Presentation
on
“Financing of PPP Projects”
at
A P HRDI, Bapatla, Guntur Dist
on Monday, December 4, 2017

by
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Topics Covered

• Brief Background
• PPP Models
• Project Structuring & Financing
• Support from GOI
• Key Risks and its Computation
• Consequences of Risks - Examples
• Case Studies Urban Infra Projects
Brief Background
PPP Cell – Its Role in Finance Department

- Project Advisory to PPP Proposals
- Advisory to Sector Policies, Bills, Guidelines, etc
- Capacity Building
- Knowledge Products
- Handholding activities
- MIS Activities & Website Maintenance
Process Involved in Development of a PPP Project

- Initiation Stage
  - Identification of a PPP Project
  - Appointment of Transaction Advisor
  - Pre-Feasibility Study
  - Feasibility Study – Structuring a Project
  - Project Affordability
  - Value for Money Assessment

- Bidding Stage
  - Preparation of Draft Tender Documents
    - Request of Qualification, Request for Proposal, Concession Agreement
  - Issue of Tender Documents
  - Evaluation of Bids and Selection of the Bidder
  - Contract Finalization and Award

- Construction Stage

- Operation Stage
<table>
<thead>
<tr>
<th>Sn</th>
<th>Sector</th>
<th>Initiation &amp; Bidding</th>
<th>Construction</th>
<th>Operation</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>Amount (Crs)</td>
<td>No</td>
<td>Amount (Crs)</td>
</tr>
<tr>
<td>1</td>
<td>Airports</td>
<td>2</td>
<td>173</td>
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<tr>
<td>2</td>
<td>Ports</td>
<td>2</td>
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<td>1</td>
<td>1590</td>
</tr>
<tr>
<td>3</td>
<td>Roads</td>
<td>9</td>
<td>3891</td>
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</tr>
<tr>
<td>4</td>
<td>Tourism</td>
<td>12</td>
<td>1653</td>
<td>2</td>
<td>78</td>
</tr>
<tr>
<td>5</td>
<td>Urban Projects</td>
<td>15</td>
<td>1359</td>
<td>4</td>
<td>164</td>
</tr>
<tr>
<td>6</td>
<td>Health &amp; Education</td>
<td>6</td>
<td>311</td>
<td>1</td>
<td>128</td>
</tr>
<tr>
<td>7</td>
<td>Others</td>
<td>6</td>
<td>925</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>52</td>
<td>26020</td>
<td>8</td>
<td>1960</td>
</tr>
</tbody>
</table>
Important Projects Taken up by State Government

• Development of Core area of the capital city of Amaravati through Swiss Challenge Method – Project is awarded to Singapore Company. The bid parameter is Revenue share.

• Metro Rail Project in Visakhapatnam – It is under bidding stage. Bid parameter expected is lowest grant.

• International Convention Center in Visakhapatnam – Project is awarded to Lullu Group. The bid parameter is highest lease rental.

• Housing to Economically Weaker Sections – It is under bidding. Land belongs to the government. There are specified number of houses to weaker sections along with commercial development. Bid parameter is revenue share.

• Bhavanapadu Sea Port in Srikakaulam District – Project is Awarded to Adani Company through competitive bid. Revenue share is the bidding parameter.
Projects under successful operation

• Major Bridge across river Godavari – Rs.808 cores.
• Narketpally-Addanki-Medarametla Road – Rs.1196 cores
• Kadapa-Pulivendula Annuity Roads – Rs.263 cores
• Gangavaram Port – Rs.1850 cores
• Kakinada Deep Water Port – Rs.3956 cores
• Krishnapatnam Port – Rs.5200 cores
• 108 Emergency Response Services – Rs99 cores.
• Diagnostic Centers at Teaching Hospitals
• Beach Resort Project at Visakhapatnam
Projects under process

