Private Sector Involvement in Road Financing

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Sound policies lead to safe, reliable, and cost-effective transport, freeing people to lift themselves out of poverty and helping countries to compete internationally.

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Foreword

There is renewed interest in public-private partnerships (PPP) for infrastructure and service delivery in developing countries. These partnerships enable the public sector to harness the expertise and efficiencies that the private sector can bring to the delivery and management of infrastructure and related services. Over 100 developing countries have implemented a PPP in infrastructure since 2005 of which 50 in transport (World Bank and PPIAF, PPI Project Database).

> The *2012 Public-Private Partnership Reference Guide* prepared by the Public Private Infrastructure Advisory Facility (PPIAF) defines a PPP as "long-term contracts between a private party and a government agency, for providing a public asset or service, in which the private party bears significant risk and management responsibility".

The average total annual private investment in transport projects in Africa during the 2007-2011 period was $750 million, with an average of three projects per year reaching financial closure. In 2012, 83 new transport projects reached financial closure in 12 developing countries and only one of these was in Africa, namely a 25-year airport management contract in Dakar, Senegal. To date, few road projects have been developed through a PPP in Africa.

Yet, funding requirements for needed road investment and maintenance cannot be met entirely through public financing.

In response to a request from SSATP member countries for informed policy advice on private sector involvement in road financing, provision and management, with a focus on PPPs, SSATP launched a study in 2013 to review good practices, learn lessons from case studies, and provide guidance on private sector involvement in road financing, provision and management relevant to African countries.

The study was informed by three case studies based on field visits in Senegal, Ghana and Nigeria, in consultations with stakeholders. Key issues covered include risks associated with private financing and allocation between the private and public sectors, enabling legal frameworks, contractual issues, institutional and governance issues, capacity development, funding, lenders requirements and the need for political will and support. Four main lessons came out of this review.

PPP policy and institutional frameworks. Political commitment and leadership is required at the highest level of government to promote a PPP in roads development. PPP projects require a range of specialist expertise and experience that is typically not available within the public sector. A central PPP unit, with strong backing by highest level political authority, will provide the concentration of expertise needed to harness resources from government and external parties, and enable efficient PPP procurement. The early creation of the *Agence nationale chargée de la promotion des investissements et des grands travaux* (APIX) as a 'PPP Unit' in Senegal was a critical factor in the successful procurement of the Dakar-Diamniadio Toll Highway. On the other hand, the lack of a PPP unit in the Lagos State Government to provide key expertise delayed the procurement process and put the public sector partner at a negotiating disadvantage. This may have reduced the value for money of the procurement and contributed to the subsequent buy-back of the concession.

Legislative framework. A legal framework is required to enable effective and efficient PPP procurement program. Senegal was the only case study where a legal and institutional framework was established in advance of the first major procurement, which greatly facilitated the toll highway procurement to international standards. This is a practical example of how PPP procurement can be achieved within the economic, political and geographical environment of many African nations. The Lekki-Epe Expressway project was developed largely in advance of the associated state legal and institutional framework for PPP, but there was sufficient legal backing under the 2005 Act (established at federal level) for adequate procurement to take place. The Accra-Kumasi road – unsolicited bid - experienced substantial delays resulting, in part, from the late development of a PPP policy and legislative framework in Ghana. Unsolicited proposals present particular difficulties for road administrations, especially where, as in Ghana, there is no statutory procedure for evaluating or approving them.

Private finance and risk factors. Political and currency risks need to be carefully considered in a PPP in Africa where they are perceived to be particularly high. In Nigeria, the key factors of success for the expressway were strong sponsors, equity partners and sovereign guarantees provided by the federal government. As a result, the expressway attracted substantial private finance with 68% of the total project financing obtained from private sources. This is very high in view of the perception of Nigeria country risk amongst international investors and demonstrates that substantial private finance can be attracted for PPP toll roads in Africa.

Tolling. Political resolve is required to support the introduction of tolling and the periodic increases in tolls built into the concession agreement. Without this, the imposition of tolls is likely to provoke opposition from residents and road users. The tolls in Senegal prompted criticism and some protests, but less than experienced elsewhere, possibly due to the advance promotion of the benefits of the highway to prospective users, previous tolling along the corridor and the existence of an untolled alternative. The concession in Lekki-Epe was ultimately purchased back by the public sector to avoid popular opposition to the introduction of tolling on the improved road. In Ghana, there is no realistic untolled alternative route to the Accra-Kumasi Road between the towns it serves. In South Africa and other jurisdictions, tolling is only permitted where an untolled alternative exists. Consideration should be given to road user choice of a route based on affordability.

The analysis of policy issues and the lessons learned provide a useful guidance to explore public-private infrastructure and service delivery in the road sector in Africa, and to help African countries interested in considering PPP for road projects make informed decisions.

As Senior Director of the Transport & Information and Communication Technologies Global Practice of the World Bank, I am committed to increase the share of new transport projects with private sector participation. The World Bank Group through the World Bank (IBRD/IDA), IFC and MIGA, and as host of the Public-Private Infrastructure Advisory Facility (PPIAF), offers a wealth of knowledge and expertise on the subject for countries to take advantage of. The Diamniadio toll road presented here is a good example of successful combination of various World Bank Group instruments to enable innovative PPP solutions. Africa needs to attract much more private investment in infrastructure to support its fast growing economies, and I hope that examples like this will lead to an acceleration in private financing of transport projects in the region.

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Acronyms

AADT	Average Annual Daily Traffic
AFD	*Agence française de développement*
AFTTR	Africa Transport Unit of the World Bank
AGEROUTE	*Agence des Travaux et de Gestion des Routes (Ministère des Infrastructures et des Transports*, Sénégal)
AIBD	*Aéroport international Blaise Diagne*, Dakar
AIIM	African Infrastructure Investment Managers
ARM	Asset & Resource Management Company Ltd, Nigeria
ATRCL	Arterial Trunk Roads Company Limited, Ghana
BAFO	Best and Final Offer
BOT	Build-Operate-Transfer
CA	Concession Agreement
CBAO	Compagnie Bancaire de l'Afrique Occidentale
CFA	*Communauté Financière Africaine*
CPI	*Conseil Présidentiel de l'Investissement*, Senegal
DBFO	Design, Build, Finance and Operate
DBSA	Development Bank of Southern Africa
DDTH	Dakar-Diamniadio toll highway
DfID	Department for International Development, U.K.
DSCR	Debt Service Coverage Ratio
ECA	Export credit agency
EoI	Expression of interest
ESIA	Environmental and Social Impact Assessment
FA	Financial Advisor
FC	Financial Close
FERMA	Federal Roads Maintenance Agency, Nigeria
FTZ	Free Trade Zone
GFC	Global Financial Crisis
GHA	Ghana Highways Authority
GOG	Government of Ghana
GON	Government of Nigeria
GOS	Government of Senegal

I/C	Interchange
ICRC	Infrastructure Concession Regulatory Commission, Nigeria
IDA	International Development Association
IDC	Industrial Development Corporation, South Africa
IFC	International Finance Corporation
IFI	International financial institution
ITT	Invitation to Tender
LCC	Lekki Concession Company Limited, Nigeria
LSG	Lagos State Government
MDA	Ministry, Department and Agency
MIGA	Multilateral Investment Guarantee Agency
MOFEP	Ministry of Finance and Economic Planning, Ghana
MOT	Maintain, Operate & Transfer
MoU	Memorandum of Understanding
MRH	Ministry of Roads and Highways, Ghana
NCP	National Council on Privatization, Nigeria
ORT	Open Road Tolling
PAP	Project Affected Person
PAU	PPP Advisory Unit, Ghana
PFA	Project Finance & Analysis Unit, Ghana
PID	Public Investment Division, Ghana
PPIAF	Public-Private Infrastructure Advisory Facility
PPP	Public-Private Partnership
PSC	Public sector comparator
RFP	Request for Proposals
RFQ	Request for Qualification
RMI	Road Management Initiative
ROW	Right-of-Way
SENAC	*Société Eiffage de la Nouvelle Autoroute Concédée*, Sénégal
SETEC	*Société d'Études Techniques et Économiques*, Sénégal
SME	Small and Medium Enterprise
SPV	Special Purpose Vehicle
SSA	Sub-Saharan Africa
SSATP	Africa Transport Policy Program
TOR	Terms of Reference
USD	United States Dollar
VFM	Value for money
VPD	Vehicles per day
WADB	West African Development Bank

1. Introduction

Achieving private sector involvement in financing, provision and management of roads requires specialized legal and institutional frameworks, public sector expertise, advisor support and sustained political commitment. In many African States, there is little experience of private sector involvement in the road sector but there is encouragement to promote such involvement from development partners.

Increased private sector involvement in public sector procurement has been for many years an important aspect of the infrastructure investment policy of development partners, such as the World Bank and the African Development Bank. Public Private Partnerships (PPPs) are one of a number of initiatives being pursued within Africa, in relation to road sector reforms. In particular, the road sector reforms under the Road Management Initiative (RMI), launched in 1988 by the SSATP and the World Bank, in collaboration with other development partners have sought to improve road service delivery by reforming public sector institutions and legislation through clearly defined responsibility, ownership, stable financing and commercialized road management.

The RMI was seeking financing reforms aiming primarily at dedicating revenues from road users on road maintenance. PPPs are another means of ensuring adequate funding of highway improvements, but with greater exploitation of private sector expertise and resources. The PPPs considered here are of a type usually applied to finance large-scale projects with high capital costs, such as new highways or major upgrades where the complexity of procurement and the cost of inefficient public sector management are greatest. Many other types exist for smaller contracts including for road maintenance. The objectives here are to

- Consolidate good practices on private sector involvement focusing on road financing, on provision and management applicable to Sub-Saharan African countries, leading to the development of policy guidance, and
- Enable in-depth understanding of the key issues and principles of private sector involvement in road financing, provision and management, including lenders' perspectives and requirements in support of project finance for road PPPs.

There are substantial knowledge resources on private sector involvement in public sector procurement already available to public sector promoters. These include much information on PPP policy and procurement processes, and advisory support from specialist teams within, or funded by development partners. Building on three case studies from Africa, this paper adds to the substantial existing guidance available, and seeks to assist public sector participants in the efficient engagement with the private sector in procuring road projects. Furthermore, a survey of roads PPP policy and practice amongst SSATP member countries was undertaken as part of the study. A list of sources of guidance and information is given in the Annex, together with links to their websites.

Section 2 of this paper provides the general requirements for private sector involvement in road financing, provision and management, including contractual and procurement issues. Section 3 introduces the three case study projects. Sections 4, 5 and 6 provide the findings of the case studies undertaken in Dakar, Accra and Lagos respectively. Section 7 summarizes the conclusions of key issues and policy guidance from the case study analysis.

2. Road financing, provision & management

Contract types and their requirements

This section provides a summary of the contract types commonly adopted within the road sector, with background information for the subsequent case studies and survey projects. There is much literature on the range and classification of the various types of private sector contract used in infrastructure procurement. The World Bank paper *Understanding Options for Public-Private Partnerships in Infrastructure*[1] is not specific to transport but is a very detailed source of information. Other sources include the World Bank/PPIAF *Toolkit for Public-Private Partnerships in Roads and Highways*[2] and the World Bank *PPP Reference Guide*[3]. Each of these documents adopts slightly different classifications of private sector contracts.

Road sector contracts vary primarily by asset type, private sector responsibility and method of payment to the private sector. The main alternatives for each of these characteristics are shown in Table 1. Private sector roads contracts may be combinations of alternatives within each column, as well as between columns. Further details on the alternatives are provided in the following sections.

Table 1 Private sector contract classification

Road type	*Private sector responsibility*	*Private sector payment method*
▪ New build ('Greenfield')	▪ Design	▪ User charges
▪ Existing ('Brownfield')	▪ Construct	▪ Government payments
	▪ Rehabilitate	
	▪ Finance	
	▪ Maintain	
	▪ Operate	

Source: Delman (2010), with LeighFisher adaptations

[1] Delmon, J. (2010), Policy Research Working Paper 5173, available at the at elibrary of the World Bank website.
[2] March 2009, Module 1, available at www.ppiaf.org
[3] Available at wbi.worldbank.org

Road project type

There are two types of road project, *new build* ('Greenfield') and *existing* ('Brownfield'). New build projects are the main subject of highway PPP projects in many countries. This may be because the larger capital cost involved requires the public sector to seek private finance and is most attractive to construction companies. PPP transaction costs, such as hiring expert advisors, bidder staff resourcing and the potential lack of return if unsuccessful, are typically high and can be better absorbed in larger projects. This may preclude smaller upgrading, refurbishment or maintenance projects.

The larger scale of new build projects is also likely to attract more international private sector interest for whom the lack of local knowledge may otherwise be a deterrent. The higher the return, the more likely the private sector is to invest in acquiring local knowledge.

In practice, PPP projects may be a combination of new build, upgrading and maintenance. For example, an inter-urban highway corridor project may require new bypasses around urban areas, upgrading of single carriageway sections to dual carriageway and refurbishment of existing dual carriageways. In almost all PPP roads project, maintenance will be the responsibility of the concessionaire through the concession period.

Private sector responsibilities

Road type and private sector responsibilities are inter-related. The six private sector responsibilities listed in Table 1 are generally self-explanatory. Design may not be included in traditional procurement, but contractors may be expected to review a highway authority's designs and propose amendments where appropriate.

PPPs involving substantial capital expenditure, such as new build and major upgrades, typically require the private sector to provide part or all of the capital funding. Indeed, the ability of PPP procurement to access private finance is seen as a major advantage. It can accelerate highway investment when there is insufficient public finance. Different financing approaches have been adopted in the case studies examined here and private finance is often part of a complex funding package. This may include equity from bidders, equity or loans from institutional investors, commercial banks, sovereign wealth funds and international financial institutions (IFI), and finally conventional government funding.

Maintenance is usually part of the private sector responsibilities for new build roads. The concessionaire is then encouraged to design and construct the road to optimize long-run maintenance costs. Where the concession permits tolling, private sector operating responsibilities usually include the operation of toll plazas.

Private sector payment method

Private sector debt servicing, maintenance, operating costs and return on investment may be recovered from a number of sources, depending on the nature of the concession agreement. These include:

User charges. Tolling is widely adopted where there are substantial capital costs. Toll rates are regulated by terms of the concession agreement. These normally specify either exact or maximum toll rates with the intention that the toll rates are not excessive and provide good utilization of the highway with associated economic benefits. As an example, the Istanbul Straits Road Tunnel will be tolled at the Turkish Lira equivalent of $4.00, to be adjusted periodically for inflation and exchange rate fluctuations. Discounts may be considered by the Grantor, but there is no possibility to seek a higher toll.

Examples of toll rates are given in Table 2, with the higher toll rate in Canada equal to 15 times the lower toll rate in India.

Direct user charging is sometimes referred to as 'real' tolling, in contrast to 'shadow' tolling described below.

Shadow tolls. Direct tolls can be avoided by the public sector paying shadow tolls, i.e. a payment to the concessionaire based upon the traffic volumes using the road. This is not a widely practiced method as it increases public sector funding, although it does incentivize the concessionaire to provide a high level of service. The concessionaire on the M1-A1 Link Road DBFO[4] project in the United Kingdom for instance receives payments based upon vehicle-km travelled on the road, with further payments for safety and lane availability performance.

[4] Design, Build, Finance and Operate.

Table 2 Examples of toll rates

Road	*Country*	*USD/km. (2010 auto rates)*
M5	Australia	0.158
ETR407	Canada	0.210
M6 Toll	U.K.	0.173
A6	Croatia	0.073
N4	South Africa/Mozambique	0.037
Various	India	0.014
Nova Dutra	Brazil	0.048
Mexico City-Puebla	Mexico	0.086
Autopista Los Libertadores	Chile	0.044
Bogota-Cartagena	Colombia	0.047
Autopista del Sol	Costa Rica	0.046
Hua Nan Expressway	China	0.044
Indiana Toll Road	U.S.A.	0.032

Source: IFC correspondence

Performance-based public sector payments. The public sector may make some or all of its payments based on the performance of the concessionaire. The payments are defined in the concession agreement and may be based upon availability (e.g. the average number of lane-kilometers provided each hour), accident rates or level-of-service (e.g. average speed). As an example, the concessionaire of the DBFO William R. Bennett Bridge in Canada is paid based upon user satisfaction, lane availability, safety and traffic volumes.

Guarantees. The public sector may guarantee some level of revenue to the concessionaire. For example, where tolls are a major source of revenue to the concessionaire, the public sector may share the traffic risk by guaranteeing a minimum revenue. If toll revenue is less than the guaranteed amount, the public sector compensates the concessionaire for the shortfall. For example, the concessionaire on the Istanbul Straits Road Tunnel Crossing in Turkey received a minimum traffic guarantee. If actual traffic is less than the guaranteed level the concessionaire will received payment from the Grantor to make up the difference.

Summary of contract types

There are many alternative combinations of road types, private sector responsibilities and private sector payment mechanisms possible within PPP contracts. Consequently, it is rare for any two PPP contracts to be identical, even where they are

part of an established PPP program. Each project has unique characteristics that need to be reflected in its concession agreements. Figure 1, from the PPIAF *Toolkit for Public-Private Partnerships in Roads and Highways*, provides a general classification of the range of private sector contracts. Typical public and private sector responsibilities are given for private sector contracts.

Figure 1 Responsibility matrix for Conventional and PPP Procurement Options

			Public-Private Partnership				
Category	Works & Service Contracts (conventional procurement)		Management & Maintenance Contract	Operation & Maintenance Concessions		Build Operate Transfer Concessions	Privatization
Type	Design, Bid, Build	Design & Build	Management Contracts	Performance-Based Contracts (PBC)	Lease, Franchise, Affermage *Brownfield*	BOT/DBFO/BOO Greenfield	
Design	Private by fee contract					Private by concession contract	Private
Build							
Operation & Maintenance	Public	Public	Private by fee contract	Private by PBC contract	Private by concession contract		
Finance	Public	Public	Public	Public			
Own	Public	Public	Public	Public	Public	Public after contract (BOT/DBFO) or Private (BOO)	
Private sector revenue options					Tolls (concession model		
					Availability payments (PFI model)		
					Government guarantees and support Other support (e.g. insurance)		

Source: PPIAF Toolkit for Public-Private Partnerships in Roads and Highways, 2009.

The PPP contractual structure

The key parties in the PPP contractual and financial structure are:

Grantor: The public sector promoter of the concession project (termed the 'Government' in Figure 2). This is typically a government entity, which may

be the regional or national highway authority, or a centralized PPP unit mandated to administer the PPP procurement process and manage the concession when operational.

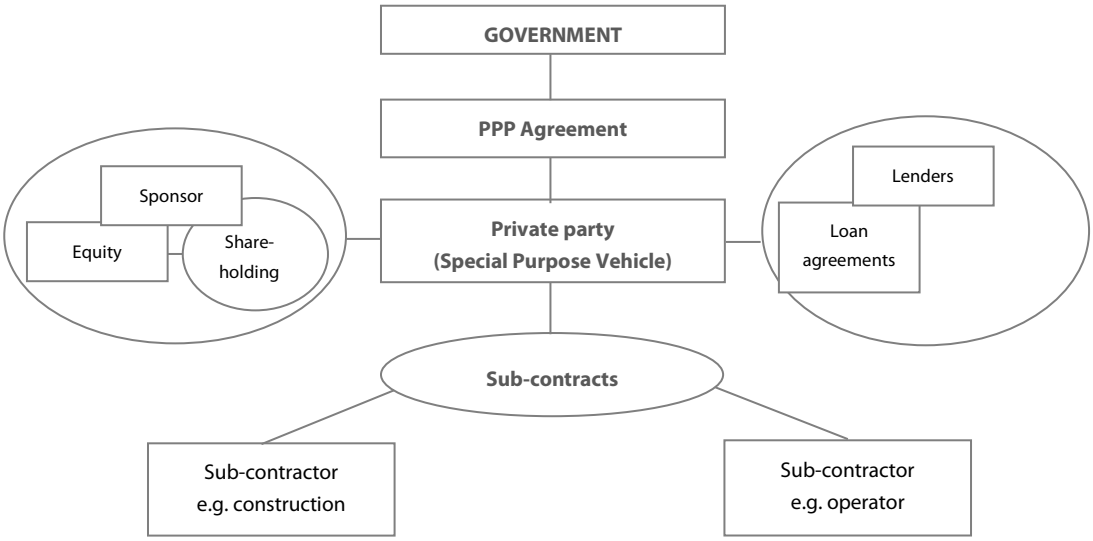
Sponsor: A private sector consortium established to bid for the PPP concession. For new build toll road concessions, the Sponsor is typically a consortium led by one or more large construction companies, often including local partners. The Sponsor may often include a toll road operating company and possibly investors (although the term 'sponsor' is also sometimes used for the public sector promoter of a project, it refers here to private sector consortia).

