



Experience of Implementing Transportation PPPs in India

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August 6, 2015

Experience of Implementing PPPs in India

India has witnessed successful PPPs across several infrastructure sectors – Power, Telecom, Roads, Ports, Airports, Urban Infrastructure, etc., both at the National & Provincial level

Structure of this Presentation – Case Study of PPPs in
Roads / Highways

PPPs in Roads / Highways

Delhi – Noida Toll Bridge

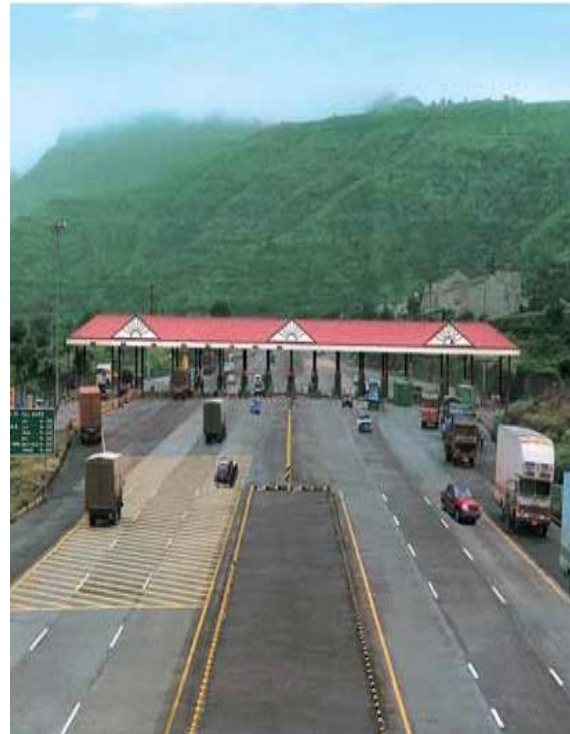
- April 1992, MoU signed between IL&FS, NOIDA and Delhi Govt., to develop a bridge over river Yamuna on BOOT basis
- Steering Committee with representatives of GoUP, GoD, MoUD Gol, IL&FS, was set up
- In 1996 SPV, NTBCL was established to implement the project
- In Nov. 1997, BOOT based Concession agreement was signed:
 - Concession Period of 30 years or till 20% IRR is achieved
 - Initial Toll fees determined by committee; to be revised annually based on inflation indexation
 - Non-compete within 5 km for 10 years
 - Govt. support on land acquisition & Clearances / approvals
- Project cost of US\$ 100 mn, financed through 70:30 Debt:Equity ratio; one of the first non-recourse lending to Project SPV
- EPC and O&M Contracts to reputed players – project operational since Feb. 2000



- ***Current annual revenue ~ US\$ 16 mn***
- ***Listed on the Indian stock exchange with a market cap of US\$ 100 mn***

Mumbai – Pune Expressway : Implemented by a State Government Corporation

- 94 km, 6 lane of access controlled concrete expressway, connecting the commercial capital of India, Mumbai, to the manufacturing hub of India, Pune
- Bid out as a BOT with a guaranteed return of 20% (and land, fiscal incentives, etc.)
- Only one company bid, at a project cost of INR 38 bn (almost twice the estimated project cost)
- Government of Maharashtra (the provincial Government) set up MSRDC, as a 100% owned limited liability company, to undertake this and other projects in the state
- Developed, Constructed, Operated & Maintained by MSRDC,
- Constructed at a total cost of INR 21.36 bn (US\$ 475 mn); project completed in 2001
- Annual toll revenue in 2003 ~ US\$ 17 mn; Toll Rate = US\$ 2.3 for a car per trip



Mumbai – Pune Expressway : Securitisation

- In 2004, MSRDC undertook a securitisation transaction :
 - O&M of Mumbai-Pune Expressway for 15 years
 - Including strengthening & widening (4 lane) of NH4 connecting Mumbai & Pune (111 kms) and O&M of the same for 15 years
 - Right to entire toll revenues for 15 years (est. US\$ 23 mn p.a. after NH4 construction)
 - (Highest) Upfront one time fee – Reserve bid of US\$ 210 mn