- Integrated Solid Waste Management – Rs.103 cores
- Family Entertainment Project at Visakhapatnam – Rs.40 cores
- Bay Park Project at Visakhapatnam – Rs.38 cores
- Waste Water Management Project – Rs.100 cores
- Automated Multilevel Car Parking at Tirupati – Rs.45 crs
- O&M of Street Lighting in 25 ULB’s – Rs.45 crs
- Modern Foot Over Bridges and Bus Shelters – Rs.40 crs
- Convention Center at Vijayawada – Rs.260 crs
- Integrated Sports Complex at Tirupati – Rs.290 crs
- International School at Visakhapatnam – Rs.75 crs
- Machilipatnam Port – Rs.1590 cores
- Greenfield Airport at Nellore
Urban or municipal infrastructure refers to hard infrastructure systems generally owned and operated by municipalities, such as streets, water distribution, and sewers, etc.
What are Urban Infrastructure Projects

- Urban Roads
- Urban Transport like MRTS, LRTS, BRTS
- Housing and Slum Redevelopment
- Water Supply
- Desalinisation
- Recycling and Reuse of Water
- Sewerage
- Storm Water Drains
- Solid Waste Management
- Street Lighting, etc
Why Investment needed

As per FICCI report on Urban Infrastructure in India: Oct 2011

• Water Supply: It is available for 2.9 hours per day across cities and towns

• Non-Revenue Water: The non-revenue water accounts for 40-60 percent of total water supply

• Sewerage: About 30-50 percent of households do not have sewerage connections

• Waste Water: Less than 20 percent of total waste water is treated
# How much Investment needed by Urban Infrastructure Projects

As per FICCI Report on Indian Urban Infrastructure and Services: March 2011

<table>
<thead>
<tr>
<th>Sn</th>
<th>Urban Sector</th>
<th>Investment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Urban Roads</td>
<td>17,28,941</td>
</tr>
<tr>
<td>2</td>
<td>Urban Transport</td>
<td>4,49,426</td>
</tr>
<tr>
<td>3</td>
<td>Renewal &amp; Redevelopment of Slums</td>
<td>4,08,955</td>
</tr>
<tr>
<td>4</td>
<td>Water Supply</td>
<td>3,20,908</td>
</tr>
<tr>
<td>5</td>
<td>Sewerage</td>
<td>2,42,688</td>
</tr>
<tr>
<td>6</td>
<td>Storm Water Drains</td>
<td>1,91,031</td>
</tr>
<tr>
<td>7</td>
<td>Capacity Building</td>
<td>1,01,759</td>
</tr>
<tr>
<td>8</td>
<td>Traffic Support Infrastructure</td>
<td>97,985</td>
</tr>
<tr>
<td>9</td>
<td>Solid Waste Management</td>
<td>48,582</td>
</tr>
<tr>
<td>10</td>
<td>Street Lighting</td>
<td>18,580</td>
</tr>
<tr>
<td>11</td>
<td>Other Sectors</td>
<td>3,09,815</td>
</tr>
<tr>
<td>12</td>
<td><strong>Total Expenditure</strong></td>
<td><strong>39,18,670</strong></td>
</tr>
</tbody>
</table>
How the Urban Infrastructure is Financed

• From ULB own resources

• Borrowing from Multilateral & Bilateral Agencies

• Borrowing from Commercial Banks and Financial Institutions

• Public Private Partnerships – It is one more window of financing
From ULB Own Sources

• Exclusive Taxes: Property Tax, Advertisement Tax, Professional Tax, Entertainment Tax

• Non-Tax Revenue: User Charges like water tariff, Trade Licensing Fee, FSI Charges/ Betterment Charge/ Impact Fee/ Development Charge

• Revenue Shared Taxes: All taxes on goods and services levied by the State Government, Stamp Duty, Motor Vehicle Tax

• Transfer and Grants-in-aid: From State Governments through State Finance Commission recommendation and from Central Government through Central Finance Commission recommendation