Preferred Bidder: The bidder who has been awarded the concession by the Grantor, subject to the satisfactory completion of negotiations between the Preferred Bidder and the Grantor.

Concessionaire: Prior to concluding negotiations, the Sponsor, which has been awarded the concession by the Grantor (Preferred Bidder) will be incorporated into a Special Purpose Vehicle (SPV) which will be the Concessionaire (termed the 'private party in Figure 2).

Lenders: Financing will typically be provided by a mix of debt (loans) and equity (funds provided by members of the consortium). Lenders are the providers of the debt element of the financing and may include commercial banks, international financial institutions, financial institutions (e.g. pension and insurance funds) and Export Credit Agencies.

Figure 2 Legal and financial structure



Source: South African National Treasury in 'Assessing Public – Private Partnerships in Africa', P. Farlam, South African Institute of International Affairs, February 2005.

PPP procurement framework

Transport and procurement policies

PPP procurement requires underlying procurement and transport policy frameworks. Procurement policy determines what means of procurement can be adopted. It may specify under what conditions procurement is permitted and may provide guidance on identifying the most appropriate method for a particular project.

The transport policy framework defines public sector objectives, the strategies to achieve them and may identify specific initiatives, as part of the strategies. Transport policy may also indicate the sources of funding and preferred method of procurement for different types of investments.

Procurement policies assist in specifying concession agreement conditions and criteria for evaluating bids so that the economic benefits of a project are maximized. Policies are particularly valuable in assessing unsolicited bids, where allowed, as these are not generated from policies. Without policy guidance, it is difficult to evaluate the merit of, and respond coherently to, unsolicited bids.

Institutional framework

PPP projects are relatively complex, requiring a range of expertise and experience that is not normally available within the public sector. Private sector participants augment their own staff capabilities by employing advisors in key transaction disciplines, such as legal, financial, taxation, environmental, technical and traffic. The minister, department or agency (MDA) often have strong expertise in technical matters, but may lack skills in other areas. It is generally accepted that a central PPP Unit is required, as a minimum, to deliver the project for the public sector. Countries differ in where the PPP Unit reports to and whether PPP 'cells' are also established within MDAs to provide a link with the central PPP Unit.

Key functions of a PPP Unit are to[5]:

- Establish a PPP policy
- Promote a PPP within government
- Provide channels for investors
- Help MDA to implement a PPP
- Analyze individual projects
- Prepare projects for procurement
- Coordinate MDA actions
- Engage government advisors
- Manage the procurement process
- Manage and monitor contracts

PPP cells have sometimes been created within MDA and focused on a particular sector, such as highways, but they may have a geographical focus instead. They operate as intermediaries between MDAs promoting PPP projects and the central PPP Unit. Their tasks can include:

- Promotion of PPP procurement within the MDA
- Internal vetting of possible PPP projects from their MDA
- Preparation of possible PPP projects and their promotion at the central PPP Unit
- Collation of information from the promoting MDA for the PPP Unit in preparation for procurement

[5] Further assistance on the role of PPP Units is available in 'Public-Private Partnership Units: Lessons for their Design and Use in Infrastructure', World Bank/PPIAF, 2007.

- Continuing support to the PPP Unit during the procurement process

Many African States are relatively small and it may not be practical to have PPP cells within the MDA, as the scale of PPP activity is too small to justify more than a central PPP Unit and the capacity within the MDA is lacking. Where this is the case, it may be sufficient to appoint a manager to support and advise the PPP Unit on each project.

Legal and regulatory framework

An established legislative framework for PPP procurement is a major advantage. Without it, each PPP project will only be based upon the concession agreement and it will be difficult to have a truly competitive bidding process. In some instances, the legislative framework has been developed in parallel with a specific PPP procurement. However, this is inefficient creating uncertainty and extending the procurement process.

The ESCAP PPP guidebook[6] lists the typical content of a legislative framework:

- Division of responsibilities between levels of government and powers of government bodies
- Sectors covered, details of project identification, approval, procurement and implementation arrangements
- Types of permitted PPP models and general conditions for these models
- Guidelines on risk sharing arrangements
- Provision of financial and other incentives by the government
- Provisions concerning contract management including dispute resolution
- The extent to which lenders can undertake security over project assets and its liabilities
- The administrative process involved in PPP project development and implementation
- Rights of the parties to a PPP contract agreement

[6] A Guidebook On Public-Private Partnership In Infrastructure, United Nations ESCAP, 2011. Available at www.unescap.org

Private sector legal requirements of a legal framework noted in the UN ESCAP guidance are that it:

- Provides the legal coverage to enter into an enforceable contract
- Provides the private sector the necessary legal coverage to finance, build, operate and collect revenues or service payments
- Clarifies regulatory control, obligations of parties, services, land acquisition, risk and profit sharing, pricing and handover of facilities
- Defines contract management procedures (monitoring, dispute settlement mechanisms).

An extensive list of links to national PPP legislation is provided by the World Bank 'PPP in Infrastructure Resource Center' on its website.

The PPP process

Overview

Figure 3 shows the typical stages of a PPP procurement process. This section is taken from *How to engage with the Private Sector in PPP in Emerging Markets*, World Bank/PPIAF, 2011, which provides a comprehensive and clear series of figures summarizing the procurement process[7]. Many of the guidance sources, listed with links in Annex 1 have similar summaries. Some references cover a particular procurement task in more detail or more clearly than others and referring to more than one source may help to clarify an issue. The Figure defines the following three stages in the procurement process.

Project selection and preparation: Projects should be developed as means to achieve transport policy objectives. A road investment program not derived from transport policy goals will tend to be incoherent and may be influenced by short-term electoral considerations. Both these factors result in inefficient investment. Similarly, the public sector should have assessed PPPs as an appropriate procurement method for this class of project in their policy statements[8].

[7] See eLibrary of the World Bank.
[8] See the Center for PPP expertise at http://pppunit.go.ke.

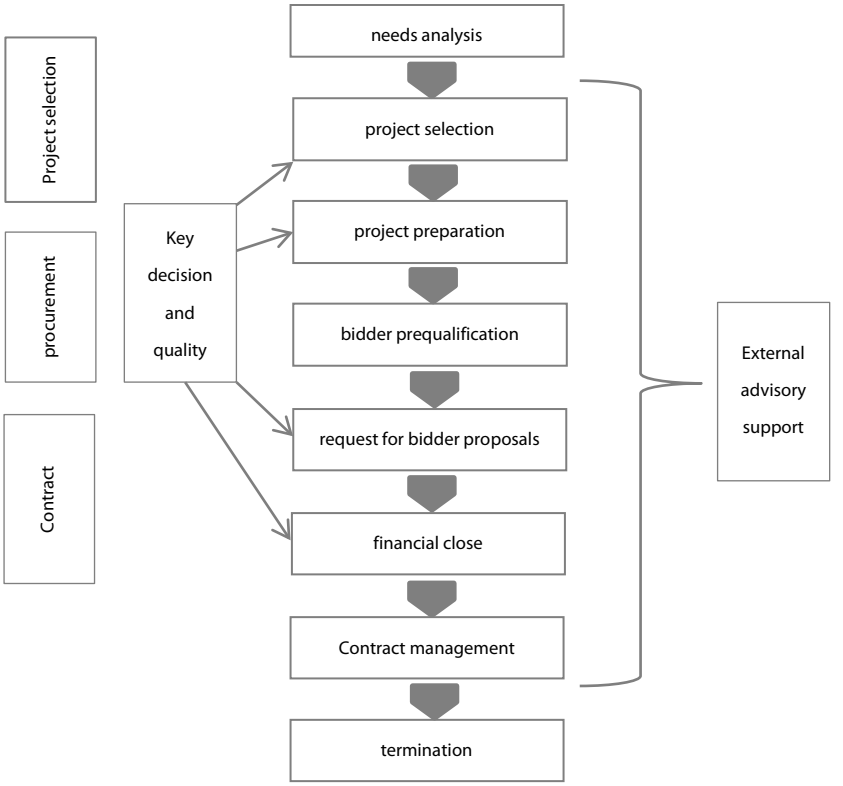
Procurement. In general, the concessionaire should be selected by the Grantor under open competitive bidding procedures[9]. Having assessed and defined a project, the procurement process starts. Preparatory work is required to determine the optimal structure of the concession, as it will ultimately be incorporated into the concession agreement. Substantial information needs to be collated so that bidders can develop their proposals, which will require the appointment of expert advisors. Pre-qualification provides a shortlist of bidders from whom bids are received and a Preferred Bidder selected[10]. The concession agreement is then negotiated and Financial Close achieved. The procurement stage ends when the concession agreement becomes effective.

Contract management. Once the concession has begun, the public sector partners will act with the concessionaire to resolve issues that arise during construction and operation. They will also monitor the performance of the project to ensure compliance with the concession agreement.

The various steps of the process are described in more detail below.

[9] World Bank Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants. Washington, D.C., U.S.A., January 2011.
[10] ibid.

Figure 3 The PPP procurement process



Source: 'How to engage with the Private Sector in Public-Private Partnerships in Emerging Markets', World Bank/PPIAF, 2011.

Project advocacy and selection

With the exception of unsolicited bids, road projects are usually generated by the MDA responsible for road investment. They may also be generated by politicians or as part of regional transportation strategies. Typically, road MDAs have a prioritized list of potential highway investments. As a project rises up, this list the level of preparation by the MDA and its advisors will increase, including funding mechanisms. The specification of the project is also likely to be refined to optimize its economic return and maximize its achievability. For the general project selection and refinement process see 'How to engage with the Private Sector in Public-Private Partnerships in Emerging Markets', World Bank/PPIAF, 2011.

Selection of procurement method

The choice of funding and, in particular, the selection of PPP procurement over traditional procurement, will depend on a number of factors. Firstly, public sector procurement rules may need to be consulted, and guidance sought, to determine:

- If PPP procurement would be allowed for the project, given its nature and legal, regulatory or policy requirements?
- What other MDAs would be involved?
- What the procurement process would be?
- What support from other MDAs would be available?

If a PPP procurement is permitted and appears achievable, a value for money (VFM) or public sector comparator (PSC) analysis[11] may be required to determine whether a PPP is the best means of procurement. If a VFM or PSC analysis indicates that a PPP is the best means of procurement, it then needs to be confirmed that the project will attract sufficient private sector interest to provide competitive bids and a successful concession. Factors that affect the viability and attractiveness of PPP include[12]:

Project size. PPP projects need to be relatively large to be cost-effective for public and private sector participants.

Operational requirements. An important benefit of PPPs is capturing private sector expertise in minimizing whole-life capital and operating costs. Projects with limited operating costs will tend to gain less from PPP procurement (bias toward the capital part of the PPP during bid evaluation, higher risks of poor performance during the maintenance period).

Payment mechanism. PPP road projects typically recover most or all costs from toll revenues, assuming legislation permits tolling by private companies. Forecast traffic volumes need to be sufficient to generate the necessary revenue stream, at toll rates, which are acceptable to road users. This usually requires a traffic study, as part of the feasibility study.

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[11] Is the Public Sector Comparator right for developing countries? Appraising public-private projects in infrastructure. J. Leigland, C. Shugart. PPIAF.

[12] This list is largely from 'Assessment of Projects for Procurement as Public Private Partnership', Central PPP Policy Unit, Dublin, November 2006.

Competitive PPP market. A competitive market is necessary to get the best results from the procurement procedure. The level of private sector interest, and any key concerns, is usually determined through market testing. This will indicate the private sector's view on the concession structure, project bankability and acceptability of project risks.

Significant risk transfer. If little project risk is acceptable by the private sector, PPP may not be the best means of procurement.

Past experience. The viability of PPP procurement may be determined from previous successful PPP transactions for similar projects, especially if enacted under the same legislative and institutional frameworks.

Project urgency. PPP procurement is a relatively lengthy process. If the project is required urgently, traditional procurement may be preferable.

Minimum project size

It is generally accepted that toll road projects need be of a certain minimum size to be candidates for procurement. A 2009 EIB report[13] suggested a minimum procurement cost of €25 million for PPP projects. Other authors have expressed a minimum project size, for toll roads, in terms of average daily traffic volumes. A minimum AADT figure of 10,000 PCU has been quoted for India; the recent draft toll road consultation document for Nigeria[14] gives an indicative range of 15,000-25,000 vehicles per day as a minimum for greenfield toll roads (see Table 3).

Table 3 Nigeria 'Indicative Daily Traffic Requirements for Tolling'

Daily traffic requirement (PCU)	*Costs to be recovered*
15,000 – 25,000	New construction / reconstruction
6,500	Rehabilitation
3,500	Maintenance
1,500	Recovery of toll collection costs

Source: Draft Green Paper on Federal Roads and Bridges Tolling Policy, Federal Ministry of Works, October 2013.

[13] *Review of Lessons from Completed PPP Projects Financed by EIB*, Robert Bain, EIB, 2009, available at www.robbain.com

[14] Draft Green Paper on Federal Roads and Bridges Tolling Policy', Federal Ministry of Works, Abuja, Nigeria, October 2013, available at www.icrc.gov.ng

The main requirement for PPP procurement is sufficient contract value to attract private sector interest. However, the €25 million minimum cost quoted in the EIB report is unlikely to be sufficient for most African projects. International private sector investors are likely to require a substantially higher value for the project to be attractive and €100 million may be a more typical value in the African context. This is due to:

- The lack of private sector knowledge of the local toll road market and public sector jurisdictions
- The lack of successfully-implemented PPP projects to demonstrate sustained government commitment
- The need to establish, and refine through procurement experience, an effective legal and institutional framework
- The lack of a committed future PPP procurement program to attract private sector interest through longer-term investment opportunities

Lower project value thresholds are possible once a PPP procurement process has been successfully applied. The reduced risk of abandoned procurements, and lower transactions costs from proven legislative and institutional processes, are likely to increase private sector interest. For example, South Africa's first PPP project, the very large ($4bn.) Gautrain Rapid Rail Link in Johannesburg, resulted in the creation of a robust PPP legislative and institutional framework, developed and refined during the successful procurement process. A series of smaller PPP procurements has followed this initial large-scale project.

Daily traffic volumes, such as those given in Table 3, may provide a broad measure for identifying possible PPP projects. However, conversion of the minimum PPP contract value into traffic terms relates primarily to the revenue potential of the highway, assuming toll revenues are the primary payment method for the concessionaire. Key factors determining the revenue potential of a road include:

- Traffic volumes, as measured by AADT
- Travel times on competing untolled roads
- Traffic composition, with a higher truck content increasing revenue potential
- Willingness-to-pay tolls, as measured by values of time which are related to car users' incomes

- Growth potential, from population, car ownership and economic growth within the road catchment
- Maximum permitted toll rates

At an early stage in the project identification process, the public sector promoter will develop a preliminary financial model to confirm that the road has the scale and revenue potential to consider further examination as a candidate for PPP procurement.

Project preparation

Once a PPP procurement is confirmed, the public sector must prepare the project for the bidding process. A summary of the key tasks is provided in *How to engage with the Private Sector in Public-Private Partnerships in Emerging Markets*. These include setting up the project team and defining MDA roles. Substantial advisor support will be required, in addition to support from MDA, to produce the documentation required by bidders. The documentation will then be uploaded to the project's data room, a secure website accessible to bidders, advisors and other parties and controlled by the public sector project team.

The Grantor needs to ensure that the right-of-way is cleared. Lack of a clear right-of-way is a common problem in African concessions, as well as in other regions. An Environmental and Social Impact Assessment (ESIA) will be required, usually prepared by environmental consultants. A traffic study will be commissioned from transport planning consultants and this will provide the Grantor's traffic and revenue forecasts. Detailed technical information is also required. This may be produced by engineers in the promoting MDA or by consultants.

Project data room

Bid preparation and due diligence require a large amount of information provided by the Grantor to the bidders, their advisors and lenders. Access to all project information needs to be equally available to all bidders to ensure a fair competition. In the past, a physical data room was often established at the Grantor office. This would contain hard copies of documentation (engineering plans, traffic reports and legislation). Virtual data rooms are now the norm. All documentation is in digital form and stored on a secure server. Access to the data is by username and passwords controlled by the Grantor. Notification of additions, deletions or amendments to documents is made by email to bidders. Virtual data rooms pro-

vide much easy and cheaper access for bidders. The contents of the data room will vary between projects. Typical contents for a toll road project are given in Table 4.

Table 4 Indicative data room contents

Type	*Indicative contents*
Concessioning process	Information Memorandum, concessioning schedule, enabling legislation. PPP guidance. Evaluation criteria.
General information	Description of asset provided and contextual information. Transport and land use plans. Documentation. Site visits.
Contracts	Draft concession agreement. Risk allocation.
Design	Engineering drawings of alignment. Detailed technical drawings of highway, toll plazas, rest & service areas. Geotechnical information.
Operations	Current and historical traffic volumes and revenues, service area revenues, current and historical toll rates and discount rates, dates of opening and improvements to each highway section, toll plaza capacity & operation, maintenance facilities. Traffic study reports.
Personnel	Employment details for any transferred staff from the public sector to the concessionaire.
Finance and accounts	For assets transferred to the concessionaire. Annual reports, independent audit reports, balance sheet and income tables, financial liabilities, depreciation, line basis income and expenses.
Tax	Relevant tax law and specific conditions for the concession, including tax exemption if applicable.
Payment mechanism	Permitted toll rates and escalation formula. Compliance with electronic tolling systems. Revenue guarantees. Performance payments.
Insurance	Concession requirements.
Right-of-way	Details of right-of-way provided by the Grantor.
Environmental and social	Environmental and Social Impact Assessment (ESIA) reports.
Consultation	Required stakeholder and community consultations.
Permits and licenses	Any required documents.
Questions and answers from bidders	Responses and additional information provided.

Source: Research by LeighFisher

Risks and risk allocation

Key benefits of PPP procurement result from the efficient allocation of project risks between the public and private sectors. Many are involved in a road project. The private sector will charge a premium for accepting the risks and this will be onerous if they are allocated risks over which they have little or no control[15].

Bidding process

The bidding process is a sequence of three stages, pre-qualification, bid submission and financial close. Detailed information is outlined in *How to engage with the Private Sector in Public Private Partnerships in Emerging Markets*, World Bank/PPIAF, 2011.

Pre-qualification. The public sector encourages private sector participants to form consortia to bid for the concession by promoting the project and issuing an Information Memorandum to describe the concession and the asset to be created. A Request for Qualification (RFQ) is issued to interested parties who respond with Expressions of Interest indicating that their consortia meets the basic requirements of the concessioning authority and promoting the quality that they offer. The procuring authority assesses the Expressions of Interest and rejects any consortia that do not meet the basic concession requirements. It may then eliminate less well qualified consortia if there are too many qualifying consortia. If insufficient interest in the concession is shown at pre-qualification stage, the PPP procurement may be abandoned, or re-structured to make it more attractive to the private sector before issuing a new RFQ.

Bid submission. A shortlist of bidders is obtained from the pre-qualification process. The project data room is opened and this typically includes a draft concession agreement. This document will reflect comments received from potential bidders during the market testing and pre-qualification stages, where these are not detrimental to the public sector's gain from the concession. The Invitation to Tender (ITT) is issued containing the tender requirements and details on key aspects of the concession. The ITT and project data room contents should be sufficient to enable bidders to develop their pro-

[15] For detailed information on the common road project risks and how they are typically allocated in PPP contracts, see PPP in Infrastructure Resource Center for Contracts, Laws and Regulations (PPPIRC), World Bank, March 2008 at www.worldbank.org/pppiresource.

posals. Opportunities are provided for bidders to seek clarifications and request further information from the Grantor.