- Winning bid – US\$ 213.5 mn

Reserve bid was based on Traffic Growth at CAGR of 4%; actual traffic growth significantly higher

- In 2014, MSRDC bid out US\$ 114.5 mn of additional construction and US\$ 167 mn of fee payment to MSRDC for 8 years and 8 months

Annuity Projects

In 2002-03 NHAI awarded 8 projects on Annuity basis

- Panagarh – Palsit (West Bengal): 64 km four-laning; expected to cost US\$ 70 mn; 15 year concession; L1 quote by Gamuda-WCT : US\$ 16 mn (second round; first round L1 quote : US\$ 20.6) => US\$ 250,000 per km
- Tuni-Anakapalli (Andhra Pradesh) : 60 km four-laning; Semi-annuity L1 quote : US\$ 6.9 mn => US\$ 110,000 per km



Cost advantages of breaking the developer – construction contractor nexus

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Cost advantages of breaking the developer – construction contractor nexus

- Tindivanam – Tambaram (Tamil Nadu) : 93 kms; GMR semi-annuity L1 quote : Rs. US\$ 9.5mn; Project Cost : US\$ 85 mn; Concession period – 17.5 years (Total Payment ~ US\$ 330 mn)



Cost – Benefit analysis of Annuity Projects ?

Model Concession Agreement (MCA)

MCA drafted and adopted in 2000 (and modified in 2008) laid out the following framework for Highway projects in India:

- PPP on Design Build Finance Operate Transfer (DBFOT) basis
- Govt. of India prescribed per km user fee; MCA provided for indexing user fee up to 40% of Wholesale Price Index (WPI) plus 3% (*average 7-8% p.a.*)
- Phased development of Highways based on standards specified by India Roads Congress
- Focus on Output specifications
- Concession period to be determined based on carrying capacity
- Selection of concessionaire based on open competitive bidding; **on minimum grant or maximum premium**
- Detailed risk allocation, based on ability to manage
- Handing over 80% of required land and obtaining all environmental clearances are conditions precedent to be satisfied by the Authority prior to Financial Close
- Substitution rights to lenders and other clauses to provide adequate comfort to lenders

Fiscal Incentives to Developers

- Profits are subject to 100% deduction for 10 consecutive assessment years, with a period of the first fifteen years of the concession
- Deduction up to 40% of income from financing infrastructure projects is deductible
- Subscription to equity shares or debentures by a public company to be utilised wholly and exclusively for the purpose of developing, maintaining or operating an infrastructure facility is eligible for deduction up to 20% of the amount subscribed
- Import of certain identified high quality plant and machinery for construction, is exempt from import duty
- Import of bitumen is permitted under Open General Licence
- External Commercial Borrowings are permitted up to 35% of the project cost

NHAI – Outsourced Model of Project Development & Monitoring

Preparation of Detailed Project Report (DPR)

DPR Consultant

- Traffic study & projections
- Design, Engineering, Project Cost estimation
- Selection based on standard process and documents

Bid Process Management / Procurement

Transaction Advisor

- Preparation of bid documents
- Support in financial closure
- Selection based on standard process and documents

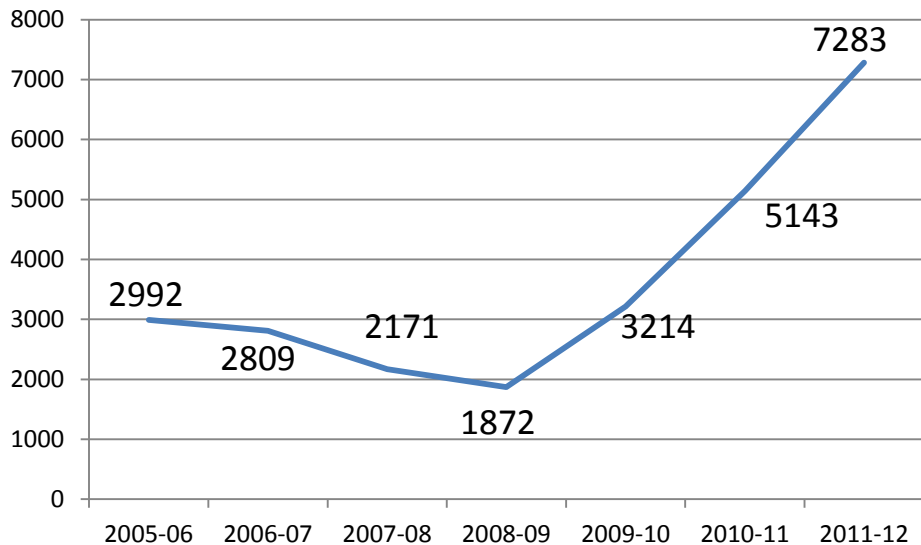
Construction Supervision & Monitoring of Operations & Maintenance