• Funding from new improved JNNURM, AMRUT, etc
From Borrowings

- Municipal Bonds (Bonds market size is USD 40 billion = Rs.2,60,000 crores. ULBs have borrowings is less than Rs. 200 crores pre year = 0.08%)

- Pooled Financing for ULBs

- Direct credit from institutions such as HUDCO and LIC linked to State Government Guarantees

- Bilateral and Multilateral assistance: World Bank, Asian Development Bank, JICA, DFID, KFW, etc.
Borrowing Limits: FRBM Limits

- FRBM Rules: The State borrowing limit is 3 per cent of the Gross State Domestic Product (GSDP)
- The 14th Finance Commission recommended flexibility to the extent of 0.5 per cent over and above the annual borrowing limit of 3 per cent of the Gross State Domestic Product (GSDP) of a state on fulfilling three conditions: debt-GSDP ratio not exceeding 25 per cent of GSDP, interest payments not exceeding 10 per cent of revenue receipts and, revenue surplus in the year in which the borrowing limits are to be fixed and the immediately preceding year.
- If the state’s GSDP is Rs 5 lakh crore, increasing the limit by 0.5 per cent will allow the state to borrow Rs 2,500 crore more each year.
PPP Models
### Financing through PPP – PPP Models

<table>
<thead>
<tr>
<th>Sn</th>
<th>PPP Type</th>
<th>Urban Infra Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BOT-Toll / Revenue: Projects which share revenue</td>
<td>Municipal shopping complexes, Housing, Street Lighting maintenance</td>
</tr>
<tr>
<td>2</td>
<td>BOT-VGF: Projects which can be taken up with Viability Gap Funding and Leasing of land</td>
<td>Metro Rail, Bus Rapid Transit System</td>
</tr>
<tr>
<td>3</td>
<td>O&amp;M Projects: Projects which can be taken up with Operation and Maintenance support:</td>
<td>Water, Sewerage</td>
</tr>
<tr>
<td>4</td>
<td>BOT-Annuity: Projects which can be taken up with Annuity (Extent of Annuity projects depends on ability to repay)</td>
<td>Urban roads, Storm water drains</td>
</tr>
</tbody>
</table>
Project Structuring & Financing
Financial Viability of the Project

Project Revenue > < Project Cost
Economic Viability of the Project

Social Benefits > Project Cost
Value for Money (VFM) – Before Bidding

- Project Revenue: Private Partner vs Govt.
- Project Cost: Private Partner Vs Govt.
- Operational Efficiency
- Construction Efficiency

Value for Money (VFM) – After Bidding

- Actual Revenue Share quoted by Bidder Vs Estimated revenue share by the Govt.
# Project Cost Estimation

## How Project Cost Estimated

- Identify tasks and responsibilities to be performed
- Identify assets to be designed, built, financed, maintained and operated

## Reasons for Cost Estimation

- Assess the funding requirements.
- Compare funding requirements with future revenues.
# Revenue Estimation

<table>
<thead>
<tr>
<th>How Revenue is Estimated</th>
<th>Why Demand is Estimated</th>
<th>Reasons for Revenue Estimation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assess demand for the project.</td>
<td>• Design the capacity of an infrastructure to meet present and future demand.</td>
<td>• Compare future revenues with funding requirements.</td>
</tr>
<tr>
<td>• Assess the willingness of the users to pay.</td>
<td>• Estimate possible future revenues.</td>
<td>• Information to prospective bidders to prepare bids.</td>
</tr>
</tbody>
</table>
Estimation of Period of Operation

How period of operation estimated. It is also called duration

- On the basis of recovery of investment.
- On the basis of the economic life of the asset.
- On the basis of the design capacity of the asset.
- On the basis of bidding.
Financing of Project Cost

Debt Financing

• Banks – Public Sector Banks and Private Sector Banks.
• Bonds issued by the Company.
• Government – Interest free debt.
• Multilateral & Bilateral Development Banks.