Bidders have up to six months to prepare proposals, depending on the complexity of the transaction. Proposals are evaluated and a Preferred Bidder announced.

Financial close

A number of critical tasks are required to achieve Financial Close from announcement of the Preferred Bidder. These include:

Grantor-bidder negotiations. Extensive negotiations between the Grantor and the Preferred Bidder on the terms of the concession agreement. These typically require compromises on both sides but should not include any material deviations from the requirements included in the bidding documents.

Finalizing the lender group. The bidder will have appointed a Financial Advisor (FA) during the pre-qualification stage. The Preferred Bidder's FA will bring together a banking group to fund the project, an often lengthy process. The banking group may comprise multilateral (e.g. IFC and AfDB) lenders, commercial banks, export credit agencies (ECAs) and institutional investors (e.g. pension funds). Each lender will have its own loan terms, formalized in Term Sheets. The project debt may be further allocated to a wider group of banks and institutions through a subsequent syndication process.

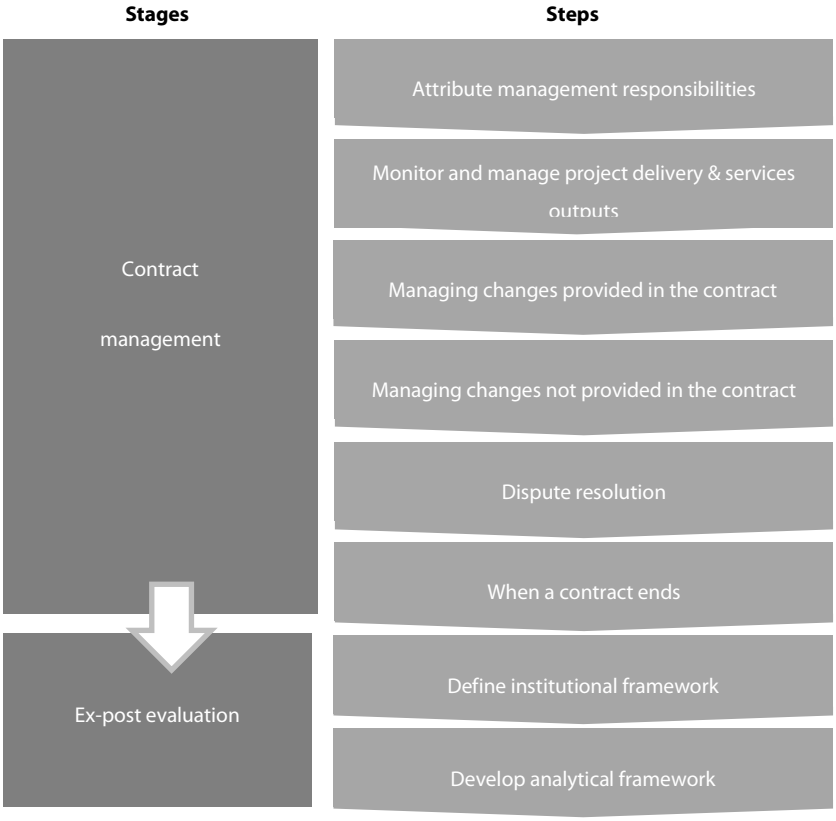
Lenders due diligence. Lenders will commission expert advisors to undertake due diligence, a critical review of all aspects of the project to identify and assess the nature and extent of risks. In particular, lenders will closely scrutinize downside risks and take a conservative approach.

Financial modeling. Financial models will be developed by the Grantor, the preferred bidder (Sponsor) and Lenders. Each model will contain the party's preferred assumptions.

Lender-bidder negotiations. There will be extensive negotiations between the lenders and the sponsor on the terms of the debt. This typically involves a range of advisors supporting each party.

Mitigation of risks. The Lenders and sponsor will seek to mitigate some risks through hedging and insurance. For example, political risk is perceived as significant in several countries in Africa and multilateral organizations, such as the World Bank (e.g. Partial Risk Guarantees, Multilateral Investor Guarantee Agency (MIGA)) may provide insurance against these. Currency risk will be hedged by specialist financial institutions.

Figure 4 Contract management



Source: 'A Guide to Guidance: Sourcebook for PPPs in TEN-Transport', European PPP Expertise Centre, EIB, 2010.

Following Financial Close and the start of the construction phase, the public sector will monitor the concessionaire's performance. It will work with the concessionaire to ensure the timely completion of the work, resolving problems and disputes. Once the road is operational, the public sector will supervise the concessionaire's

contract to ensure that obligations are met. Eventually, at the termination of the concession period, or if the concession is terminated early by one of the parties, the public sector will need to ensure that the public interest is protected, both financially and in terms of the quality of the asset transferred to the public sector. The PPP Unit is typically required to evaluate the impact of the concession against the project as originally appraised.

3. Three case study projects for road PPP

There is a low incidence of PPP road projects in Sub-Saharan Africa (SSA). Although not comprehensive, of the 1,112 PPP projects in the InfraNews database (including cancelled, in progress and completed projects) only 12 were in SSA, and eight of these in South Africa. However, the database also reflects a lack of international awareness of PPP opportunities in the roads sector in SSA. A number of current and potential PPP road projects, identified in desktop research, do not appear in the database. Table 5 lists all identified projects, including those listed in InfraNews and some that are not, together with their basic features and status.

The selected three case study projects are:

- Dakar-Diamniadio Toll Road, Senegal
- Lekki-Epe Expressway, Nigeria
- Accra-Kumasi toll road dualization, Ghana

The case studies are detailed in sections 4, 5 and 6.

To complement the three case studies, a survey of SSATP member countries was undertaken. Its purpose was to obtain information on the current status of PPP policy, legal and institutional frameworks, and current and future PPP procurements. SSATP National Coordinators in each country were sent a questionnaire containing eight questions under four headings:

A. Policy, legislation and institutional framework
B. Existing PPP road construction or maintenance projects
C. Planned or potential PPP road construction or maintenance projects
D. Unsolicited PPP proposals

Responses were obtained from Benin, Burkina Faso, Liberia, South Africa, Swaziland and Uganda. Despite the few responses, it provides a cross-section of SSATP members and a general indication of the wider application and status of PPP procurement in the roads sector in SSA.

Table 5 African PPP road projects

Dakar-Diamniadio Toll Road, Dakar, Senegal			
Road type	*Length (km)*	*Capital cost (USD)*	*Status*
Urban, dual carriageway	21 km	264.6m.	In operation
Henri Konan Bedie Toll Bridge, Abidjan, Côte d'Ivoire			
Urban, dual carriageway	6.6 km	350m.	Under construction
Lekki-Epe Expressway, Lagos, Nigeria			
Urban, dual carriageway	49 km	450m.	Partially completed. Remainder under construction
Nairobi Bypass, Nairobi, Kenya			
Urban, dual carriageway		950m.	Uncertain
Murtala Mohammed International Airport Road, Lagos, Nigeria			
Urban, dual carriageway	3 km		In procurement
Nupeko River Niger Bridge, Nigeria			
Inter-urban			In preparation
Second Niger Bridge, Nigeria			
Inter-urban	40 km	186m.	In preparation
Lagos-Kaiama-Sokoto Road, Nigeria			
Inter-urban	1,100 km		Under assessment
Lomé-Ouagadougou corridor, Togo-Burkina Faso			
Inter-urban	223 km rehabilitation	620m.	In preparation
Accra-Takoradi road dualization, Ghana			
Inter-urban	185 km	–	Feasibility study in progress
Ibadan Circular Road, Ibadan, Nigeria			
Urban, dual carriageway	108 km	322m.	Awarded
Lagos-Abidjan Highway, Nigeria, Benin, Togo, Ghana and Côte d'Ivoire			
Inter-urban	1,028 km	–	In preparation
Matotoka-Sefadu road, Sierra Leone			
Inter-urban	1st phase -70 km	–	To be constructed by traditional procurement
Accra-Kumasi toll road, Ghana			
Inter-urban	240 km	400m.	In preparation
Accra-Tema toll road upgrade, Ghana			
Urban, dual carriageway	19 km	–	In preparation
Arusha-Moshi-Himo Toll Road, Tanzania			
Inter-urban	105 km	-	In preparation
Dar es Salaam-Chalinze toll road, Tanzania			
Urban, dual carriageway	100 km	–	Request for Qualification issued
Bakwena Platinum (N1/N4) Corridor, South Africa			
Urban & inter-urban, variable standard	390 km	360m.	In operation

Three case study projects for road PPP

John Ross Toll Highway, Richards Bay, KwaZulu-Natal, South Africa			
Urban	15 km	145m.	Unsolicited bid approved in 2003, but cancelled later in 2003
N1-N2 Winelands Toll Highway, Western Cape, South Africa			
Inter-urban, dual carriageway	176 km	-	Awarded, but currently on hold
N2 Wild Coast Toll Highway, KwaZulu-Natal & Eastern Cape, South Africa			
Inter-urban, dual carriageway	559 km	480m.	Unsolicited bid in 2000. Cancelled in 2004. May be procured traditionally
N3 Highway Concession, Gauteng & KwaZulu-Natal, South Africa			
Inter-urban, dual carriageway	569 km	-	Completed
Chapman's Peak Drive toll road, Cape Town, South Africa			
Urban	9 km	-	In operation
Pretoria-Johannesburg Road Network Corridor, Gauteng, South Africa			
Urban	-	-	Cancelled
El Galala Quarry Road, Suez, Egypt			
Rural	38 km	-	Not progressing
Rod El Farag access road, Cairo, Egypt			
Urban	34 km	-	Request for Qualification issued April 2010. Not progressing
Shubra-Banha Highway, Cairo, Egypt			
Urban, 2 x 5 lanes	40 km	-	Pre-feasibility studies. Tender delayed.
Shubra-Banha Highway, Cairo, Egypt			
Urban, 2 x 5 lanes	40 km	-	Pre-feasibility studies. Tender delayed.
N4 Maputo corridor, South Africa-Mozambique			
Inter-urban, variable lanes	630 km	660m.	In operation
Maputo-Kosi Bay Toll Road, South Africa-Mozambique			
Inter-urban	~ 130km	-	In preparation
Maputo-Maxixe Toll Road, Inhambane province, Mozambique			
Inter-urban	-	-	Pre-qualification
Vanduzi-Changara Toll Road, Manica & Tete provinces, Mozambique			
Inter-urban	-	-	In preparation
Beira-Machipanda Toll Road, Manica province, Mozambique			
Inter-urban	-	-	In preparation
Tete Bridge and Toll Road, Tete province, Mozambique			
Inter-urban	16 km new and 260 km existing road	-	In preparation

Source: LeighFisher, various

4. Dakar-Diamniadio toll highway

Project description

The population of Dakar has grown rapidly to reach 2.5 million over recent decades. The city lies on the Cap-Vert peninsula with the central area at its western extremity. The rapid eastward expansion of the city has created congestion on the existing low-quality highway network, which has not increased in capacity to meet growing travel demands. The poor highway provision has, in turn, restricted economic development.

The Dakar-Diamniadio toll highway (DDTH) project was developed to provide a high-quality, tolled dual-carriageway highway from central Dakar, through the eastern suburbs to development zones and the national highway network to the east. The highway will also serve the new airport, currently under construction. Table 6 shows key project details.

The highway was developed in three phases. Phase 1, from central Dakar to Pikine and completed in 2009 by traditional procurement methods, comprises a single toll plaza on its eastern section. Phases 2 and 3 opened on August 1, 2013 and were procured as a PPP project.

The east-west corridor is served by Route Nationale 1 (RN1) where traffic is reported to exceed 150,000 vehicles per day[16]. This highway varies in standard but is typically two lanes each direction in dual or single carriageway configurations with frequent at-grade intersections, intensive frontage activities and accesses, and a high volume of mixed traffic (cars, trucks, minibuses and long-distance buses). Pedestrians encroach onto the highway causing accident risk and traffic delays. Traffic management measures are limited and not effectively enforced.

[16] *Transport PPPs in sub-Saharan Africa – Challenges and Opportunities*, Pierre Pozzo di Borgo, International Finance Corporation, Accra, September 2012.

Table 6 Dakar-Diamniadio Toll Road – Project details

Project name	Dakar-Diamniadio Toll Road (Phase 2 - Diamniadio - Pikine)
Location	Dakar, Senegal
Length	32 km in total, of which 20.5 km forms the PPP concession
Objectives	Provide faster movement of goods and people to/from Dakar
	Improve connections to the International Blaise Diagne airport (AIBD), the Dakar Integrated Special Economic Zone (DISEZ), and local traffic for Pikine & Thies. Central Dakar to new airport target travel time is 30 minutes. Encourage urban and rural development outside the existing congested urban area and increase land values in other regions of the country.
	Improve international travel to/from Dakar from/to Mali, The Gambia, Guinea Bissau and Guinea.
Construction works	Construction of a three lanes each direction dual carriageway
Construction type	Greenfield
Capital cost	$264.6m. for the PPP concession.
Construction period	Phase 1 (traditional procurement): July 2005-September 2009. Phases 2 and 3 (PPP procurement): In stages between December 2006 and August 2013.
Concession period	30 years
Revenue	Real tolls
Project status	Completed. Future extension to new airport likely.
Grantor	Agence nationale chargée de la promotion de l'investissement et des grands travaux (APIX-SA).
Concessionaire	Société Eiffage de la Nouvelle Autoroute Concédée (SENAC)
Equity partners	Eiffage Concession

The construction of the DDTH, between Dakar and Diamniadio, has for objective to encourage the economic development of Senegal's main economic center, by:

- reducing transport congestion and associated costs in the peninsula
- encouraging a sustainable spatial distribution of economic activities and housing within and outside the Cape Vert peninsula
- improving housing conditions for the targeted population between Pikine interchange and the Fass-Mbao neighborhood

The DDTH is a high-standard dual-carriageway road of two or three lanes per direction with grade-separated intersections. Its alignment, intersections and toll plaza locations are shown in Figures 5 and 6. It forms the main road link between central Dakar, its eastern suburbs and the Senegalese and international highways.

Figure 5 Route Nationale 1 – East of Pikine, Dakar

Figure 6 Dakar-Diamniadio Toll Highway

Source: LeighFisher. Note: Mainline toll plazas are highlighted in red

The construction phases are summarized below.

Phase 1.1 – Malick Sy-Patte d'Oie

Length: 7 km

Intermediate intersections: 2

Configuration: Initially 2 carriageways of 2 lanes each, subsequently widened to 3 lanes each

Construction started: July 2005

Opened: December 2008

Toll plazas: None

Financing: Government of Senegal, traditional procurement

Traffic volume (AADT): 70,000 vpd

Phase 1.2 – Patte d'Oie-Pikine

Length: 5 km
Intermediate intersections: 1
Configuration: 2 carriageways of 3 lanes each
Construction started: November 2006
Opened: September 2009
Toll plazas: Initially one mainline plaza, at Pikine I/C. After opening of Phase 2, mainline plaza replaced by ramp plazas at Pikine I/C
Financing: Government of Senegal, traditional procurement
Traffic volume (AADT): Unknown

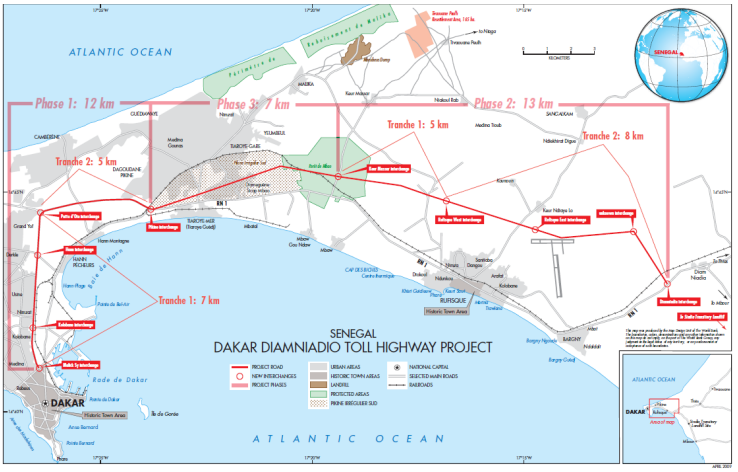
Phase 2 – Keur Massar-Pikine

Length: 7 km
Intermediate intersections: 1
Configuration: 2 carriageways of 3 lanes each
Construction started: February 2010
Opened: 1 August 2013
Toll plazas: Ramp plazas at Pikine and Thiaroye interchanges. Mainline plaza at Thiaroye
Financing: Tolls, PPP procurement.
Traffic volume (AADT): 40,000 vpd

Phase 3 – Keur Massar-Diamniadio

Length: 13 km
Intermediate intersections: 2
Configuration: 2 carriageways of 2 lanes each
Construction started: December 2006
Opened: Rufisque Ouest-Diamniadio opened 12 November 2012. Fully opened 1 August 2013
Toll plazas: 3 Ramp plazas at Rufisque Ouest and Rufisque Est, Mainline plaza at Diamniadio
Financing: Tolls, PPP procurement
Traffic volume (AADT): 15,000 vpd

Figure 7 Dakar-Diamniadio Toll Highway



Source: The World Bank Group

Figure 8 Dakar-Diamniadio Toll Highway – West of Pikine, Dakar

Phase 1 has two sections east of Dakar city center (Malick Sy-Patte d'Oie and Patte d'Oie-Pikine). These sections were constructed on the alignment of the existing national road. A single toll plaza was operated at Pikine charging 'commercial' toll rates with revenues accruing to the Government. In addition to providing revenue to re-coup construction costs, the toll plaza helped to establish public acceptance of tolling as an acceptable payment for faster and safer travel.

The single toll plaza was replaced by ramp plazas at Pikine interchange on the opening of Phase 2 with revenues accruing to the concessionaire. Typical conditions on Phase 1 are shown in Figure 6.

PPP legislative and institutional framework

Overview

The development of the DDTH project, and the wider PPP program, began in March 2000. The authorities had at that time decided to adopt more liberal policies to encourage inward investment. A key element of this was the creation of a dedicated, 'one-stop' investment organization for major projects, APIX S.A., the Investment Promotion and Major Projects Agency, in July 2000. Its role is to promote foreign direct investment and oversee the implementation of large-scale infrastructure projects. The Director-General of APIX reports directly to the President's office.

Legal framework

A series of law and decrees then followed which provided the legislative and institutional framework for the use of private finance in infrastructure projects:

Law n° 2004-13 of 1 March 2004 provided the legal basis for projects using private finance and user charges. The law required transparency and fair competition in the concessioning process.

Law n° 2004-14 of 1 March 2004 established the Conseil Présidentiel de l'Investissement (CPI)[17]. The CPI was responsible for selecting the concessionaire and for regularly monitoring the operation of the concession. The CPI seeks to operate transparently to provide an independent review and recourse for any concerns of project users or stakeholders. The CPI is based in the same building as, and works closely with APIX.

Law n° 2009-21 of 4 May 2009. The PPP law was refined in the light of shortcomings encountered in implementing the DDTH concession, the first major PPP project.

[17] www.cpi-Senegal.com

The key changes were:

- The Minister of Economy & Finance was given a greater role in contracts, particularly in assessing their recurring costs on public finances. The Minister is now required to countersign PPP contracts.
- Representatives from public administrations, for each contract, must be nominated by decree, apparently to provide continuity during the procurement process.
- Refinement of complaints procedures. In particular, unsuccessful bidders have a right to complain within 15 days and an authority other than the CPI, which made the selection, review the complaint to provide independence.
- PPP contract parties are allowed to choose a national, regional or international arbitration body to resolve disputes. This provides a faster resolution of disputes than going to international arbitration.

DÉCRET n° 2007-169 of 13 February 2007 specified mandatory contents for PPP contracts for the development of the DDTH by PPP procurement under the terms of Law n° 2004-13 of 1 March 2004.

DÉCRET n° 2010-489 of 13 April 2010 provided a simpler, two-stage (prequalification and bid) PPP procurement process for concessions of less than CFA 15bn. (approximately $30m.) undertaken by local authorities.

The three pieces of primary legislation and two pieces of secondary legislation provided Senegal with effective legislative and institutional frameworks for implementing a program of PPP procurement, at national and local level. Further legislation is likely to refine these frameworks as more experience is gained.