Independent Engineer

- Construction supervision, including testing
- Selection based on standard process and documents

Successful Model of PPPs in Highways

National Highway BOT Projects Awarded in Kms



- MCA first used in 2002, for project cost above US\$ 17 mn
- More than 20,000 kms of road projects have been developed under DBFOT till 2014
- As of 2014, about 300 projects completed and another about 300 projects under implementation

Delhi Gurgaon Expressway – the first BOT Road project with “Premium”



Total Revenue (2012-13) :
US\$ 33 mn

Of which US\$ 20 mn came
from the Delhi-Gurgaon
border toll plaza

- 27.7 Kms; 8 lane access controlled highway, with 11 flyovers and over-passes
- 20 year BOT concession, including construction period
- Commenced operations in Jan 2008
- Concessionaire : Consortium of Jaypee & DS Construction
- Upfront Project Cost : US\$ 150 mn
- Negative Upfront Grant : US\$ 13.5 mn

- 3 Toll Plazas : Delhi-Gurgaon border (32 lane toll plaza); near International airport and at 42nd Milestone
- Toll of INR 20 per PCU
- Total about 180,000 PCUs per day

Delhi Gurgaon Expressway

Termination Notice was issued to the Concessionaire by NHAI for the following three reasons:



- Failing to decongest the Expressway;
- Failing to finalize the operation and maintenance plan (O&M Plan); and
- Committing fraud in the form of re-financing the Project without getting NHAI's approval the Project.

Current Status :

- Lead Lender, IDFC, owns 74% of the SPV and the consortium of private concessionaire owns the balance 26%
- IDFC is responsible for management of the project; has appointed a O&M operator
- Abolished toll at the Delhi-Gurgaon border toll plaza

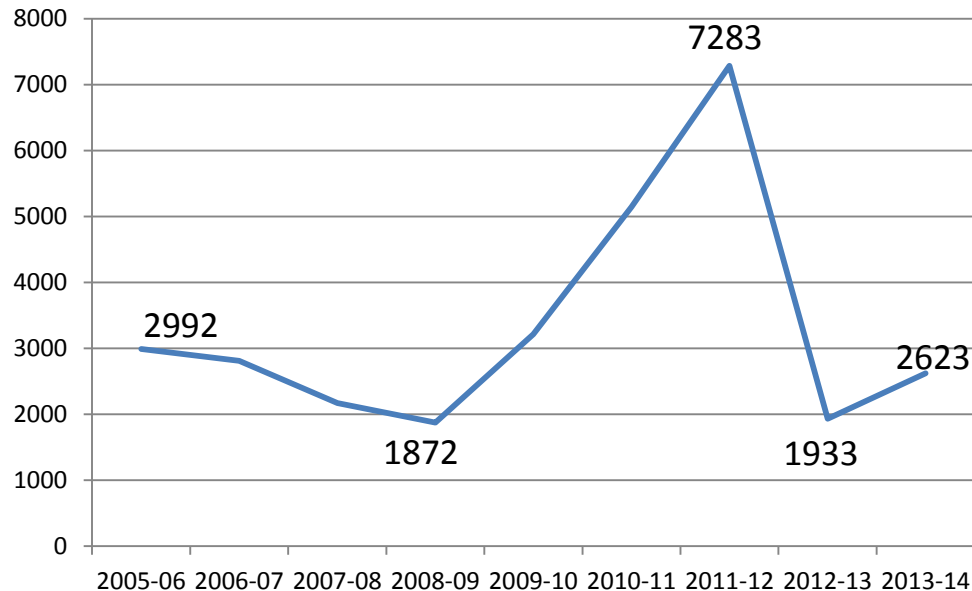
Kishengarh-Udaipur-Ahmedabad – the country's largest highway project