Equity Financing

• Developers.
• Investment Funds.
• Government.
• Multilateral & Bilateral Banks.
## Bank Finance: Corporate Finance Vs Project Finance

<table>
<thead>
<tr>
<th>Corporate Finance</th>
<th>Project Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Financing of sponsors multiple activities.</td>
<td>• Financing of single activity.</td>
</tr>
<tr>
<td>• Sponsors collateral value.</td>
<td>• Project debt service capacity.</td>
</tr>
<tr>
<td>• Sponsors prior performance.</td>
<td>• Projects future cash flows.</td>
</tr>
<tr>
<td>• Recourse to sponsors assets.</td>
<td>• Recourse to project assets.</td>
</tr>
</tbody>
</table>
### Cost of Finacing

**Cost of Debt Financing**

- Assess from comparable projects, or
- Adding risk free rate with spread.
- Risk free rate is equivalent to GOI 10 yr bonds.
- Spread is taken from comparable projects.

**Cost of Equity Financing**

- Assess from comparable projects, or
- By using Capital Asset Pricing Model:
  \[
  R_e = R_f + \beta (R_m - R_f)
  \]

**Weighted Average Cost of Capital:**

\[
(\text{Percent of Debt} \times \text{Cost of Debt}) + (\text{Percent of Equity} \times \text{Cost of equity})
\]

\[
(80\% \times 10\%) + (20\% \times 15\%) = 11\%
\]
Financial Viability of the Project

- When the Return on Investment is higher than the cost of financing.

How to calculate the Return on Investment

- Returns are received over the length of the concession period.
- Hence, Return on Investment is calculated by discounting the future returns by a rate of interest so that the present value is equal to project cost.
- The way to discount: \( PV = \frac{FV}{1 + \left(\frac{r}{100}\right)} \)
## Financially not Viable Projects

<table>
<thead>
<tr>
<th>Project Cost Support</th>
<th>Revenue Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Viability Gap Funding.</td>
<td>• Increase in Tariffs.</td>
</tr>
<tr>
<td>• Interest Free Loan.</td>
<td>• Increase in duration.</td>
</tr>
<tr>
<td>• Loan Guarantees.</td>
<td>• Increase the scope of work.</td>
</tr>
<tr>
<td>• Decrease the scope of work.</td>
<td></td>
</tr>
</tbody>
</table>

- **Project Cost Support:**
  - Viability Gap Funding.
  - Interest Free Loan.
  - Loan Guarantees.
  - Decrease the scope of work.

- **Revenue Support:**
  - Increase in Tariffs.
  - Increase in duration.
  - Increase the scope of work.
Support from Government of India
Viability Gap Funding (VGF) scheme

- Revolving fund within Ministry of Finance
- Supports PPP infrastructure projects which are *Economically justifiable but NOT viable Financially*
- *Upfront grant of up to 20% of project cost. Additional 20% can be given by the sponsoring authority (if required)*
- Project implementation by a Private Sector Company
- Project should provide a service against payment of a *pre-determined tariff or user charge*
- *Bidding Parameter* is VGF sought

VGF provides funding in the form of a grant to meet the gap for making a PPP project commercially viable
India Infrastructure Project Development Fund (IIPDF)

- The fund is created by Ministry of Finance, Government of India.
- It is a revolving fund with Rs.100 crores.
- IIPDF assists up to 75% of the project development expenses.
- Expenses towards cost of engaging consultants and transaction advisors.
- The areas include: feasibility studies, environment impact studies, financial structuring, legal reviews, development of project documentation like concession agreement, traffic studies, demand assessment, capacity to pay assessment.
- Recovery of Project Development Funding with Returns: Revenue Generating Commercial Project with a success fee of 40%, Efficiency Enhancement projects with a success fee of 25% and Non-revenue generating projects without any success fee.
Key Risks –
How it Effects Financial Viability
What is Risk

- A risk is defined as any factor, event or influence that could threaten the successful implementation of a project in terms of cost, revenue, time and quality.
How Risk Effects - Project Cost

Commissioning risk
- Delay in getting approvals delays the commissioning.
- There will be cost escalation and cost of maintenance.