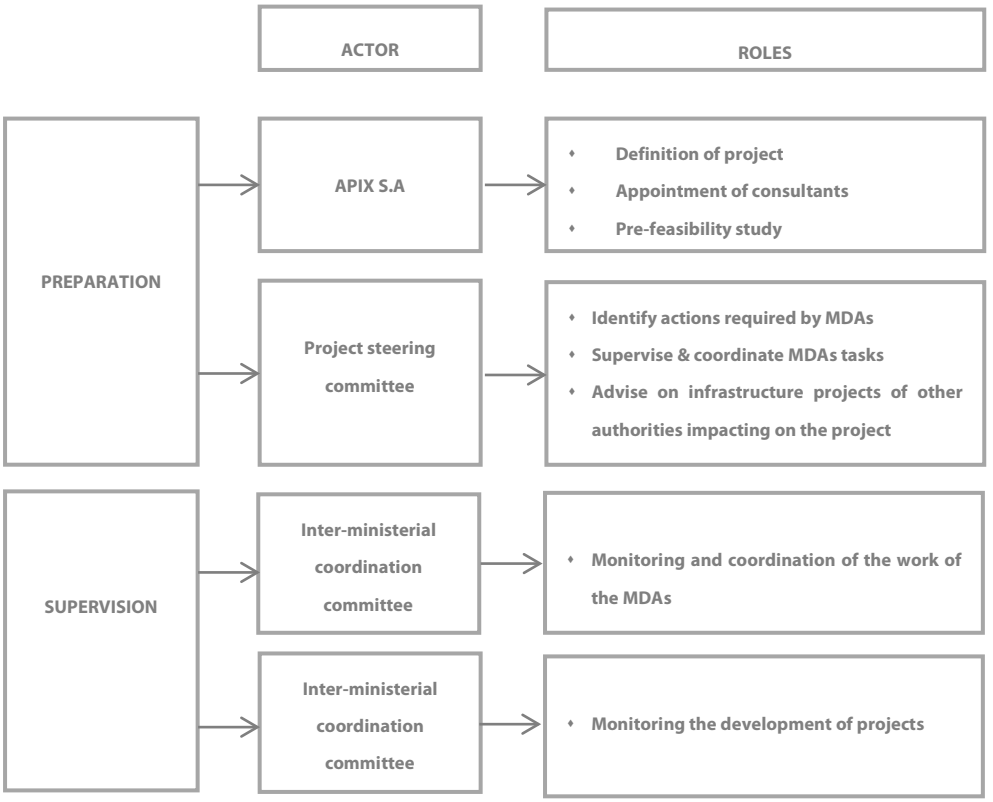
Institutional framework

The institutional framework is summarized in Figure 9. A Project Steering Committee is created and chaired by the Director-General of APIX who reports to the President each quarter on project progress. An Inter-ministerial Coordination Committee meets monthly and is chaired by the Prime Minister. The Presidential Investment Council (CPI) meets quarterly and is chaired by the President.

The institutional structure means that, once a project is underway, APIX can, with presidential backing, require MDA to provide the necessary support.

The functions performed by APIX are summarized, by project phase, in Figure 9. During the Initiation Phase, APIX conducts technical and financial pre-feasibility studies. It also develops a PPP concession structure, if the project is seen as PPP potential. APIX then provides the President with their findings.

Figure 9 Institutional framework for PPP project procurement in Senegal



Source: APIX-S.A., Translation: LeighFisher.

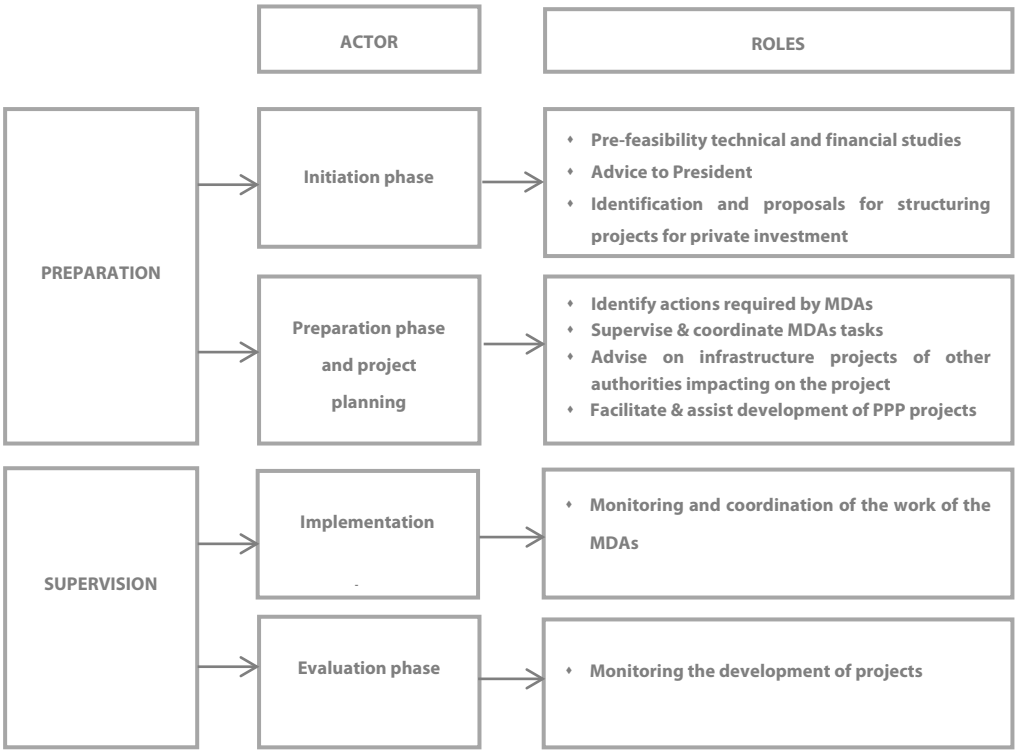
If PPP procurement is agreed, APIX commissions all required feasibility studies, including technical, traffic, environmental and financial, from consultants. A project steering committee is formed that involves MDAs. The consultants, in conjunction with APIX, prepare tender documents and information for the project data room.

In the Implementation Phase, the tender is launched and a three-stage (pre-qualification, bid, best and final offer) PPP competition is initiated. The concession is awarded and APIX then monitors the development and operation of the

project. Finally, the impact of the project will be evaluated and conclusions drawn on its efficacy and the procurement process.

The procurement process is shown in Figures 10 and 11.

Figure 10 Role of APIX-SA

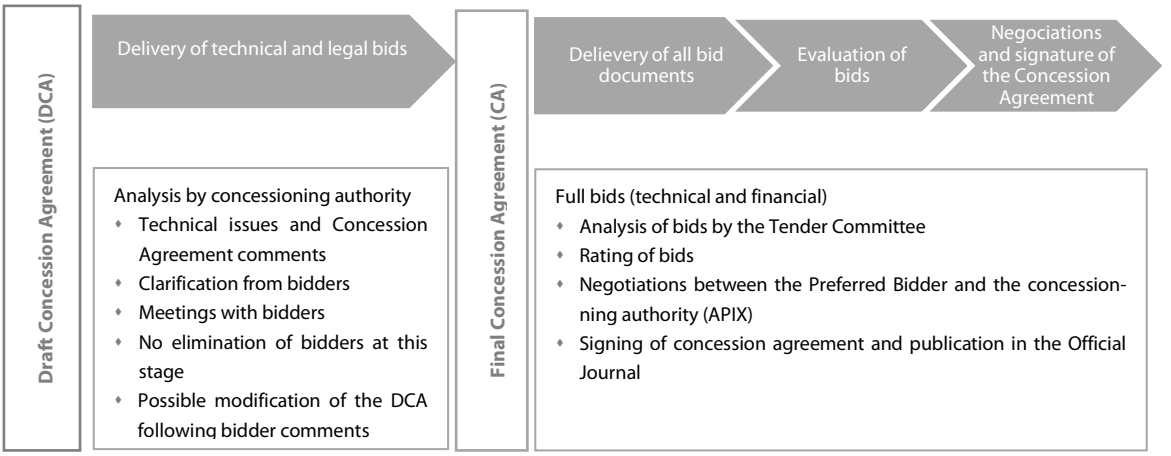


Source: APIX-S.A., Translation: LeighFisher

Figure 11 Procedure for the selection of the DDTH concessionaire – Phase 1

Source: APIX-S.A., Translation: LeighFisher

Figure 12 Procedure for the selection of the DDTH concessionaire – Phase 2



Project advocacy and development

Phase 1

The *Route Nationale 1* in Dakar is the busiest highway corridor in Senegal. It is therefore not surprising that the first formal study of its improvements was undertaken as early as 1978. This defined a route between Dakar and Thiès, a city 60 km to the east of Dakar and east of Diamniadio. A tender for the traditional procurement of the highway was drafted in 1980, but not issued. The project remained a high priority for the Ministry of Infrastructure and Transport.

President Wade, after his election, placed a high priority on the DDTH project. A three-phase strategy was developed for its procurement with APIX instructed to develop it. Given the urgent need for an improved highway eastward from central Dakar, and the time required to develop a PPP framework for Senegal and prepare the DDTH for concessioning, Phase 1.1 (Malick Sy-Patte d'Oie – 7 km) and Phase

1.2 (Patte d'Oie-Pikine – 5 km) were to be procured by traditional contracts (see Figure 5). In parallel with the procurement of Phases 1 and 2, the general legislative and institutional frameworks for PPP procurement in Senegal, and the high priority Phase 2 and 3 of the DDTH were to be developed. The Phase 1.2 Patte d'Oie-Pikine section was to be tolled at commercial rates from opening and would form part of the Phase 2 and 3 PPP concession when implemented, providing additional revenue to the concessionaire.

The alignment and design of the DDTH were defined by the Ministry of Infrastructure and Transport. A traffic survey was conducted in 2002, and traffic and revenue forecasts produced in 2004[18]. A financial model was developed and updated periodically and the project was subject to an environmental and social impact assessment[19] in preparation for funding by IFIs.

Phase 1.1 of the project to widen the existing Malick Sy-Patte d'Oie highway to three lanes each direction was ready for implementation by traditional procurement. The tender was issued in February 2005 and awarded to the consortium Jean Lefèvre Sénégal, a local company part of a large French construction firm, and the Henan China Company in June 2005. Construction began in July 2005 and the highway opened in December 2008. There were no tolls on this section.

The tender for Phase 1.2 (Patte d'Oie-Pikine) was issued in March 2006 and awarded to the Portuguese company Moniz da Maia, Serra & Fortunato (MSF). Construction began in November 2006 and the road opened in September 2009. Phase 1.2 was funded by the Government of Senegal with revenues obtained from a toll plaza immediately west of Pikine intersection. The tolls charged were:

- Category 1 – Motorcycles CFA 200
- Category 2 – Cars CFA 400
- Category 3 – Van/pick-up/small truck CFA 600
- Category 4 – Bus/truck CFA 800

Note: $1=CFA 496 (1 September 2013)

[18] Autoroute Dakar-Thiès - Étude d'acceptabilité et de sensibilité au péage, SETEC International, March 2004.

[19] Évaluation environnementale et sociale de l'emprise du tracé de l'autoroute Dakar-Diamniadio, Buursink, March 2006.

The total construction cost of Phases 1.1 and 1.2 was CFA 78.5bn. ($158m.), funded by the Government of Senegal.

Phases 2 and 3

Phases 2 and 3 of the DDTH project were procured through a 30-year PPP concession. Law n° 2004-13 of 1 March 2004 provided the statutory basis for the concession and Decret n° 2007-170 of 13 February 2007 provided the specific authorization for the DDTH procurement.

The decree

- authorized the launch of the procedure for awarding a BOT[20] contract for the completion of the Dakar-Diamniadio toll highway project.
- identified the joint licensing authorities for the project, on behalf of the Republic of Senegal, as the Minister of Economy and Finance and the Minister of Infrastructure, Equipment, Land transport and Domestic Maritime transport.
- mandated APIX to organize, coordinate and obtain the signing of the BOT contract, with selection of the private operator made on line with Law No. 2004-13 of 1 March 2004.

The Invitation to Tender (ITT) and pre-qualification documents were issued on 2 April 2007 and the deadline for submission of Expressions of Interest was 31 May 2007. Three Expressions of Interest, from French, Portuguese and Moroccan consortia, were received:

- **Groupement Eiffage** Eiffage and Eiffage Senegal
- **Consortium Autoroute Dakar** MSF Concessões - SGPS S.A, Brisa - Autoestradas de Portugal, MSF - Moniz da Maia Serra e Fortunato, Empreiteiros S.A., Mota-Engil Concessões de Transportes - SGPS S.A., Banco Espírito Santo
- **Groupement Delta Holding** Delta Holding, Autoroutes des Maroc, INGEMA

All three consortia were pre-qualified in the report of the project's technical committee issued on 25 June 2007.

[20] Build-Operate-Transfer

In line with the process outlined in Figure 11, tender documents were issued on 20 November 2007 and the bidders provided their bid submission in two phases:

- Technical bid (technical and legal submission) on 5 March 2008
- Full bid, comprising the technical and financial proposal. Submitted on 15 October 2008

On receipt of the technical bid, APIX entered into discussions with each bidder. The bidders were then able to modify their technical bid in light of the discussions with APIX. The concession documents were also amended in response to comments raised by the bidders. The revised final concession documents were issued to bidders on 9 May 2008. The modified technical bid was then submitted, together with their financial bid, at the start of the second phase of the bidding process in October 2008.

Groupement Eiffage was announced as the Preferred Bidder in December 2008. APIX then entered into negotiations with Eiffage who formed a Special Purpose Vehicle, SENAC S.A., to be the concessionaire.

The concession agreement between SENAC S.A. (owned by French construction company Eiffage) and the Senegalese authorities was signed in July 2009. Financial Close was achieved on 14 November 2010.

General information on the project and the concession agreement was made public. The concessionaire has undertaken a public relations campaign to encourage the use of the new toll road. APIX and development banks have promoted the project as a successful example of their efforts to improve infrastructure and encourage PPP procurement in Senegal. However, the concession agreement has not been made public.

Development partner support

At an early stage, APIX sought advisory and financial support from development partners. APIX have commented in discussions that this support was essential to the successful design and completion of the PPP procurement process. The African Development Bank (AfDB), World Bank, Public-Private Infrastructure Advisory Facility (PPIAF) and the West African Development Bank (WADB) provided support to APIX during the development and implementation of the procurement process. This allowed APIX to appoint advisors. Monthly targets and reviews, by

APIX and their advisors, were then initiated and were seen as critical in the procurement process.

Preparatory work

Right-of-way

As with any greenfield toll road, resolving right-of-way (ROW) issues is important in ensuring that the construction and operation of the highway can be undertaken by the successful concessionaire, without delays, costs or disruption from ROW issues. The DDTH route runs through the densely populated eastern suburbs of Dakar. ROW issues can be substantial in such locations and this was the case for the DDTH.

Securing the right-of-way involved the re-location of some 30,000 residents from the Pikine Irregulier Sud area along the Phase 3 Keur Massar-Pikine section. A 165-hectare site was identified, at Tivaouane Peul, for the construction of homes for the displaced Project Affected Persons (PAP). However, this site lay close to a large, informal landfill at Mbeubeus. Pollution from the landfill required its closure and the construction of a replacement facility to modern standards. As of December 2013, delays in constructing the facility have caused delays in the closure of the Mbeubeus landfill and in the re-location of residents. The Pikine Irregulier Sud area was also re-structured and its previous poor infrastructure and services were improved as part of the DDTH project.

Due to these issues, the highway construction cost was $265m., the resettlement cost reached $158m. and the Pikine Irregulier Sud re-structuring cost $55m. Whilst these costs are exceptional, they indicate the potential scale of ROW issues and costs in African urban environments. However, the resettlement and restructuring programs provide major benefits in their own right, which are a highly valued consequence of the DDTH by the local communities and development partners who funded them.

Further details of the ROW issues are given in various project documents as the World Bank Project Appraisal Document (World Bank, May 2009) and the IFC Environmental and Social Review Summary (IFC, June 2010).

Technical elements

AGEROUTE, the road agency of the Ministry of Infrastructure and Transport, had developed detailed engineering plans for the DDTH and had been responsible for developing Phase 1 of the project using traditional procurement. Bidders were allowed to modify the design, within limits, to provide more cost-effective solutions, considered as a benefit of PPP procurement.

Environmental and social issues

The most significant environmental and social impacts of the project were the resettlement of displaced residents, closure and replacement of the landfill site and ecological protection for the Mbao forest. APIX commissioned the 2006 Environmental and Social Impact Assessment study with assistance from the World Bank. This study identified the environmental and social impacts and led to the identification of the 3,131 households and 1,126 businesses affected by the project and requiring compensation and/or resettlement. Most of the residents did not have lease agreements or, if house owners, title deeds. Most dwellings were informal, without planning permits. Formalizing leases and ownership was undertaken as part of the resettlement process.

The ESIA was required to comply with both the Senegalese environmental code and those of development partners. Its scale was determined by the World Bank environmental screening of the project. Due to the scale of the impacts, the DDTH required a Category A ESIA, which involves detailed investigations by specialist advisors. The environmental process took at least three years to complete.

Project appraisal

The Government of Senegal did not undertake an economic appraisal of the project in advance of the involvement of development partners. The World Bank conducted a project appraisal as a requirement for IFI funding[21].

The standardized World Bank project appraisal covered the following impacts:

- Economic and financial
- Technical
- Fiduciary

[21] Project Appraisal Document on the Dakar Diamniadio Toll Highway project, World Bank Report No: 43441-SN, May 2009.

- Social
- Environment
- Safeguard policies
- Policy exceptions and readiness

The economic appraisal was undertaken for both the full highway (Phases 1-3, Malick Sy-Diamniadio) and the concessioned highway (Phases 2 and 3, Pikine-Diamniadio). The results given below indicate a strong economic justification for the project. Identified economic benefits were avoided investment, timesavings, fuel saving, road safety, air pollution, greenhouse gases and employment. Benefits to highway users were restricted to reductions in travel times and vehicle operating costs with 81% of benefits coming from travel time reductions. No allowance was made for reduction in accident benefits although it would seem likely that these would be significant. A sensitivity analysis to an increase in costs, decrease of economic benefits was carried out to find the switching value to have a Net Present Value of 0.

Table 7 Dakar-Diamniadio Toll Highway – Economic Appraisal

Project definition	*Economic rate of return*	*Payback period*
Phases 1-3, Malick Sy-Diamniadio	11.3%	6 years
Phases 2 and 3, Pikine-Diamniadio	12.0%	12 years

Source: World Bank (2009).

Financial close

Financial Close of the 30-year concession was achieved on 14 November 2010. Details are given in the following sub-sections.

Risk allocation

The risk allocation on the concession is typical of many PPP toll roads. The concessionaire accepts full traffic as well as construction risk. Financial risks, such as exchange rate fluctuations, are largely borne by IFIs and Eiffage. The latter stated for the purpose of this work that 60% of their payments were in Euro (e.g. bitumen and surveys). From its long experience in Senegal (since 1926), the company has established mechanisms for mitigating the associated currency risk.

Compensation for early termination risks by the Government would be based upon the residual value of the road infrastructure, the cost of cancellation of construction and operations contracts, as approved by the public authorities, and of the debt cancellation. The present value of dividend payments and interest would be paid out to shareholders for the reminder of the concession.

Concession revenues

The concessionaire's revenue comes from tolls paid by traffic. APIX commissioned a traffic and revenue study[22]. The consultant developed a traffic model for the corridor based upon surveys they conducted in March-April 2003, including an origin-destination survey, traffic counts, journey time survey and stated preference survey. The stated preference survey was used to determine the value of timesavings for different types of travelers and therefore their willingness to pay tolls for the travel timesavings offered by the new highway.

SETEC (*Société d'études techniques et économiques*) provided traffic and revenue forecasts for different toll levels and conducted a quantitative risk analysis on the forecasts, to determine the risk envelope of the revenues. Three scenarios were tested:

1. Base toll rates applied from Patte d'Oie to Diamniadio
2. Base toll rates applied from Pikine to Diamniadio
3. Scenario 2, but with Pikine-Thiaroye tolls x 1.5 and Rufisque-Diamniadio tolls x 0.5.