- 555 km highway project, estimated to cost US\$ 1.25 bn
- Negative grant or Premium of US\$ 103 mn
- Concessionaire : GMR Infrastructure Ltd.
- Project awarded in July 2011
- **GMR exits project in January 2013**

- Many other developers exited / terminated BOT projects with NHAI between 2012 - 2013
- Re-scheduling of payment of Premium (approved by UPA II Govt for 13 projects)

Challenges in DBFOT Projects

National Highway BOT Projects Awarded in Kms



- Aggressive bidding due to irrational exuberance
- Crowding out of reputed developers
- Bids based on aggressive traffic projections that didn't play out
- Delays / Non-availability of unencumbered land (RoW)
- Delays / Non-availability of environmental clearances
- Weakening financial position of developers / high gearing resulting in increasingly stringent norms for disbursement by lenders

Operation, Maintenance & Tolling (OMT)

- Fusion of two distinct contracts : Tolling contract and a contract for O&M, for select completed projects
- OMT concession agreement, for a definite concession period (*typically 9 years*)
 - Operation and maintenance of the project section of the road (defined periodic and performance based maintenance)
 - Toll collection
 - Construction of defined project facilities, like Toll Plaza, street lighting, etc.
 - Any major maintenance works (if required; project specific)
- Concessionaire Selection based on “Concession fee offered to Authority or Grant support required”
- Key risk of Traffic and Toll Collection risk transferred to private concessionaire
- 14 projects, totaling 2360 kms have been concessioned on OMT basis; all with shared concession fee
- Benefits : Better maintained roads; efficiency in toll collection; reduced toll revenue leakage; service orientation

(Some) New PPP Models under Consideration

- Modified Annuity : Grant + Annuity + Toll
 - Concessionaire to partly finance, construct, toll and maintain
 - Authority to pay part of construction cost as Grant during construction and balance as Annuity
 - Separate payment of O&M as % of project cost (independent of toll revenues)
- Hybrid PPP : Interest Free Loan + Toll
 - Concessionaire to (partly) finance, construct, toll & maintain
 - Authority to offer interest free loan (part-finance)
 - Concessionaire to repay interest free loan after pre-determined traffic levels have been reached
 - Quantum of interest free loan as the bid parameter
- BOT model, with construction being financed by Authority
 - Authority finances construction
 - Concessionaire constructs, maintains and tolls
 - Concessionaire pays annual concession fee (from toll revenues)

Thank You

Toll Rates for 4-lane National Highway

in 2014

Vehicle Category	Rs. / Km.	Thai Bhat / Km. (approx.)
Car, Jeep, Van, Light Motor Vehicle	0.65	
Light Commercial Vehicle	1.05	
Bus or Truck	2.20	
3-axle Commercial Vehicle	2.40	
Heavy Construction Machinery, multi-axle vehicles (4-6 axles)	3.45	
Over-sized vehicles (7 or more axles)	4.20	

