	106.7	20	_	-
Roads	6,218.4	3,289.0	430	_	7.4
Railways	_	1,151.4	_	_	_
Airports	_	_	_	_	_
Hydraulic engineering	_	_	_	147.5	_
Urban mobility	1,410.9	_	_	_	_
Parking facilities	253.1	46.3	128.4	29.7	_
Health care	1,379.0	_	_	_	1,947.1
Local services	15.3	_	9.3	_	
Others	1,098.7	197.7	32.9	_	289.9
TOTAL	10,514.7	4,791.1	620.7	321.6	2,244.4

Table 1 Concession tendering in Spain, in million euros (Source: SEOPAN)

Despite the situation in road concession tendering in Spain, 5 out of the top 10 Public Works Financing (PWF) ranking for transportation developers (based on capital invested in 2015) are Spanish companies [12]. These companies are present as concessionaires in many countries apart from Spain including: Argentina, Australia, Brazil, Canada, Chile, Colombia, Ecuador, Ireland, Israel, Jamaica, Mexico, Portugal, Puerto Rico, UK, and USA.

The success of Spanish companies abroad seems to indicate that the experience earned on PPP projects in Spain in the past is useful now in different regions of the world. Possible options for enhancing Spanish PPP financing include [13]:

- a) EU financial instruments to access new sources of capital and to complement bank lending:
- b) New EU grant regulation to increase the use of EU grant in PPPs; and
- Better project selection and monitoring to deliver more resilient projects and ensure their affordability/sustainability.

### 9 Good governance in PPP contracts

PPPs provide many benefits, but there are also many risks that have to be addressed and allocated, some of them particularly related to governance issues. Queiroz and Kerali discussed the governance risks in PPP projects and stated that, because PPP projects in transport infrastructure tend to have monopolistic features, good governance in managing them is essential to ensure that the private sector's involvement yields the maximum benefit for the public [14].

Good governance requires, inter alia: (i) competitively selecting the strategic private investor; (ii) properly disclosing relevant information to the public; and (iii) having a regulatory entity oversee the contractual agreements over the life of the concession [15].

The Spanish PPP law fully complies with the recommendations stated by Queiroz and Izaguirre [15], including the competitive selection of the bidders and public disclosure of relevant information during the bidding process, as well as the existence of an agency, the "Dirección General de Carreteras", overseeing the whole process.

The interests of the stakeholders are not always fully taken into account when developing PPP projects. In order to preserve such interests it is essential to put into place the enabling institutions, procedures, and processes surrounding PPPs. Examples of good governance principles include [16]:

- a) Participation: the degree of involvement of all stakeholders;
- b) Decency: the degree to which the formation and stewardship of the rules is undertaken without harming or causing grievance to people;
- c) Transparency: the degree of clarity and openness with which decisions are made:
- d) Accountability: the extent to which political actors are responsible to society for what they say and do;
- e) Fairness: the degree to which rules apply equally to everyone in society; and
- f) Efficiency: the extent to which limited human and financial resources are applied without waste, delay or corruption or without prejudicing future generations.

Governance can be enhanced by public disclosure of the contractual obligations of the concessionaries. Also, by carrying out periodic audit of PPP projects, using adequate expertise, and making the results available to the public, can contribute to assure public support to PPP and concession projects. Using survey tools such as "PPP Perception Index" seem to be an adequate instrument to measure perception of the PPP approach, including governance, from internal and external stakeholders [17]. In Spain, "Dirección General de Carreteras" is the public stakeholder ensuring that these principles are taken into consideration, including: maintaining transparent processes, avoiding corruption, ensuring fairness, and defining and monitoring the performance of the private stakeholders.