Scenarios 1a and 3a were defined as variants with different arrangements of ramp and mainline toll plazas between Patte d'Oie and Thiaroye. The traffic and revenue forecasts are given in Tables 8 and 9.

Traffic volumes decrease with distance from the city center. Approximately 100,000 vehicles each day were forecast for the untolled Patte d'Oie-Malick Sy section in 2008 when it was assumed to open. East of Patte d'Oie tolling, in Scenario 1, traffic is reduced by 40-45%. Traffic volumes decline markedly east of Pikine to 33,000, then 17,000 east of Thiaroye and 9,000 east of Keur Massar.

[22] Projet d'autoroute Dakar-Thiès, Étude d'acceptabilité et de sensibilité au péage, SETEC International, March 2004.

As of November 2013, daily traffic volumes[23] east of Pikine were 28,000. This is less than the above estimate but somewhat higher than quote from Eiffage of 2013 daily traffic of 26,700.

Table 8 Dakar-Diamniadio Toll Highway –Traffic forecasts for 2008 (AADT)

Section	*Length (km)*	*Toll (CFA)*	*Toll scenario*				
			1	**1a**	**2**	**3**	**3a**
Diamniadio-Rufisque	8.1	500	9,049	8,303	9,356	8,845	8,578
Rufisque-Keur Massar	8.7	175	9,442	8,703	9,718	9,240	8,913
Keur Massar-Thiaroye (East)	5.4	200	16,694	14,740	17,398	16,365	15,136
Thiaroye (West)-Pikine (East)	2.8	200	33,083	32,012	37,743	31,994	32,462
Pikine (East)-Pikine (West)	0.6		30,638	31,969	37,570	31,954	32,303
Pikine (West)-Cambérène (East)	0.8	100	52,235	52,613	86,977	82,386	82,633
Cambérène (East)-Cambérène (West)	1.0	100	49,886	50,604	83,614	79,477	79,592
Cambérène (West)-Patte d'Oie (East)	0.5		58,127	59,124	105,166	104,382	104,411
Patte d'Oie (East)-Malick Sy	6.5	0	96,401	96,492	103,837	103,654	103,661
TOTAL - PATTE D'OIE-DIAMNIADIO	28.9	-	17,054	16,218	20,931	19,442	19,124

Source: SETEC report

Note: Tolls shown are for Toll Class 1 (cars) and for Toll Scenario 1. Cars and taxis are charged the same rate. Buses are charged 1.5, and trucks 2.0, times Toll Class 1 rates.

Table 9 Dakar-Diamniadio Toll Highway–Revenue forecasts for 2008 (2003 CFA m.)

Section	*Toll scenario*				
	1	**1a**	**2**	**3**	**3a**
Diamniadio-Rufisque	669	695	691	653	630
Rufisque-Keur Massar	791	723	814	774	743
Keur Massar - Thiaroye	1,367	3,598	1,429	1,339	3,090
Thiaroye - Pikine	2,642	2,729	3,020	3,824	2,070
Pikine - Cambérène	2,096	1,673	0	0	0
Cambérène - Patte d'Oie	2,319	334	0	0	0
TOTAL CONCESSION	9,884	9,752	5,955	6,589	6,533

Source: SETEC report

[23] Diamniadio Toll Highway: P087304 - Implementation Status Results Report, 28 December 2013, World Bank.

Toll scenario 3 provides the highest revenues from Phases 2 and 3 (Pikine-Diamniadio). The forecasts suggest that, at the toll rates tested, demand is relatively price inelastic—an increase in tolls results in a less than proportionate increase in demand. This is in spite of the relatively low-income levels along the corridor.

In line with usual practice in PPP toll roads, Eiffage, as Sponsor, appointed consultants to produce their own traffic and revenue forecasts. Once Eiffage was announced as Preferred Bidder, their Lenders commissioned further forecasts, including P95 and P99 downside cases where the actual traffic volumes have 85% and 99% probability to be equal or to exceed the estimated traffic. It is understood that Lenders' Base Case forecasts were some 20% lower than the Sponsor's Base Case, a difference typical of toll roads internationally.

Financing

The structure of the PPP concession was determined by the financial advisors to APIX. They collated projections of likely project costs and revenues and tested alternative concession structures in their financial model. The final choice of concession structure sought to ensure profitability to the private sector partner whilst maintaining the economic returns required by the authorities and development partners. The financial model estimated the likely return on equity and debt service cover ratios for the private sector concessionaire. The advisors' analysis informed the specification of the concession period and allocation of risks.

As in many PPP-procured highways, substantial funding was required from IFIs and the Grantor. IFIs have very different requirements for credit approval than commercial banks, which adds complexity to the transaction. IFIs require for instance environmental, social and economic impact assessments and the satisfactory mitigation of negative project impacts. Sponsors and commercial lenders, in contrast, focus on the return on equity and the debt-service coverage ratio through the concession period. As Sponsors are typically construction or operating companies, they consider the profits they expect to gain from highway construction and operation, and receipts from the possible future sale of their equity in project.

The selected concessionaire for the DDTH, SENAC, was a Special Purpose Vehicle created by Eiffage. Their financial bid included allowance for the future value of their equity stake and the profits they expected to generate from construction.

Table 10 summarizes the financing structure for the concession. Additional funding was provided by IFIs and the Government of Senegal for the other non-PPP project components, the total financing being:

- Component A. Road Infrastructure – $264.6m.
- Component B. Right of Way Clearance and Mbao Forest Management – $158.3m.
- Component C. Urban Restructuring of Pikine-Irregulier Sud – $55.0m.
- Component D. Program Implementation - $14.1m.

The debt/equity ratio is 87:13 which is relatively high for a PPP concession. The relatively low proportion of sponsor equity may reflect the higher risk associated with the first major PPP transaction in Senegal. Eiffage also borrowed €62.5m. from IFC, AfDB, WADB and *Compagnie Bancaire de l'Afrique Occidentale* (CBAO). The CBAO loan is the only private finance in the project, other than Eiffage's €30.0m. equity stake. It is the largest Senegalese bank and is majority-owned by Attijariwafa Bank, the largest Moroccan Bank. The CBAO's loan accounts for just 2.7% of DDTH funding. Including Eiffage's equity, private financing provided 16.1% of project funding.

Table 10 Dakar-Diamniadio Toll Highway – Phases 2 and 3 – Funding

Finance type	*Source*	*Amount (EUR)*	*Borrower*	*Tenor (years)*
EQUITY	Eiffage Concession	30.0	-	-
DEBT				
Senior Secured	IFC	12.3	Eiffage	15
Subordinated	IFC	9.9	Eiffage	15
Senior Secured	AfDB	11.8	Eiffage	13-14
Senior Secured	WADB	22.6	Eiffage	13-14
Senior Secured	CBAO	5.9	Eiffage	13.5
Senior Secured	AfDB	50.0	GOS	Unknown
Senior Secured	AFD	25.0	GOS	Unknown
Senior Secured	Government	55.0	GOS	Unknown
TOTAL		222.5	-	-

Source: Rothschild, World Bank, IFC, PPIAF, InfraNews, LeighFisher.

Note: Finance information has been obtained from a number of sources. There is some conflicting and ambiguous evidence from these sources and the above presents the study's best assessment of the finance structure.

The CBAO has commented that their loan was only possible because it was backed by a government guarantee that the debt would be repaid. Local banks, they noted, lacked the expertise in PPP transactions and investments of this scale. The CBAO had a good existing relationship with Eiffage and with the Government of Senegal, which owns 9% of CBAO shares. The CBAO does not believe that any other Senegalese bank has the capacity to provide debt for PPP projects.

No international commercial bank finance was provided to the project. Consequently, no risk guarantees were required from the World Bank or the Multilateral Investment Guarantee Agency (MIGA) who can facilitate private finance by providing insurance against various project-financing risks.

Implementation and status

Phases 2 & 3 PPP highway opened to traffic on 1 August 2013. There was a brief protest against the toll rates by taxi drivers and the President requested that Eiffage remove tolling for three days during a recent religious holiday, which Eiffage agreed to. Eiffage may see this as an acceptable political compromise and a means for getting non-users to experience the benefits of the highway.

Negotiations with Eiffage were initiated for the extension of the highway eastwards to the new international airport (Aeroport International Blaise Diagne - AIBD), currently under construction 47 km east of Dakar city center. The contract would be to construct and operate the airport highway as a tolled extension to the existing DDTH highway. The new airport is currently expected to open in 2015.

Summary

Key project features

Project purpose: Dakar is a rapidly expanding city, geographically constrained by a city center lying at the western end of a peninsula from which suburbs have extended eastwards. Travel along the corridor has grown in volume from expanding suburbs, economic growth and rising incomes. The existing highway was poorly designed, badly managed and lacked capacity for existing travel demand with little scope for travel demand growth. The existing urban rail has low capacity and is poorly maintained. The lack of highway capacity suppresses growth in the local economy with implications nationally. The case for a high-capacity highway is therefore very strong.

Procurement process: The DDTH is noteworthy as one of the few highways to be procured and implemented successfully through a PPP in SSA. Furthermore, the procurement process was designed and implemented in a manner, which generally follows good international practice, as recommended by development partners and private sector participants. As such, it offers a practical example of how PPP procurement can be achieved within the economic, political and geographical environment of many SSA nations.

Legislative and institutional framework: With key support from development partners, the Government of Senegal created an effective legislative and institutional framework that was essential in enabling PPP procurement. This framework has been refined during the course of the DDTH procurement, Senegal's first major PPP transaction, and further refinement is planned for the future.

PPP competition: The project attracted three competitive bids from the private sector and, given the lack of experience in West African highway PPPs, this response is an indication of the robustness of the Senegalese PPP legislative and institutional framework and DDTH project development. It took nearly two years to achieve Financial Close from announcement of Preferred Bidder. However, this might be expected for a first major PPP concession and reflects the commitment to the PPP process from both public and private sector partners.

Limited private finance: The project attracted sufficient private sector interest for a truly competitive procurement to take place. However, only limited private finance was attracted, which was largely funded by development banks.

Implementation: The DDTH has been constructed and opened within the planned schedule. In spite of advance marketing by the concessionaire, the tolls have prompted criticism and some protests. These have been less than experienced elsewhere, possibly due to the advance promotion of the benefits of the highway to prospective users, previous tolling along the corridor and the existence of an untolled alternative.

Secondary benefits: Major secondary benefits accrued from the DDTH. These included the resettlement of residents along the highway right-of-way in much improved housing, re-location and upgrading of a large informal refuse dump, formalization of dwelling ownership and re-structuring of the Pikine suburb. These improvements were required and funded by development partners.

Key transferable experience

Continuing Head of State commitment: President Wade was a strong supporter of PPP procurement from his election in 2000. This commitment was maintained by President Sall after his election in 2012. President Wade created APIX, the concessioning agency, and gave it the extensive powers and resources required to design and implement large-scale PPP procurements. This sustained commitment contributed to the successful procurement and launching of the project.

Early access to development partner and advisor support: Seeking and obtaining, advisory support from development partners at an early stage ensured that an appropriate legal and institutional framework was established in advance of commencing procurement. The advisors also defined and monitored progress of the procurement process in conjunction with APIX. The knowledge gained from collaboration with the advisors has provided APIX with the expertise to implement a continuing pipeline of PPP projects.

Early establishment of the legal and institutional framework: The establishment of a suitable legal and institutional framework before procurement began was essential for the successful completion of this first PPP procurement.

Establish, resource and empower a PPP unit: The early creation of APIX as a 'PPP Unit', with sufficient resources and powers to coordinate across MDAs, was a critical factor in the successful procurement of DDTH. APIX, with advisor support, were able to design and implement the DDTH procurement and acted as a focal point for the various stakeholders in the transaction.

Pre-procurement preparation: The preparation of legislation, institutions, expert staff and documentation before commencement of procurement was cited by stakeholders as a major asset in the bidding process and subsequent negotiations to Financial Close. Such support of external advisors to assist in the design and implementation of the procurement process is essential, at least for the first transaction. External expertise is also required to prepare tender documentation, such as environmental, technical and traffic reports.

Realistic procurement timescales and costs: The DDTH was the first PPP procurement in Senegal. Consequently, additional timescales and costs were incurred in establishing and refining the framework and procedures, and in, for example, training staff. Nonetheless, the procurement of PPP projects is always a relatively lengthy, complex and costly process. It is important that public sector stakeholders, in particular, are aware of this from the outset and their expectations on project delivery dates are realistic to ensure continued commitment to the process.

5. Accra-Kumasi toll road

Project description

Accra, with a population of 2.3 million in 2012, is Ghana's political, economic and transport center. The national highway network radiates from Accra east-west along the coast and northwards to the rest of Ghana and neighboring landlocked countries. Kumasi is the second largest city in Ghana with a population of 2.1 million (2013 estimate). It lies 230 km north of Accra, connected by the N6 highway. The N6 highway links northern Ghana, Kumasi and Accra and is a major component of the nation's strategic highway network. It also serves transit traffic to/from Burkina Faso and Niger.

The N6 is mostly single carriageway with a poor safety record. Travel times between the two cities are quoted as being 5½ hours. Piecemeal rehabilitation work and dualization has improved some sections.

The project will create a continuous dual carriageway between the two cities under a PPP concession. Revenues will be obtained from tolling users. The capital cost is anticipated to be $400m. Key project details are given in Table 12 with the route shown in Figure 13.

Traffic volumes on the N6 are 5,400 AADT (33% trucks/buses) between Konongo and Nkawkaw, 7,500 between Suhum and Nsawam (19% trucks/buses)[24] and 15,000 in the northern suburbs of Accra, between Achimota and Ofankor[25].

The original highway linked intermediate towns and formed the main highway through many of them. Consequently, with traffic growth, congestion was severe in urban centers resulting in greatly extended travel times, high accident rates and pollution from vehicle emissions.

[24] Data provided by Ghana Highway Authority.
[25] Performance Audit Report on the Construction of the Achimota-Ofankor Road Project', Auditor General, March 2013.

Table 11 Accra-Kumasi toll road – Project details

Project name	Accra to Kumasi Toll Roadway
Location	Accra to Kumasi, Ghana
Length	240 km (141 km to be improved)
Objectives	Faster and safer road travel
	Bypasses towns, relieving congestion and improving safety
	Provision of service areas/rest stops
	Provision for intercity bus services
	Promotes economic growth in most important economic regions of Ghana
	Provides improved accessibility to northern Ghana and land-locked countries
	Vehicle operating cost savings
Construction works	Dualization of 141 km of existing single-carriageway highway
Construction type	Brownfield, new carriageway generally within existing highway alignment
Capital cost	$400m.
Construction period	2014-2017 (subject to parliamentary approval)
Concession period	30 years
Revenue	Real tolls and ancillary services
Project status	Cabinet approval – December 2012. Concession awarded.
Grantor	Ministry of Roads and Highways
Concessionaire	Arterial Toll Roads Company Limited (ATRCL)
	Wellington Trust
Equity partners	Savarino Ghana LLC
	DSC Infrastructure LLC (Dubai)

Source: Various

There has been piecemeal improvement along the highway over many years. The main developments have been the construction of bypasses around larger towns (Suhum, Nsawan and Nkawkaw), upgrading of the highway through the congested suburbs and surrounding districts of Accra and Kumasi, and localized expansion of the road from single to dual carriageway with typically two lanes in each direction in rural areas, and three or four lanes in Kumasi and Accra. Among the major donors for these improvements are the IDA, AfDB, and the Chinese, Danish and Brazilian governments. In recent years, a proportion of Ghana's sovereign oil

revenues have been allocated to improvements to the highway. In 2011, this amounted to $26m. spent on two sections[26].

Figure 13 Accra-Kumasi toll road - Map

Source: LeighFisher

Note: Accra-Kumasi highway is shown in green

Completion of the dualization of the highway remains one of the priorities of the Ministry of Roads and Highways (MRH). However, in spite of the work undertaken, many sections of the Accra-Kumasi highway remain unimproved. Procurement of the important section of Achimota-Ofankor section north of Accra was subject to a recent Government of Ghana (GOG) audit. This found inadequate standards of procurement, including just one bid being evaluated, and a 217% increase in costs.

[26] How a good law may not stop money draining away, Africa Centre for Energy Policy, 2013.

The road fund and tolling in Ghana

The GOG created a Road Fund in 1985 to improve the maintenance and capacity of the nation's highways. The Road Fund currently operates under the provisions of the Road Fund Act 536 (1997). Under this act, the GHA (Ghana Highways Authority) collects all tolls on trunk roads, including the Accra-Kumasi highway. However, there have been instances where local authorities have been collecting tolls, illegally, on trunk roads.

Road Fund revenues come from four sources:

- Fuel Levy
- International Transit Fees
- Road Tolls
- Vehicle Registration and Road Use Fees

In the period January 2008-June 2010 road tolls provided 5% of the Fund's revenues. A recent audit report[27] indicated that there is substantial revenue loss from the toll operations, due to delayed or non-payment of toll receipts, loss of free toll tickets provided for official use and robberies at toll booths. Operation of the 27 toll booths was passed to 17 private contractors in 2005. Following problems, operation of the booths was returned to the GHA in September 2009. The auditors calculated that $0.370m. of toll revenue was owed to the government by the private operators. $4.430m. worth of GHA toll passes, issued for official use, were unaccounted for. GHA is expanding the use of electronic tolling to reduce revenue loss and fraud.

The small contribution of tolls to the Road Fund is partly due to low toll rates. Changes in tolls require parliamentary approval. As elsewhere, there is a reluctance to increase tolls for electoral reasons. Until 2010, tolls were those set by the Road Tolls Regulations, 1999 (L.I. 1660).

Tolls were increased on 1 February 2010, for the first time in 11 years, as a result of the Fees and Charges (Miscellaneous Provisions) Act 2009, Act 793. The tolls charged are the same at all locations, irrespective of the highway distance covered by each tollbooth. With the long elapsed time since the previous toll increase, recent increases were substantial, as shown in Table 13. These resulted in road user

[27] Audit of the revenue of the Road Fund', Ghana Audit Service, January 2012.

protests, although the tolls are still low by international standards. For example, the standard car toll of ₵0.50 ($0.23) compares with a Dakar-Diamniadio total car toll of 1,400 CFA ($2.94), or $0.10 per km., and R3.36 ($0.30) for 10 km in Gauteng, South Africa.

Table 13 Past and current toll rates – Ghana (₵ - Cedi)

Vehicle type	*Previous toll*	*New toll*
Motorcycles	₵0.02	₵0.10
Cars	₵0.05	₵0.50
Pick-ups and light buses	₵0.08	₵1.00
Light goods vehicle and 4x4's	₵0.13	₵1.00
Heavy buses and 2-axle trucks	₵0.13	₵1.50
3-axle trucks	₵0.40	₵2.00
4-axle trucks	₵0.40	₵2.00
5 or more-axle trucks	₵0.50	₵2.50
Agricultural tractor	₵0.05	₵0.50
Agricultural tractor & trailer	₵0.08	₵0.50

Source: MRH, press reports, Road Tolls Regulations 1999

Note:

1. 1 Cedi=$0.465 (1 September 2013).
2. Motorcycle tolls are not currently enforced in practice.

The MRH estimates that the Road Fund provides 60% of the country's annual road maintenance needs. Road Fund revenues were GH¢209 m. ($97m.) in 2011. Lack of funds has resulted in poor maintenance and late payments to contractors with consequent delayed or incomplete projects. In July 2013 the MRH announced that it would halt the award of new road construction contracts because of its outstanding debts to contractors, estimated at $185m.

Ghana's PPP legislative and institutional framework

Overview

Given the poor financial standing of the Road Fund, concerns on past highway procurement and the backlog in highway investment, it is not surprising that PPP procurement appears attractive. However, the legislative and institutional framework for PPP procurement is not yet developed in Ghana. This has resulted in unsolicited bids to construct or improve highways being submitted by the private sector. The MRH currently lack the necessary legislative and institutional frameworks to address unsolicited bids effectively.

The Government of Ghana and MRH have long stated their support for PPP procurement. In 2000, a Ministry for Private Sector Development and a President's Special Initiative were created to promote private sector involvement in infrastructure. PPIAF provided assistance to encourage the private sector involvement by drafting sample agreements, contracts and bidding documents, and gave recommendations on:

- improving the legal framework
- increasing access to finance by tolling and other methods
- identifying suitable projects for private sector participation
- improving the structure of contracts to include performance measures
- strengthening institutions

MRH also published specific guidance for PPP procurement in a 2004 document, *Policy Guidelines for the Implementation of Public Private Partnerships in Ghana*, approved by the Cabinet. However, there was no supporting legislation.