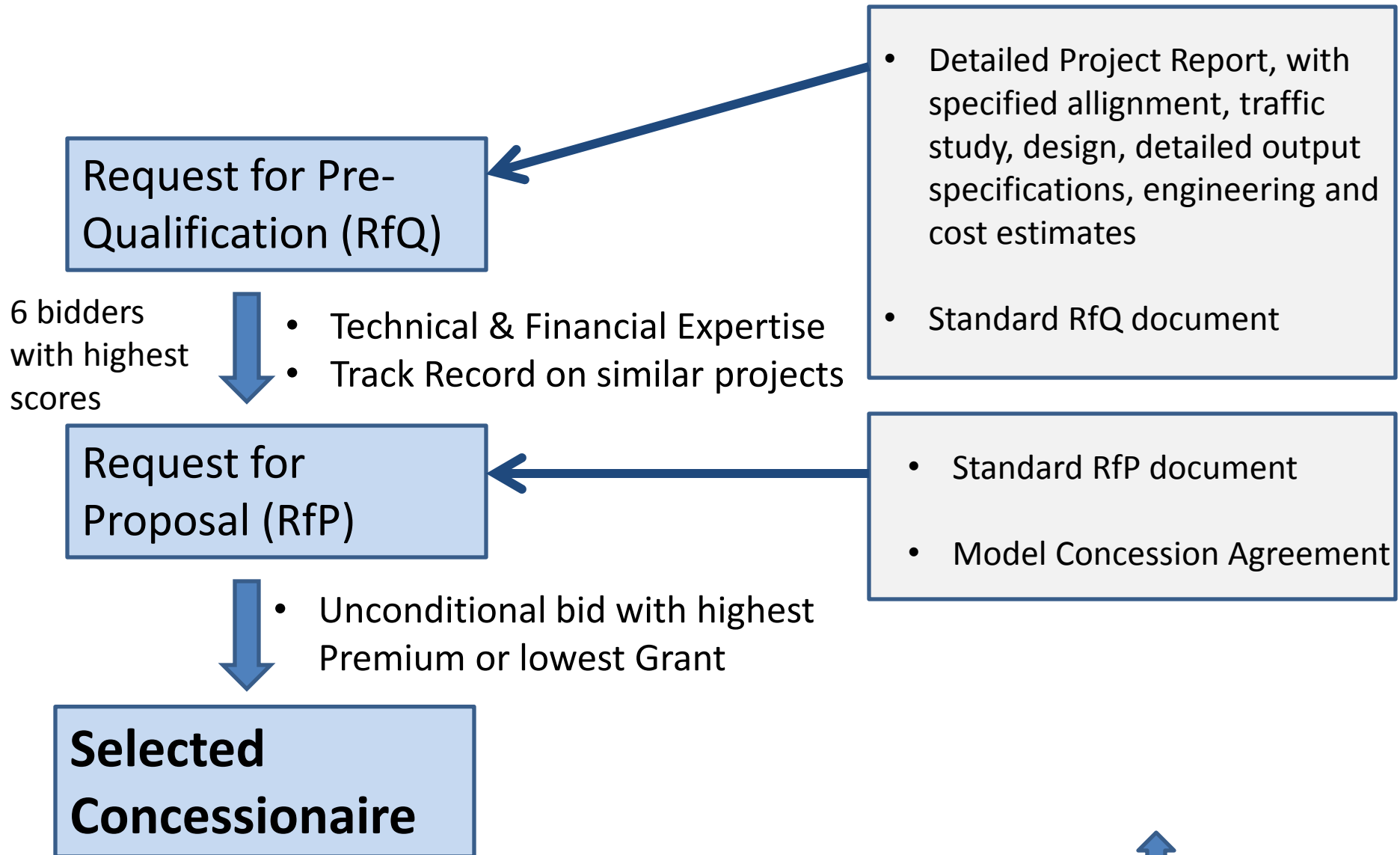


Selection of Private Concessionaire : Bid Process

Request for Pre-
Qualification (RfQ)

- Detailed Project Report, with specified alignment, traffic study, design, detailed output specifications, engineering and cost estimates
- Standard RfQ document

Selection of Private Concessionaire : Bid Process



Model Concession Agreement : Allocation of Key Risks

Risk	Description	Party to bear the risk
Construction	Clearly defined construction process, tests and output specifications; and Pre-specified maximum duration of construction	Private concessionaire
Operation & Maintenance	MCA defines specifications of (toll plaza) operations and road maintenance, including ridership quality to be maintained, frequency of regular maintenance and re-surfacing, etc.	Private concessionaire
Financial Risk	Arrange adequate finance at appropriate terms and conditions, within the time frame defined in the agreement (“Financial Close”)	Private concessionaire
Traffic Risk	Toll Rate pre-specified; increase in toll rate linked to WPI; Volume of traffic and composition of traffic Defined treatment in case traffic exceeds design capacity; also, increase in concession if traffic falls significantly below projected traffic	Private concessionaire
Land & Regulatory approvals	Authority to acquire required unencumbered land; Provide support and assistance for securing all required approvals and clearances	Authority