#### 10 Conclusions

This paper reviewed investments in road infrastructure through PPP in Spain including past achievements and current trends. The case of Spain can be considered as one of the successful PPP stories, which is due, at least in part, to a well-established enabling environment for PPP. A large number of projects have been tendered since the first road concession was implemented in Spain in 1953, the regulatory framework is stable, the bidding process is adequate and has been implemented with a tight time schedule, reducing tendering costs and increasing competition. The financial crisis affected severely the road PPP market, reducing operations substantially. Some possible options for future Spanish PPP financing were presented. Good governance is also essential in managing PPP projects. Spanish PPP legal framework contributes to ensure the maximum benefit for all the stakeholders. One of the main tasks of "Dirección General de Carreteras" is ensuring that good governance principles are incorporated in the whole PPP process. As a conclusion, despite the reduction in concession tendering in Spain in recent years, the success of Spanish companies abroad seems to indicate that the PPP experience gained in Spain can be helpful to implement PPP projects elsewhere.

#### References

- [1] Ministerio de Fomento: Anuario Estadístico 2014. http://www.fomento.gob.es/18/03/16.
- [2] Legal Transition Programme: Legal Reform Projects, 1996 to September 2015. European Bank for Reconstruction and Development, London, UK, 2015.
- [3] Toolkit for PPP in Roads and Highways. World Bank and Public-Private Infrastructure Advisory Facility (PPIAF). Washington, D.C., USA, 2009.
- [4] Cesar, Q., Martinez, A.L.: Legal Frameworks for Successful Public Private Partnerships in The Routledge Companion to Public-Private Partnership. Edited by Piet de Vries, Etienne B. Yehoue. Routledge Companions in Business, Management and Accounting. Oxfordshire, UK, 2013.
- [5] Ministerio de Fomento: Los transportes y las infraestructuras, informe anual 2014. Gobierno de España. Madrid, Spain, pag. 27, 2014.
- [6] Concesiones Regulación legal carreteras, Ministerio de Fomento, Gobierno de España, https://sede. fomento.gob.es/SEDE\_ELECTRONICA/LANG\_CASTELLANO/OFICINAS\_SECTORIALES/CARRETERAS/ CONCESIONES/NORMATIVA/, 18/03/16.
- [7] Public private partnerships. Conference of European Directors of Roads 2009. Paris, France. http://www.cedr.fr 18/03/16.
- [8] Lopez Corral, A., Sánchez Soliño A., Carpintero López, S.: Las concesiones de infraestructuras y equipamientos públicos en España, Boletín económico del ICE nº2890. Madrid, Spain, 2006.
- [9] OECD, Public-Private Partnerships: In Pursuit of Risk Sharing and Value for Money, ISBN Number 9789264042797, Paris, France, 2008.
- [10] Vassallo, J.M., Gallego, J.: Risk-sharing in the New Public Works Concession Law in Spain, Madrid, Spain, 2005.
- [11] SEOPAN, Evolución de la Licitación de Concesiones de Obras por tipos de Obra y CCAA 2014. www. seopan.es, 18/03/16.
- [12] PWF. Public Works Financing International Major Projects Report. New Jersey, USA. 2015.
- [13] Audibert, J., Totaro, F.: PPPs in Spain within the Operational Programme 2014-20, EPEC, European Investment Bank, Luxemburg, 2013.
- [14] Cesar, Q., Kerali, H.: A Review of Institutional Arrangements for Road Asset Management: Lessons for the Developing World, World Bank Transport Papers Series TP-32, Washington DC, 2010.
- [15] Cesar, Q., Izaguirre, A.K.: Worldwide Trends in Private Participation in Roads: Growing Activity, Growing Government Support, Gridlines series, no. 37, Public-Private Infrastructure Advisory Facility-PPIAF, Washington, DC., USA, 2008.
- [16] United Nations, Guidebook on Promoting Good Governance in Public-Private Partnerships, http://www.unece.org/fileadmin/DAM/ceci/publications/ppp.pdf 18/03/16.
- [17] Cesar, Q., Astesiano, G., Serebrisky, T.: An Overview of the Brazilian PPP Experience from a Stakeholders' Viewpoint, Inter-American Development Bank. Infrastructure and Environment Sector. Technical Note No. IDB-TN-641. Washington, D.C., USA, 2014.