The next major development was the publication of the *National Policy on Public Private Partnerships* by the Ministry of Finance and Economic Planning (MOFEP) in June 2011. There was no supporting legislation but this document was revised and provided detail on PPP guidance. Finally, a draft Ghana Public Private Partnership Bill was published in May 2013.

Legal framework

There is currently no legal framework for PPPs in Ghana. Instead, there is the 2011 MOFEP guidance, and preceding 2004 Guidance, which MDAs have used to ad-

dress unsolicited bids. Individual contracts provide the regulation of each transaction. Similarly, there is no legal basis for tolling by private road operators.

The 2013 Bill will, when enacted, be the basis for future PPP procurement[28]. It will provide the legislative framework to implement MOFEP's 2011 National PPP Policy. It is intended '… to improve the quality, affordability and timely provision of public infrastructure and services in Ghana'. The Bill contains nine sections:

- Objective, scope, application and guiding principles
- Institutional framework
- Project identification, feasibility and approval
- Solicitation and related matters
- Evaluation and selection
- Agreements and related matters
- Complaints mechanism and settlement of disputes
- General matters and transitional provisions
- Interpretation

The scope of the Bill provides the enacting legal requirements for a PPP concession and defines the institutional and regulatory structures and procedures to define, procure, implement, manage and evaluate a PPP concession. When enacted, the Bill will be sufficient for future PPP procurement in all MDAs.

Institutional framework

The 2013 Bill establishes the institutional structure, tasks, roles and responsibilities for PPPs. The institutional framework defined is very similar to that contained in the 2011 Guidance and now operational within MOFEP.

The Minister of Finance, mainly its Public Investment Division (PID), will have overall responsibility for PPP procurement under the Bill. The PID has two units.

- Project Finance & Analysis (PFA) Unit
- PPP Advisory Unit (PAU)

The PFA Unit is responsible for controlling the PPP process and investment appraisal. The unit

- screens all PPP projects to ensure compliance with the Bill
- obtains views of the ministry's Debt Management and Budget Divisions

[28] The Bill is available at www.mofep.gov.gh.

- verifies that PPP maximizes Value for Money
- verifies that the project is financially viable, economically sound and ensures value for money
- assesses the robustness of the PPP agreement over the long term
- verifies the proposed solicitation process
- determines any government support required
- advises on the need to consult any other regulatory authority

The PAU supports MDAs in developing and managing PPP transactions, to

- provide general guidance and assistance to MDAs on PPPs
- guides MDAs in engaging advisors for structuring transaction, preparation of documents, evaluation, negotiation and implementation
- defines the output and measuring the performance of advisors

Provision is also made for PPP units to be established in MDAs. MDAs have to register a project with the PID before a full feasibility study can be undertaken. Registration requires a Project Concept Note and Pre-feasibility Report.

Parliamentary approval is required for larger PPP projects. Smaller projects can be approved by District Assemblies. An Approval Committee, chaired by the Minister of Finance and including a representative from the President's Office as well as the heads of relevant MDAs, has to approve each prospective PPP. The Director of the PID is the Secretary, but not a member, of the Approval Committee.

The prescribed stages in the procurement process are typical of other jurisdictions:

- market sounding
- requests for Expressions of Interest (EoI)
- evaluation of EoIs
- optional pre-bid meeting
- Issue of Request for Proposals
- submission and opening of bids
- evaluation of bids
- notice of contract
- negotiation with Preferred Bidder
- approval prior to contract finalization
- Financial Close

MOFEP is currently preparing updated guidance on PPP procurement, and standardized documentation, for MDAs.

The procurement process is summarized in Figure 14 from the 2011 Guidance.

Accra to Kumasi toll road

Figure 14 2011 PPP Process - Ghana

	TASKS	RESPONSIBLE INSTITUTION (S)	TIMELINE
1	Project identification	MDAs/MMDAs supported by PAU shall identify PPP with NIP, PIP, GSGDA	In line with PIP and NIP schedule
2	Pre-feasibility study/concept paper/business case	MDAs/MMDAs or supported by consultants or appropriate group	Within 60 working days after (1) or prior to (1)
3 (a)	Approval for pre-feasibility/concept paper	PMUs of MDAs or the appropriate authority	After completion of (2) or after (1) with already prepared (2) within 10 working days
3 (b)	Submission of pre-feasibility/concept paper to MOFEP PID	PMUs of MDAs or the appropriate authority	After 3(a)
4 (a)	Registration of project and review of pre-feasibility study	MOFEP-PFA/DMD/Legal/Budget	After 3(b) within 35 days
4 (b)	Screen of PPPs to ensure consistency with NIP, PIP, GSGDA		
4 (c)	Verify & justify PPP option		
4 (d)	Financing scheme and PPP type		
4 (e)	Ensure compliance of PPP process		
5 (a)	MOFEP approval of pre-feasibility & project viability	MOFEP-PFA/DMD/Legal/budget approval committee	
5 (b)	Requesting for full feasibility after 5 above	Contracting Authority	Depend on submission of contracting authority
6 (a)	MOFEP review and approval of full feasibility report	MOFEP-PFA	Within 30 working days
6 (b)	Subject to threshold of Project cost up to GH₵ 50,000,000	Approval committee	
6 (c)	Subject to threshold of Project cost above GH₵ 50,000,000	Cabinet/Parliament approval	Within 60 working days
6 (d)	MMDAs approval ceiling:	General assembly of MMDA	Depending on MMDAs schedules
	District assembly not exceeding GH₵0.5m.		
	Municipality not exceeding GH₵1m.		
	Metropolitan Assemblies not exceeding GH₵2m.		
7 (a)	Procurement:		
7 (b)	For prospective bidders & Review of project documentation – draft PPP agreement	MOFEP-PFA	Within 25 working days
7 (c)	Design fair, transparent, competitive, cost-effective process	Contracting authority	Depends on submission by contracting authorities
7 (d)	pprocurement with activities undertaken under the Public Procurement Act and the scope of PPP law		
7 (e)	Involve the use of local content and transfer of technology		
	Procurement:		Depending on MDA/MMDA schedules
(i)	Contracting authorities submit evaluation report		Depends on submission of evaluation report
(ii)	Review & recommendation of report		Minimum 10 days
8	PPP Agreement/concession, approval		Minimum 30 days

Source: 'National Policy on Public Private Partnership (PPP)', MOFEP, June 2011

Project advocacy and development

The Accra-Kumasi highway was one of the projects assessed by PPIAF for possible PPP procurement during their technical assistance to the Ghanaian roads sector in the early 2000's. In 2004, the Ministry of Roads and Highways issued an RFP for a BOT-procured highway. However, it is understood that the preferred bidder was rejected after the World Bank's due diligence.

An unsolicited proposal was then submitted by Arterial Toll Roads Company Limited (ATRCL) for the dualization (two lanes each direction) of all unimproved sections of the Accra-Kumasi highway through a design, finance, build and operate (DBFO) PPP concession. ATRCL is a Ghanaian registered joint venture created by the investment company Wellington Trust (Canada), construction and project development company Savarino (U.S.) and design and project management company DSC International (Egypt). The concession included construction of 141 km of dual carriageway with associated grade-separated intersections, rest areas, five toll plazas and intercity bus integration.

Together with previous and current construction works, the concession would provide full dualization of the 240 km Accra-Kumasi highway. Travel times would be reduced from 5½ to 2½ hours and there would be substantial vehicle operating cost and road safety benefits. The estimated construction cost in 2011 was $400m. The construction period was 48 months and the concession period 30 years. A maximum of five toll plazas would be operated charging 1 Cedi for 20 km (2013 prices) by car, the same rate as on the existing Accra-Tema toll road.

ATRCL was awarded the concession by the Government of Ghana in November 2005, its first PPP highway project. The finalization of the concession was then delayed by political and administrative processes and concerns, lack of institutional and legislative frameworks, and public sector skill and capacity shortages. The Bank of Ghana conducted a due diligence review on ATRCL's proposal and approved it in 2008. The Financial Close was not concluded by the time of the December 2008 elections.

The new government was committed to increased road investment and PPP procurement. Negotiations continued with the new administration and Cabinet approval was obtained in June 2010. The project was then submitted to parliament for approval but, following parliamentary concerns, further negotiation was required. A Draft Concession Agreement was developed in 2011 and Cabinet ap-

proval was again obtained in December 2012 with the project re-submitted to Parliament for approval.

During this period, the MOFEP was implementing a more formal and rigorous PPP procurement process. This was supported by advisors and funding from the World Bank and other development partners. It resulted in the drafting of the 2013 PPP Bill and the establishment of the necessary institutions to review and process prospective PPP projects. The Accra-Kumasi highway PPP project had been proposed before the creation of the new institutions, particularly the PID and its PAU and PDA units. However, the project now became subject to the new PPP procurement process.

In line with the June 2011 guidance and PPP Bill, an inter-Ministerial Team was established and has been seeking to resolve the issues causing parliamentary concern and delayed implementation of the project. They submitted their report to the Minister of Roads and Highways in July 2013 with the intention of re-submitting the project to Parliament.

The project caused the following concerns:

Lack of competitive procurement: A main concern is the unsolicited nature of the bid and the consequent lack of a competitive procurement process.

Business Case: It has been commented that the business case for carrying out the project through PPP was not properly developed due to the lack of PPP procurement guidance and previous experience within the MRH and available to ATRCL in preparing its documentation.

Tolling: The existing tolls are low, even after the 2011 increase, with only three tollbooths along the highway. There are concerns that the concession tolls rates will be unaffordable to some existing users (e.g. public transport and small trucks) and politically unpopular.

Lack of an untolled **alternative:** There is no realistic untolled alternative to the highway in many locations. In other jurisdictions (e.g. South Africa), existence of an untolled alternative is required for a toll concession to be approved.

Local users: Road users living near tollbooths will be disadvantaged unless exemptions are provided.

In addition to the above concerns, delays in implementation have been caused by:

Political changes: ATRCL had to negotiate with three different administrations. At each election, Ministers changed. This has led to the successive re-making of the case for the project and re-negotiation of concession terms.

Lack of institutional or legislative framework: The PPP procurement of the **Accra**-Kumasi highway was initially undertaken in the absence of a PPP policy or guidelines. Guidelines have been in place since 2004 and revised, along with establishment of the enabling institutions, in 2011. There is still no legislative framework for PPP procurement, although a Bill has now been published.

Weak procurement practice in the GHA: The Auditor General, in two audits, has been critical of the Road Fund administration and of the procurement of a section of Accra-Kumasi highway under traditional procurement. This results in concerns of similar weaknesses in new projects.

Lack of relevant experience & expertise**:** ATRCL proposal was the first PPP highway procurement. MRH lacks the experience and relevant skills to undertake this form of procurement, causing delays in the decision-making process.

Unsolicited proposals: ATRCL's proposal was unsolicited. Unsolicited proposals present particular difficulties for road administrations. The difficulties are more severe where, as in Ghana, there is no statutory procedure for evaluating or approving them. MRH received three unsolicited proposals for the upgrade of the Accra-Tema Motorway. However, this project will now be procured through the new competitive PPP process with advisor support and Request for Proposals.

Development partner support

Development partners provided assistance in promoting private finance in highways in Ghana, both in developing the PPP institutional and legislative framework and in assisting GHA and MRH in procurement. The PPIAF support to the Roads Sector project helped the MRH in promoting private sector involvement in highways during the early 2000's. This contributed to the 2004 PPP Policy Guidance and to the initial review of ATRCL's unsolicited bid.

The **World Bank Ghana PPP Diagnostic Study** played an important role in developing the 2011 MOFEP PPP guidance. The current $30m. **World Bank/DfID PPP Project**, commenced in 2012 and due for completion in 2016, has been instrumental in developing the 2013 PPP Bill. This project builds on previous work by the

World Bank and DfID in establishing a PPP framework. The objective is 'to improve the legislative, institutional, financial, fiduciary and technical framework to generate a pipeline of bankable PPP projects'. In 2013, the PID was being assisted by three DfID and six World Bank-funded advisors.

The World Bank Group has also assisted in the development of the Accra-Takoradi highway as a PPP project. Advisors have recently been appointed to undertake a pre-feasibility study of this highway. Three other road projects are planned as PPP projects:

- Refurbishment and expansion of Accra-Tema motorway
- Construction of overpass on Teshie Link, Accra
- Western Corridor Roads Phase 1 (Elubo-Sunyani)

Preparatory work

As the ATRCL proposal was unsolicited, the Government of Ghana had not undertaken preparatory work. ATRCL undertook or commissioned consultants for the necessary studies to support their business case.

Rights-of-way have been arranged for earlier and current upgrades of sections of the highway. A recurring problem in road projects in Ghana has been delays in payment of compensation to resettled and other affected residents. The authorities has, on occasions, been slow to pay PAPs and this has led to protests, and concerns and opposition from those along sections planned for upgrade.

ATRCL appointed technical advisors to develop the project design and business case. Consulting firms have undertaken much of the engineering design work and provided traffic & revenue and tolling advice. ATRCL has also commissioned an Environmental and Social Impact Study, safety audit and economic appraisal.

Summary

Key project features

Project purpose: Dualization of the Accra-Kumasi road has clear economic benefits and is a long-standing objective of national highway policy. Current 5½ hour travel times are expected to be reduced to 2½ hours and substantial

improvements in road safety are likely to accrue. The environment of towns and villages along the highway will be improved through bypasses. The existing highway has been upgraded in a piecemeal manner and the project would provide a highway of consistently good quality between the two major commercial centers of Ghana.

Legislative framework: The framework for PPP procurement in Ghana has evolved rather slowly since the early 2000's. The process has been led by MOFEP, with support from development partners. Guidance was provided in 2004 and 2011, but without supporting legislation. MOFEP Memoranda of Understanding to MDAs have complemented the guidance. A Draft PPP Bill was published in 2013, generally consistent with the 2011 Guidance. This was then further revised with the intention of presenting it to parliament.

Institutional framework**:** MOFEP has provided the lead on PPP procurement, but has lacked legislative support. Ghana did not have a PPP Unit until the PID of MOFEP was established in 2011. The PID now provides oversight, and gives advice to MDAs, on the PPP procurement process. The inter-ministerial PPP Approval Committee is chaired by the Minister of Finance with the President's office represented.

Road Fund financing: The Road Fund has been unable to finance maintenance adequately. The Fund exists primarily to finance road maintenance, although upgrading and rehabilitation of roads is also within its remit. It receives revenue from tolling at 29 tollbooths but, in spite of a five- to ten-fold increase in tolls in 2011, these revenues are still relatively small. Lack of funding has resulted in a backlog of payments to contractors. Improvements on the Accra-Kumasi highway have been largely funded by donors.

ATRCL's unsolicited bid: The initial 2003 PPP procurement process for the dualization of the Accra-Kumasi road failed, but prompted an unsolicited bid from the joint venture company ATRCL. ATRCL have maintained their commitment to the project since 2005, in spite of many delays. The protracted procurement has, in part, been caused by the lack of a PPP framework and, in particular, the lack of guidance or law on processing unsolicited bids. Future road investments, such as Accra-Takoradi, will be procured in line with the 2011 Guidance, which should soon receive legal backing.

Project financing: It has not been possible to finalize financing without a concession agreement. Funding is likely to be a mix of equity from the sponsors with the majority through loans from international financial institutions, im-

port-export banks, regional development banks, and commercial banks or financial institutions. The extent of private sector finance attracted is unclear at this stage.

Transferable experience

Delays in creating the legal and institutional framework: It has taken 10 years to establish a legislative and institutional framework for PPP procurement in Ghana with enabling legislation not yet enacted. The lack of a framework has contributed substantially to the delays in procuring the Accra-Kumasi and other roads.

Advisor support: Financial and advisor support has been key to the development of the PPP framework from the early 2000's. However, this advice has not enabled the timely adoption of a framework.

Unsolicited bids: There has been a clear desire by the private sector to pursue development of the Accra-Kumasi and other road projects through PPPs. In the absence of a formal PPP procurement process, this desire has been expressed in various unsolicited bids. These unsolicited bids present particular difficulties for procuring administrations, especially where there is no enabling legislation or policy guidance. They are demanding in terms of administration resources and require treatment in a fair and transparent manner.

Unsolicited bids, whilst highlighting issues to be addressed by the evolving framework, may have distracted the administration from its priority of creating a PPP framework. The private sector may also lobby for the project in a manner that results in quick project delivery, possibly in conflict with emerging PPP processes.

PPP Unit reporting: The PID is Ghana's PPP Unit and reports to the Minister of Finance, rather than to the President's office. Given the need for the PID to coordinate inputs from various ministries, it will be interesting to see if the lack of direct Presidential authority is a hindrance to the work of the PID.

Weak procurement practice: The Auditor General has pointed out weak practices over the administration of the Road Fund and procurement of a section of the Accra-Kumasi highway. Although the GHA has rejected the criticism on procurement, it may still raise concerns within the MOFEP/PPP unit on the ability of the GHA to procure efficiently and fairly. IFIs and private sector bidders will also require the procurement process to be fair and transparent.

Untolled alternatives: The Accra-Kumasi Road is the only reasonable route between the towns it serves, although there are alternative routes where it by-passes towns. In South Africa and elsewhere, tolling is only permitted where an untolled alternative exists. Consideration should be given to road user choice and affordability where no untolled alternative will be available.

6. Lekki-Epe expressway

Project description

The Lekki-Epe Expressway Toll Road was awarded to the Lekki Concession Company Limited (LCC), by the Lagos State Government (LSG) in 2006 as a 30-year concession. Phase I of the Lekki-Epe Expressway (also known as the Eti-Osa Lekki -Epe Expressway and the Lagos Infrastructure Project) concession road is now constructed as a 49.4 km dual carriageway highway. It has three lanes in each direction and runs most of the length of the Lekki-Epe peninsula in eastern Lagos (see Figure 15). The Expressway continues, as a single carriageway, east of the concession for a further 15 km to the town of Epe. The Expressway has at-grade intersections, which are roundabouts within the concessioned section.

Table 12 Lekki-Epe Expressway – Project details

Project name	Eti-Osa Lekki-Epe Expressway
Location	Lagos, Nigeria
Length	49.4 km
Objectives	Relieve congestion on key urban corridor between CBD and Victoria Island Promote economic development, with the Lekki free trade zone
Construction works	Construct a 3 lanes each direction dual carriageway
Construction type	Greenfield
Capital cost	$450m. (includes future 20 km Coastal Road)
Construction period	January 2007-March 2012
Concession period	30 years
Revenue	Real tolls
Project status	Partially open
Grantor	Lagos State Government
Concessionaire	Lekki Concession Company Limited (LCC)
Equity partners	Asset & Resource Management Company Ltd (ARM) African Infrastructure Investment Managers (AIIM) Hitech Construction Company Limited

Source: Various

The concession required the upgrading and expansion of the previous highway with construction costs to be recovered largely through tolling. The Expressway is being constructed in phases with the intention that mainline toll plazas would be opened as each section was completed. Three toll plazas would be operational on full completion. Phase II of the concession would construct a 20 km coastal road. The average daily traffic at the western Admiralty Circle toll plaza is approximately 70,000 vehicles per day.

Table 12 provides summary details of the concession and a map of the concession is given below.

Figure 15 Lekki-Epe Expressway- Map

Source: Google Maps, LCC, LeighFisher.

Note:
1. Lekki-Epe Expressway is shown in green.
2. Red marks indicate the east and west ends of the concession section.

The concession highway serves the relatively affluent and rapidly-expanding Lekki suburb. The eastern expansion of Lekki is planned to be a large mixed commercial and residential area, known as the Lekki Free Trade Zone (FTZ). The Lekki FTZ is eventually intended to cover 155 sq. km and include a new airport, to be located near Epe at the eastern end of the Expressway. The Lekki FTZ is a 2006 initiative of the Lagos State Government (LSG), supported by investment from the Government of China.

The Phase 1 concession, effective from November 2008, comprises four sections:

- Section 1: km 0-6, mainly three lanes each direction opened July 2010, Admiralty Circle toll plaza opened 18 December 2011
- Section 2: Km 6-15, two lanes each direction opened 2 March 2012

- Section 3: Km 15-21.9, two lanes each direction. Not yet constructed
- Section 4: Km 21.9-49.36, two lanes each direction. Not yet constructed

Table 13 gives the tolls charged at the Admiralty Circle toll plaza, the only operational toll plaza on the Expressway. With 15 km open, the N120 toll for cars equates to N8.00/km ($0.05/km).

Table 13 Lekki-Epe Expressway toll rates (2013 - Naira)

Type of vehicle	*Cash*	*SwiftPass*	*eTag*
Motorcycles	50	48	45
Cars	120	114	108
4x4, minibuses & pick ups	150	143	135
Minibuses	80	76	72
Light trucks and 2-axle buses	250	238	225
Heavy trucks and 2 or more heavy (loaded) axles	350	333	315

Source: LCC

Note:

1. 1 Naira=$0.0062 (1 September 2013).
2. SwiftPass is a pre-paid contactless card, requiring stopping at toll booths. eTag is electronic payment by transponder that does not require stopping at toll booths.

Legislative and institutional framework

Overview

The Lekki-Epe Expressway Toll Road concession was awarded by the Lagos State Government, rather than the federal government. However, the PPP legislative framework was first established at the federal level. Both the state and federal legislative and institutional frameworks are described below.

National framework

The Federal Ministry of Transportation obtained the power to apply road tolls under the Highways Act 1971. It did not permit private companies to impose tolls.

Greater private sector involvement in public infrastructure projects was first promoted legally with the Public Enterprises (Privatization & Commercialization) Act in 1999. This Act provided the basis for full and part privatization of government undertakings, and greater commercialization of other institutions. Schedules attached to the law, and subsequent supplements in 2000 and 2001, listed the public enterprises for part and full privatization and for commercialization. The Act created the National Council on Privatization (NCP) to make policy and approve guidance and the entities to be privatized or commercialized. It also created the Bureau of Public Enterprise (BPE) as the secretariat of the NCP, which implements privatization processes on its behalf.

Within the roads sector, Act No. 7 2002 created FERMA (the Federal Roads Maintenance Agency). FERMA is responsible for maintaining federal roads and the Act provided funding from central government, donors and tolls. The 2002 Act gave FERMA the ability to set guidelines for, and the authority to enter into, Maintain, Operate & Transfer (MOT) concession contracts with the private sector. A 2007 amendment gave FERMA revenues from a 5% fuel tax, with FERMA receiving 40% of the tax revenues and the remainder being allocated to state road maintenance agencies.

Four road sections have since been identified by FERMA for MOT concessioning with 26 companies prequalified:

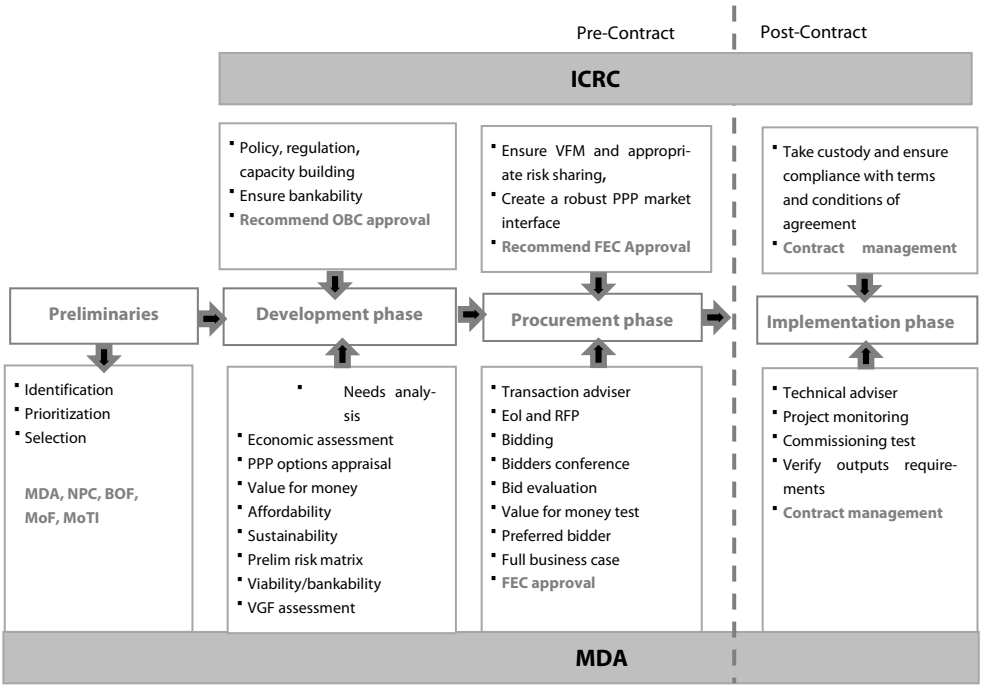
- 9th mile-Otukpa road
- Mokwa-Tegina Birnin Gwari-Kaduna road
- Abeokuta-Ibadan-Ife-Ilesha road
- Jos-Bauchi-Gombe road

Recent draft legislation (National Road Fund Bill and Federal Roads Authority Bill 2013) will, if enacted, see FERMA's work combined with road construction in a new Federal Roads Authority. Road financing will be through the creation of a Road Fund. The 2013 bills re-state the government's commitment to greater private sector participation in road finance.

The general PPP framework for Nigeria was established, at the federal level, by the Infrastructure Concession Regulatory Commission (ICRC) Act 2005. The ICRC is the national PPP unit based in the capital Abuja and, under the 2005 Act, is responsible for policy guidance and for preparing, procuring and implementing all

federal PPP projects. It is also responsible for ensuring compliance of PPP concessions with the law. The contracting authority remains the promoting MDA.

Figure 16 Federal PPP Procurement Process, Nigeria



In July 2009, ICRC issued the National Policy on Public Private Partnerships. This summarized the government's policy on PPP procurement. It provided further details in four supplements on:

- The procurement process
- Obtaining Value of money from PPP
- Project risk
- Roles and responsibilities in PPP contracts

In view of slow progress in developing a PPP in Nigeria, ICRC has pointed out that no enforcement powers are provided under the 2005 Act. It also notes that infrastructure master plans, overall and at the MDA level, remain to be developed to guide investment decisions. Lack of progress can also be explained by the fact that individual projects had not been subject to financial modeling or value for money assessments and there had been a general lack of preparatory work in developing

the business cases. No federal PPP road projects have been launched to date. The national policy procurement process is shown in Figure 16.

Lagos State framework

The Lekki-Epe Expressway concession is an initiative of the Lagos State Government (LSG). LSG was an early promoter of private sector finance in Nigeria and the Lagos State Roads, Bridges and Infrastructure (Private Sector Participation) Development Board Laws of 2005 and 2007 set out a framework for PPP procurement in highways. The Office of Public Private Partnerships was created in December 2008 as '… a one-stop shop for private parties and (to) provide hands-on technical assistance on projects from inception to execution as well as the development and delivery phases'. The 2007 Law was superseded by the Lagos State Public Private Partnership Law 2011, which extended the remit of the Office of PPP from roads to all government sectors.

The Office of PPP resides within the Governor's Office and its Director-General reports to the LSG Executive Council. All project procurement, including toll rates, must be approved by the Office of the Executive Governor and ratified by the House of Assembly. The Office of PPP is defined as the procuring entity by the associated Lagos State Public Procurement Law 2011.

The Office of PPP coordinates MDAs and private sector partners. Amongst its functions are to:

- initiate PPP procurements and appoint advisors
- grant concessions to private investors for the design, construction, operation, management, control, maintenance, rehabilitation and financing of public infrastructure or public assets
- negotiate with prospective private partners
- inspect and monitor concessionaires to ensure compliance with the concession agreement
- approve tolls

Prospective PPP projects are generated by MDAs or as unsolicited bids from the private sector. The Office of PPP advises MDAs on projects and, if adopted for procurement, an inter-MDA project coordination committee is formed.

The Lekki-Epe Expressway procurement largely preceded the establishment of the LSG institutional framework. The 2005 Act, actually signed in November 2004, provided the legal basis for the Expressway procurement. It also established a Private Sector Participation Roads Agency, within the Ministry of Public Works, which had responsibility for the Expressway procurement. The Roads Agency was mainly comprised of Ministry of Public Works staff with little PPP experience.

Project advocacy and development

The Lekki-Epe Expressway was originally commissioned in 1983, by the Lagos State Governor, to provide an arterial road connection to the expanding suburbs on the Lekki peninsula. With growth in traffic, the road was in need of expanded capacity and, in 2001, the LSG Ministry of Public Works identified a project to upgrade and expand the Expressway. It was one of four highway routes prioritized, the others being the Fourth Mainland Bridge, Maryland Link Road and the Coastal Road. The growing focus on private sector participation in infrastructure investment, encouraged by the lack of public sector investment funds, made the Expressway project a good candidate for PPP procurement.

The initial documentation drafted was largely based upon traditional procurement contracts and lacked content that the private sector expected for a PPP process. Consequently, private sector interest was limited. However, ARM (Asset and Resource Management Company Limited), a Lagos-based investment and financial services company, showed an interest in the project and sought other private sector partners. Initially, the company was appointed by LSG, under a Memorandum of Understanding (MoU), to provide advisory services. Subsequently, a further MoU enabled ARM to undertake the feasibility studies.

With the positive outcome of the feasibility studies, ARM created a Special Purpose Vehicle, the Lekki Concession Company Limited (LCC) to bid for, construct and operate the Expressway. Two bids were received. LCC was awarded the concession and detailed negotiations began in the first quarter of 2005 with the Concession Agreement signed on 24 April 2006.

The lack of experience in the Roads Agency, insufficient advisory support, a disparity in negotiating skills between public and private partners and political pressures may have resulted in insufficient time to evaluate and negotiate best terms for the public sector, including termination clauses.

With the establishment of the LSG PPP institutional framework in 2008, the Expressway project was passed to the Office of PPP for implementation. Key Ministry Roads Agency staff also transferred to the Office, to retain knowledge of the project procurement and technical aspects. Financial Close was achieved in November 2008. Construction began in January 2007 with Section 1 (km 0-6) opening on 18 December 2011 and Section 2 (km 6-15) on 15 March 2012.

The concession contract was a design, build, finance, operate and transfer agreement. LCC had full construction, traffic and operations risk, LSG has Right-of-Way risk with Force Majeure and change of law risks carried by both parties.

Technical elements

ARM commissioned consultants to undertake a pre-feasibility study of the Expressway in 2003 and a full feasibility study in 2004. Detailed design was completed in 2006. Studies included traffic & revenue and Environmental and Social Impact Assessment (ESIA) studies. The design and construction contract was awarded to a local construction company.

Financing

At the time the project was developed, Nigeria was perceived as a high-risk country by international private investors and obtaining private finance for projects, such as the Expressway, was considered challenging. However, a total funding of N46.8bn. (USD 290m. at 1 September 2013 exchange rate) was raised for the project and Financial Close was achieved at the height of the Global Financial Crisis (GFC) in November 2008. The financing structure is given in Table 14. The overall debt-to-equity ratio was 83:17.

The local lender syndicate comprised five Nigerian banks. Private financing was made possible by a sovereign guarantee from the Federal Government. This was obtained in February 2008 and ensured termination compensation to lenders. Political risk was covered by the Export Credit Insurance Corporation of South Africa. As financing was required in Naira the currency risk was covered by hedging through Standard Bank.

Table 14 LCC Finance Structure

Investor	*Finance (Naira bn.)*	*Tenor (years)*	*Rate*	*Type*
EQUITY				
AIIM	**7.9**	-	-	-
DEBT				
Lagos State Government	5.0	20	Fixed	Mezzanine
AfDB	10.0	15	Floating	Senior
Local lender syndicate	12.9	12	Floating	Senior
Standard Bank	11.0	15	Fixed	Senior
TOTAL	**38.9**	-	-	-
TOTAL FINANCE	**46.8**	-	-	-

Source: LCC

The local lender syndicate comprised five Nigerian banks. Private financing was made possible by a sovereign guarantee from the Federal Government. This was obtained in February 2008 and ensured termination compensation to lenders. Political risk was covered by the Export Credit Insurance Corporation of South Africa. As financing was required in Naira the currency risk was covered by hedging through Standard Bank.

Construction of Section 1 of the road began in advance of Financial Close. Finance for this advanced work was from equity, supported by a guarantee from LSG.

The project financing was impressive for a number of reasons:

- 68% (N31.8bn., $197m.) of funding was from private sector sources. This scale of private finance was made possible by public sector guarantees at the federal and state level
- Financial Close was achieved at a time of great uncertainty in the global financial markets
- Substantial currency and political risks were accepted and covered by South African banks
- 12-year loans were obtained from local banks who had no previous experience of such long tenors

Key factors in achieving this success were:

- Consistent political and financial commitment from State and federal governments through changes in administrations
- The strong credentials of the sponsors and equity partners
- A clear justification for the project, meeting growing demand in a congested travel corridor within a major African city

Implementation and status

Construction and rights-of-way

The project required the widening of the existing highway boundaries and delays have occurred in resettlement of Project Affected Persons (PAP) and re-location of utilities. The right-of-way (ROW) has not been fully protected from encroachment and a power line had to be relocated to permit widening. Delays by LSG in providing a ROW have led to increased construction costs and the delayed opening of a new toll plaza with consequent loss of revenue. LCC has submitted compensation claims for the losses incurred. Problems have also been encountered with erratic power supply, which is outside the control of LSG. LCC have responded to this by installing generators.

The first two of the four sections of Phase 1 are complete. Most of the work on the remaining two eastern sections is now complete.

Tolling

Tolling has always been contentious on the Expressway. The imposition of tolling on a previously untolled highway created much opposition, mainly due to the toll rates but also because of long queues at the toll plaza.

The concession agreement provides for three toll plazas. Each was to be opened after completion of construction works on the associated road section. Tolling was planned to commence at the Admiralty Circle toll plaza (Section 1) on 3 January 2010. However, LSG requested that LCC delay tolling and, on 30 December 2010, LSG announced an indefinite postponement of tolling, citing residents' concerns and the need for an alternative route. LSG agreed to provide 'shadow' toll revenues to compensate LCC for the loss of revenue. Tolling was finally introduced on 18 December 2011 and resulted in protests by residents and drivers.

Section 2 of the concession was completed in March 2012. However, tolling did not commence at the second (Conservation) plaza because a 3.4 km untolled alternative route had to be provided first. The intended commencement of tolling at the plaza on 16 December 2012, after completion of the alternative route, did not occur as LSG again announced an indefinite suspension of tolling. LSG provided shadow toll payments to LCC for lost revenue at Conservation plaza.

By September 2013, tolling was continuing at the Admiralty Circle toll plaza with many complaints over the length of peak period queues. Tolling had not been introduced at the Conservation toll plaza and LSG was continuing to provide LCC with shadow toll revenues for this plaza.

Buy-back

On 28 August 2013, LSG announced that it would buy back the Lekki-Epe Expressway concession rights by purchasing all LCC's shares. The reasons LSG cited for this were:

- assumptions underlying the Concession Agreement changed 'drastically', including devaluation of the Naira and increased construction costs.
- LCC intended to increase tolls at the Admiralty Circle plaza, from N120 to N144 for cars, and introduce tolling at the Conservation and Campus plazas. This was required to cover higher interest payments, maintain availability of the road and fund completion of Sections 3 and 4.

LSG's need '…to take full control over the determination of the toll rates in order to continue to make it affordable for road users'.

LSG stated that, in these circumstances, they had no option but to buy back the concession on the terms specified in the Concession Agreement. LSG has emphasized that the concession has not been terminated or cancelled, contrary to reporting in the media. It has also re-iterated 'its unflinching commitment to the adoption of PPP Model' and that it "…shall continue to ensure the sanctity of contracts, as in this case, in sustaining investors' confidence".

As of 1 October 2013, LCC is now owned by LSG who stated that LCC will continue to operate as a commercial entity, maintaining and completing the concession road. Its acquisition is to be funded by a bond issue and LSG intend to complete the Expressway project by direct funding.

Summary

Key project characteristics

Project purpose: The Lekki-Epe Expressway was an existing arterial road serving a relatively affluent and expanding area of Lagos. The PPP concession was to increase the capacity and improve the condition of the road, and reduce congestion on the route. The project serves a clear travel need, especially with major land use developments planned for the eastern Lekki peninsula.

State government grantor: The project was promoted by the Lagos State Government, rather than by federal authorities. The support of the federal government was eventually required, and obtained, to provide a sovereign guarantee to lenders. In spite of a lack of experience, the State government successfully procured a major PPP project.

Legislative and institutional framework: The procurement commenced before any PPP framework was in place, although there was a policy commitment to PPPs. Development of the legal and institutional framework lagged behind the Expressway procurement process, but there was sufficient legal backing by late 2004 for a procurement to take place.

Public and private sector commitment: Given the emerging framework, the lack of public sector expertise and the global financial crisis, it is impressive that Financial Close was achieved in late 2008. This reflects well the adaptability and determination of private and public partners to deliver the project through a PPP.

Private finance: 68% of the project financing was obtained from private sources. This is high given the level of risk of investing in Nigeria perceived amongst international investors. The success of the financing reflects the quality of the project sponsors and equity holders. The mitigation of political and currency risks, and the sovereign guarantee provided by the federal government, were also important.

Right-of-way: LSG was unable to secure the ROW fully and this resulted in delays and additional costs to LCC.

Tolling: The imposition of tolls on a previously untolled, but now improved, road generated strong protests. Longer travel times, due to queuing at the toll plaza, further exacerbated public reaction to the concession. The late provision of an untolled alternative route, and political reluctance to support toll-

ing, led to the postponement of tolling and compensation payments from LSG to LCC, including shadow tolling.

Buy-back: With LCC's intention to raise tolls at the only operating plaza, and to introduce tolling at the other two plazas, LSG felt compelled to buy back the concession. It seems that private sector partners will be fully compensated and LSG has re-stated its commitment to PPP in spite of the failure of the Expressway PPP.

Transferable experience

Late development of legal **and institutional framework:** The project was developed largely in advance of the associated state PPP framework. In spite of the commitment of Ministry Roads Agency staff, the lack of a PPP unit to provide key expertise will have delayed the procurement process and put the public sector partner at a negotiating disadvantage. This may have reduced the value of money of the procurement and contributed to the subsequent buy-back.

Mixed project impacts for users: The concession provided some clear benefits to road users, by increasing capacity and therefore accommodating future traffic growth. However, in contrast to a greenfield road where travel time savings are often large, the introduction of tolling has both added considerable expense to users and increased travel times, due to queues at the toll plaza.

Private finance: The project demonstrates that substantial private finance can be attracted to PPP toll roads in SSA. The key factors for the Expressway were strong sponsors and equity partners, sovereign guarantees and mitigation of political and currency risks.

Political commitment **to tolling:** The introduction of tolling on a previously untolled road aroused strong local protests. The LSG had been reluctant, from the outset, to antagonize road users by supporting LCC's intention to impose tolls. Tolling is often unpopular but must be supported by the Grantor. The lack of support for tolling is likely to impact negatively on LSG's ability to attract private finance in future.

7. Conclusions on key issues and policy guidance

PPP procurement issues

The three case studies differ greatly in their procurement processes, extent of private sector financing and project outcomes. The Dakar-Diamniadio toll highway was procured to international standards, following the development of strong legal and institutional frameworks, through an effective PPP competition and subsequent Preferred Bidder negotiations. However, it failed to attract substantial private finance. The Accra-Kumasi road has retained private sector interests in spite of repeated delays resulting, in part, from being an unsolicited bid and from the late development of a PPP framework in Ghana. The Lagos-Lekki-Epe Expressway was successfully concessioned, and now greatly constructed, with a large component of private finance backed by sovereign guarantees. However, the concession was ultimately purchased back by the public sector to avoid popular opposition to the introduction of tolling on this previously untolled, but now improved, road.

It is difficult to generalize from the diverse experience of these three concessions. However, a number of common issues are apparent and, although each new project has its particular challenges, the following are likely to apply to other PPP projects in Sub-Saharan Africa.

PPP policy: Governments are encouraged for internal budgetary constraints, to promote private sector involvement in road development. Political commitment and leadership are required at the highest level as well as a plan to implement a PPP policy. The creation of a PPP Unit, reporting directly to or at least strongly backed by the Head of State, will provide the necessary concentration of expertise and inter-ministerial coordination to develop and implement a PPP procurement process. A suitably funded PPP Unit can harness resources, from within government and external sources, to create the legal and institutional framework that will enable fair and efficient procurement.

Legislative framework: For most purposes, a legal framework will be required, especially where there is a policy commitment to a continuing PPP procurement program. Without a legal framework, MDAs may be subject to frequent unsolicited proposals, which, as noted below, can be difficult to manage. Senegal was the only case study reviewed here where a legal and institutional

framework was established in advance of the first major procurement. This pre-existing legal framework greatly facilitated the DDTH procurement.

Institutional framework**:** The procurement process with the institutional framework should ideally be developed early and in parallel with the legislative framework. A PPP Unit, if created, will drive the procurement process, coordinating inputs from MDAs and providing information to bidders and decision-makers. The PPP Unit should operate under the highest-level political authority.

Project preparation: Once a PPP procurement process is defined, projects will be advocated by MDAs and procured through a PPP competition. The onus is then on the public sector to prepare the necessary documentation that bidders require for their proposals. This documentation will be sourced from both MDAs and specialist consultants. The time and cost to prepare this material needs to be considered when drafting the procurement plan.

Developer advice and support: PPP procurement is relatively complex, costly and lengthy. It requires a range of expertise that is not normally available within the public sector, including legal, financial, insurance, environmental and traffic forecasting expertise. Depending on the size of the market for a PPP, countries can develop internally this expertise or outsource the services. Development partners can provide valuable expert advice and financial support to governments in developing their PPP programs. Early support from development partners will greatly assist the development and application of a well-structured PPP program and individual project delivery.

Unsolicited proposals: The lack of an effective PPP procurement framework may encourage private sector companies to submit unsolicited proposals, especially where there is a political commitment to greater private sector involvement. Unsolicited proposals are difficult and expensive to manage in a fair and efficient manner. Private sector parties may also exert pressure on MDAs through political lobbying, weakening their negotiating position. Policy and law should ideally specify the treatment of unsolicited bids. A comparison of the three case studies shows that an unsolicited proposal takes longer to implement.

Right-of-way: Provision of a clear right-of-way for construction has been a problem in all three case studies. With early advisor support, the DDTH promoters were able to obtain funding for a large-scale resettlement program, which provided substantial secondary benefits to the project in terms of im-

proved housing and environmental benefits. If the right-of-way is not provided on time, construction delays will increase the cost to the public sector.

Private finance and risk allocation: Political and currency risks are perceived to be particularly high in SSA countries. However, the Lekki-Epe and Accra-Kumasi roads have both attracted substantial private finance. Risks can be mitigated by commercial or development partner hedging and with sovereign guarantees to lenders. In the three case studies reviewed, construction and traffic risks have generally been acceptable to the private sector.

Negotiation: The public sector is usually at a disadvantage when negotiating with a preferred or unsolicited bidder. The private sector is typically better resourced and more experienced. For example, bidders may often employ professional negotiators to finalize the terms of the concession agreement. A dedicated PPP Unit, with support from expert advisors and negotiators, will help obtain the best terms for the grantor.

Tolling: The imposition of tolls is likely to provoke opposition from residents and road users. Political resolve is required to support the introduction of tolling and the periodic increases in tolls built into the concession agreement. Political support for tolling needs to recognize, from the outset, that opposition will occur and be prepared to support fully the concessionaire's rights when required.

Malpractice: A concern in road construction and maintenance procurement is corruption in various forms. Corruption is widespread in many countries, including those in Africa. However, it is more difficult for contractors and companies to pay bribes to obtain contracts or provide finance under increasingly strict legislation and enforcement. A PPP requires transparency and, therefore, tends to promote less corrupt procurement. To be effective, there needs to be a truly competitive and transparent procurement process. Perception of corruption deters private sector participation. The availability of donor finance from jurisdictions with low enforcement on bribery and personal gain by local officials and decision-makers can hinder the advocacy of PPPs.

Competing financing sources: A more general problem in advocating PPP procurement is the availability of alternative funding sources. In recent years donor countries, such as China and Middle Eastern countries, have been willing to provide substantial finance for construction (of new) or improvement of roads. The ready availability of such finance can make PPP procurement

less attractive as it can be seen as a relatively costly and slow means of procurement compared to these financing sources.

Private finance requirements

Requirements

Access to private-finance requires an understanding of concerns from private lenders who are willing to invest large sums of money in PPPs. Private finance is provided in the form of debt from lenders and equity from project sponsors. There is a perception that private finance will be difficult to raise for PPPs in SSA countries. However, international banks have been willing to invest in toll roads of the region. Commonly cited lender concerns and requirements are given below.

Unfamiliar jurisdictions: The large number of jurisdictions in Africa presents a challenge for international banks and financial institutions who lack knowledge of local legal, political or other conditions. This is particularly true for smaller economies and jurisdictions with no history of PPP procurement. South Africa-based banks **are** increasingly active throughout Africa, their regional offices giving them local knowledge and market intelligence. Early project promotion can reduce concerns within the investment community.

Fairness and transparency: There is a concern that corruption may influence procurement. Private finance requires assurance that the procurement will be fair and transparent. This is best gained when the country has already the experience of successful implementation of a PPP contract. For the first procurement, development partner support, IFI financing and a clear procurement framework and process can address these concerns.

IFI support: Support from international financial institutions indicates that the project has strong merit, the bidding process will be undertaken to international standards and the project delivered. Obtaining their early support will encourage private finance.

Sponsor quality[29]**:** Lenders will seek high quality project sponsor as indicated by the experience, reliability and creditworthiness of the consortium members. The project sponsor typically includes a major construction company

[29] The term 'Sponsor' refers to the private sector consortium bidding for the concesssion. It is sometimes also used to refer to the public sector agency responsible for the project.

with an international reputation for winning and delivering similar PPP projects. Lenders will assess the technical and financial capability of consortium members to provide guarantees on completion of the project.

Political risk: The long concession period of toll roads requires continuing political commitment to the rights of concessionaires through changes in government, even where construction work or toll increases are unpopular. The World Bank MIGA organization can mitigate this risk and sovereign guarantees be provided.

Currency risk: Currency fluctuations are a major concern for foreign investors, with toll road revenues obtained in local currency but debt servicing often being in foreign currency. The government may offer protection against adverse exchange rate movements so that this risk is mitigated. The toll rate escalation formula may also provide for adjustments to reflect exchange rate fluctuations. Finally, international banks can provide hedging at a cost. The Grantor's Financial Advisor can recommend the most appropriate means to mitigate currency risk for a project.

Traffic risk: Where concessionaire payment is from toll revenues, traffic and revenue forecasts are critical. Users' willingness to pay tolls is key for African toll roads. However, providing the assumptions made on this are reasonable, traffic risk is not particularly high for African projects. Indeed, the high economic growth rates, and low vehicle ownership, typical of African economies can provide high traffic growth rates, which are attractive to investors.

Competing sources of finance: There may be a number of sources of finance available to a project promoter. Private finance, which may be relatively expensive, can be avoided or reduced if cheaper financing is available from donors, IFIs and ECAs. Nonetheless, encouraging private finance will help promote long-term participation from private finance in a state's road investment program.

Construction risk: Risk of construction cost overruns is common to all new build toll roads. The quality of the sponsor SPV is important and lenders will seek construction companies with strong experience in similar projects, especially within the region. Right-of-way problems can be significant. Lenders and sponsors will seek a clear plan and commitment by the Grantor to provide the right-of-way in a timely manner.

Termination risk: Concession periods are typically long (20-30 years) in order to allow sufficient time for the equity and loans, used to construct the road, to

be repaid from user charges and/or grantor performance payments. This creates a significant risk a public or private partner will default on their contractual obligations, causing the termination of the concession. These obligations may include failure of the Grantor to make performance payments or failure of the concessionaire to provide a road of adequate quality. Termination provisions are included in the agreement to protect and compensate partners from the failure of any party to the PPP agreement to fulfil its contractual obligations.

A concession may also be terminated voluntarily by mutual agreement of the Grantor, the concessionaire and its lenders.

The European PPP Expertise Centre (EPEC) has provided guidance on the treatment of termination and force majeure risks in PPP contracts[30]. This guidance notes the reluctance of all partners to terminate a concession agreement and the need to establish a framework for negotiation and resolving disputes, to avoid termination, within the concession agreement.

Contract enforceability: Lenders and sponsors require assurance that the PPP contract will be enforceable for the duration of the concession. Evidence of past commitment to contracts will encourage private investment. Otherwise, mitigation of this risk may be required as for political risk.

Risk allocation and mitigation: Project risks are described in the *PPP in Infrastructure Resource Center for Contracts, Laws and Regulations*[31]. Lenders seek to ensure that they are protected from any risks that might limit the concessionaire's ability to service debt repayments. They will review the concession agreement to ensure that project risks are allocated to the partner most able to manage them, which is best practice for all PPP projects. Most project risks are borne by the grantor or concessionaire who may mitigate them through various forms of insurance, e.g. currency, inflation and interest rate hedging or political risk guarantees provided by the World Bank Group's MIGA (Multilateral Investment Guarantee Agency).

[30] *Termination and Force Majeure Provisions in PPP Contracts*, EPEC, Luxembourg, 2013. Paper available on the European Investment Bank website at www.eib.org

[31] See pppirc.worldbank.org

Allocation of concession revenues

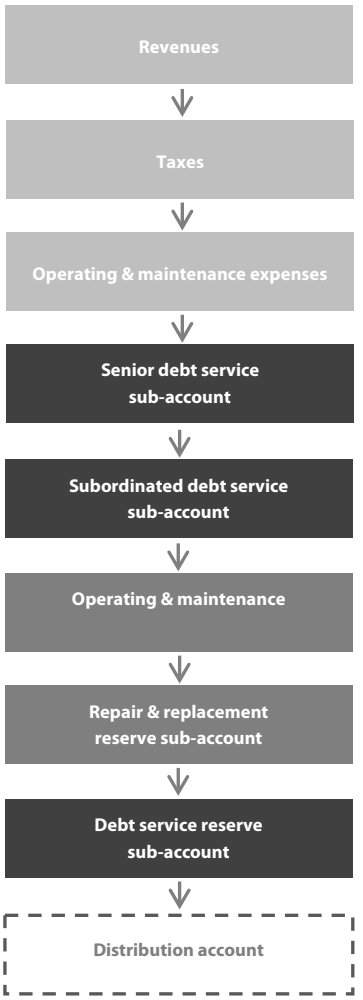
Private finance, either as loans from lenders or equity provided by sponsors, is repaid from concession revenues. For toll roads, these are mostly in the form of toll revenues or government performance payments. The project cash flow, as forecast in a financial model, will determine the ability of the sponsor to service debts as planned. Coverage ratios are computed to assess the adequacy of project revenues to service debts each year. Repayment of private finance occurs according to the priority ('seniority') of the lenders and shareholders call on concession revenues. A typical 'cash waterfall' is illustrated in Figure 17.

The first call on the concession's post-tax operating profit are the senior lenders, followed by subordinated (junior and mezzanine) lenders. Shareholders have the last call on operating profit. The relative seniority of debt and equity determines lenders and shareholders' differing views on project risk.

A more detailed description of infrastructure project financing is provided in the 2013 IFC report 'Fostering the development of greenfield mining-related transport infrastructure through project financing'[32].

[32] *Fostering the development of greenfield mining-related transport infrastructure through project financing*, IFC, April 2103. The paper is available at www.ifc.org

Figure 17 Concessionaire 'Cash waterfall'



Source: *Fostering the development of greenfield mining-related transport infrastructure through project financing*, IFC, April 2013.

PPP advocacy

Advocacy of PPP requires policy-makers to understand fully the advantages and disadvantages of this procurement method. Typically, once a government has decided to use PPP for road procurement, it will establish procedures and institutions to assess whether PPP is the best means to procure a particular project. It is

generally accepted that PPP procurement is appropriate for some, but not all, road investments. The following describe the advantages and disadvantages attributed to PPPs that can be used to advocate for PPP when the procurement and financing methods for a road project are discussed and decided.

Advantages

Minimizing whole life costs: Bidders seek to minimize the capital and operating costs over the concession period, including the return of the asset in the required condition on termination of the concession. This encourages bidders to optimize the whole life costs of the asset in their design rather than minimize construction costs. Optimizing whole life costs taking into account the revenues from the concession is also a way to minimize the risk and is a different approach from the traditionally procured road construction project where the contractor seeks to maximize its profit.

Efficient risk allocation: Tasks, and associated risks, are allocated to the public or private sector partner best able to manage them, providing greater efficiency.

Competitive bidding: Projects are won by the most competitive bidder and competition should ensure good value for money for the public sector.

Timely and fully completed projects: The concessionaire is incentivized to complete the construction works at the earliest opportunity so as to commence revenue collection or performance payments. Any costs due to delays usually accrue to the concessionaire. In contrast, some traditionally procured projects remain partially complete or suffer significant time overruns due to contractor difficulties and late payment, or non-payment, of contractors' fees by the public sector.

Capacity building: Public sector staff gain skills and knowledge that will enhance career development and corporate capability. These may lead to more efficient, and innovative, procurement and working practices in the future.

Improved performance: Availability of payments, other performance payments and toll revenues encourage private partners to provide and maintain assets that are cost-effective, attractive to users and economically efficient.

Technical innovation: Experienced international concessionaires will apply the latest techniques in constructing and maintaining roads. These techniques are less likely to be available from local suppliers.

Greater public sector discipline: PPP concession contracts require public sector partners to adhere to strict payment and contractual conditions. Political interference and delayed or partial payments by government are not acceptable.

Improved project selection: Private sector parties, particularly private finance, will avoid projects lacking clear intrinsic merit. Traditional procurement may allow projects with less merit to be constructed.

Reduced malpractice: A PPP requires a transparent and fair procurement process. The scope for corruption is much reduced as international companies usually operate under strong, enforced anti-corruption laws.

More development bank funding: PPP procurement is generally encouraged by development partners. States may increase the likelihood of development bank funding by adopting a PPP procurement approach.

Disadvantages

Lengthy and costly procurement: PPP procurement is often longer and more costly than traditional procurement, both for the public and private sectors. The relatively high transaction costs incurred by bidders are ultimately reflected in their bid costs and may affect the degree of competition[33].

Specialist expertise: A wide range of specialist advisors, including legal, taxation, financial, insurance, environmental, technical and traffic forecasting, are required for both public and private sector parties, and for lenders. However, this may result in improved public sector skills.

Resentment at user charging: PPP projects often require road users to be tolled. This will usually be electorally unpopular and will require a strong and sustained commitment to the concession from politicians. Resentment may increase if the concessionaire achieves high profitability or poor performance.

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[33] It is difficult to obtain reliable estimates of the transaction costs incurred by the private sector as they are commercially confidential. The OECD source estimates average public sector costs at 3.7% of total project cost. An EIB report gives UK public sector costs at an average of 3.5% of project costs (*Transaction costs in Public-Private Partnerships: A first look at the evidence*, 2005). This report estimates private sector costs at 1.9% of project costs for each bidder with a further 1.9% in negotiation costs for the successful bidder.

Reduced economic benefits: Unregulated tolls may result in reduced economic benefits. Traffic is often relatively insensitive to tolls (the percentage reduction in traffic is less than the increase in tolls) and the concessionaire can raise revenues through tolls. The reduction in traffic is a benefit to the concessionaire, in terms of maintenance costs, but economic benefits also reduce. This effect is usually mitigated by the public sector setting fixed or maximum toll rates.

Concessionaire failure: Forecast project revenues may not be realized and the concessionaire may become insolvent. Most concessions are operated by Special Purpose Vehicles, often owned by a consortium of construction and operating companies. Lenders and the government do not have recourse against these companies in case of default on debt service payments or non-performance of the concession requirements.

Restrictions on government initiatives: Concession agreements may restrict public sector investments, which affect the financial performance of the concession; for example, improving competing untolled roads. This may require re-negotiation of elements of the agreement as the project environment changes through time.

Higher interest rates: Some governments are able to obtain funding at lower rates than private lenders; for example, by issuing bonds or through IFI funding.

SME participation: Concessionaires may be less likely to employ smaller, local construction and maintenance companies, due to the scale of the project and lack of familiarity with the local business environment.

Reference on private sector participation

Title	Author, Publisher, Date	Comment	Website
Public-Private Partnerships - Reference Guide	PPIAF,2012	Detailed guidance on PPP issues, requirements and implementation. English and Russian versions.	www.ppiaf.org
Online Toolkit for PPP in Roads and Highways	PPIAF, 2009	Similar scope to Ref. 1 above but with more detailed case studies and worked examples. Also available as PDF. English and French versions.	www.ppiaf.org
Public Private Partnerships: Principles of Policy and Finance	Yescombe, Butterworth-Heinemann, 2007	Not reviewed.	
Working Together: Assessing PPP in Africa	Farlam, South African Institute of International Affairs, 2005	Summary review of PPP projects and issues, specific to Africa. Includes case studies, with two from the transport sector (N4 Maputo Corridor toll road and Maputo port).	www.oecd.org
How to engage with the Private Sector in Public-Private Partnerships in Emerging Markets	Farquharson et al, PPIAF/World Bank, 2011	Similar scope to Ref. 1 above.	www.ppiaf.org
Suivi de contrat dans le secteur des transports	APIX-SA/ World Bank, 2009	Recommendations on the institutional framework for PPPs in Senegal; for APIS-SA and Direction de l'autoroute à péage (DAP), the key government agencies implementing a PPP.	www.ppiaf.org
Public-Private Partnerships in Africa, Part I – Infrastructure	PPIAF, 2012	Brief summary of SSA experience in PPP, based upon three examples (N4 Maputo Corridor toll road, Maputo port and Lekki-Epe toll road).	www.consultancyafrica.com
Emerging Partnerships: The top 40 PPPs in emerging markets	PPIAF/ IFC/Infrastructure Journal, 2013	Set of brief PPP project descriptions, including Henri Konan Bedié Bridge, Côte D'Ivoire and Lekki-Epe toll road, Nigeria.	www.ifc.org
Road and Rail Financing Conference	UNECE, 2013	Various papers, but none specific to SSA road financing.	www.unece.org
Routledge Companion to Public-Private Partnerships	Routledge, 2013	Not reviewed	www.gbv.de
Public-Private Partnerships in Infrastructure Resource Center	World Bank/PPIAF/IFC/ Norwegian Trust Fund for Private Sector and Infrastructure	Online toolkit with similar scope to Ref. 2. Specific section on roads PPPs with templates and examples. English and French versions.	www.worldbank.org
Attracting Investors to African Public-Private Partnerships - A Project Preparation Guide	World Bank/ICA /PPIAF, 2009	Similar scope to Ref. 1 above. English and French versions.	www.worldbank.org
Private Participation in Infrastructure (PPI)	World Bank/PPIAF	Online sector and region papers, project database.	www.worldbank.org
SADC-DFRC PPP Network	SADC-DFRC	Online compilation of PPP project, legislation, guidance and other documents; covering SADC, other African and international practice.	www.sadcpppnetwork.org
Study on PPP Legal & Financial Frameworks in Mediterranean Partner Countries	Facility for Euro - Mediterranean Investment and Partnership, EIB, 2011	Similar scope to Ref. 1 above. English and French versions. English and French (Volume 1 only) versions.	www.eib.org

Title	Author, Publisher, Date	Comment	Website
A Guide to Guidance: Source-book for PPPs in TEN-Transport	European PPP Expertise Centre, EIB, 2010	Similar scope to Ref. 1	www.eib.org
Public-Private Partnership Handbook	Asian Development Bank	Similar scope to Ref. 1	www.apec.org.
A Guidebook On Public-Private Partnership In Infrastructure	United Nations ESCAP, 2011	Similar scope to Ref. 1	www.unescap.org
Understanding Options For Public-Private Partnerships In Infrastructure	Delmon, World Bank, 2010	Description of the alternative forms of PPP con-tracts.	www.worldbank.org

Note: The documents are available on the respective websites

Source: SSATP, LeighFisher.