Construction risk
- Construction not completing on time, budget.
- Increase in labour cost, cost of maintenance.

Financing cost
- Unexpected increase in Interest Rates.
- Increase in cost of financing.
## How Risk Effects - Project Revenue

<table>
<thead>
<tr>
<th>Risk Type</th>
<th>Description</th>
</tr>
</thead>
</table>
| **Demand Risk**        | - Actual demand for a service is lower.  
                         - Actual revenue is lower due to less demand. |
| **Operating Risk**     | - Unexpected increase in operating cost.  
                         - This leads to reduced revenue. |
| **Latent Defect Risk** | - Inherent defect exists in the infrastructure.  
                         - Cost of rectification reduces revenue. |
Consequences of Risks with Examples
What can go wrong?

Common causes of inaccurate cost estimation

**Construction**

**Possible causes:**
- Incomplete cost estimates
- **Unforeseen technical work**

**Operations**

**Possible causes:**
- **Cost escalation** i.e. inflation higher than expected
- Usage higher than expected requiring more maintenance
- Over optimistic planning
- Delays in obtaining **clearances**

**Cost overruns**

**Capital Expenditures**

**Maintenance and Operating Expenditures**
As proven in practice

**Cost overruns and delays in infrastructure projects in general**

<table>
<thead>
<tr>
<th>Cost overruns</th>
<th>Delays</th>
<th>Some of the worst examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>KPMG's review of 1,035 projects in India</td>
<td>EIB review of 50 projects with delay &gt; 1 year</td>
<td>Boston - New York Rail</td>
</tr>
<tr>
<td>40%</td>
<td>60%</td>
<td>130%</td>
</tr>
<tr>
<td>NAO's review of cost overruns in the UK</td>
<td>NAO's review of delays in the UK</td>
<td>Humber Bridge UK</td>
</tr>
<tr>
<td>73%</td>
<td>70%</td>
<td>175%</td>
</tr>
<tr>
<td>Flyvbjerg's Review of 258 projects worldwide</td>
<td>KPMG's review of 1,035 projects in India</td>
<td>Boston Tunnel</td>
</tr>
<tr>
<td>90%</td>
<td>82%</td>
<td>196%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Panama Canal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Concorde Aeroplane</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1100%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sydney Opera House</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1400%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suez Canal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1900%</td>
</tr>
</tbody>
</table>

(NAO – National Audit Office; EIB-European Investment Bank; Bent Flyvbjerg is Social Scientist; Suez Canal – 20 times cost overrun)
Although less likely with well structured PPPs
Reduced risk of cost overruns and delays

<table>
<thead>
<tr>
<th>On Time Delivery</th>
<th>Percentage of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>53% Australia, 85% UK</td>
</tr>
<tr>
<td>PPP</td>
<td>99% Australia, 99% UK</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Within Budget Delivery</th>
<th>Percentage of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>75% Australia, 83% UK</td>
</tr>
<tr>
<td>PPP</td>
<td>97% Australia, 100% UK</td>
</tr>
</tbody>
</table>

Sources: Mott McDonald 2002, Allen Consulting 2007
What can go wrong?

Actual can be different than estimate

Demand risk (e.g. roads)
Actual as percentage of Forecast

- Li Hensche's review of 8 toll roads in Australia: 55%
- Vassallo's review of 14 toll roads in Spain: 65%
- S&P review of first year traffic on 105 toll roads: 75%
What is the implication?
In cases where demand risk is transferred to private partner

If actual demand is more than estimate:

- Private partner *might earn more* than the projected revenues
- Infrastructure capacity might be *insufficient*

If actual demand is less than estimate:

- Private partner *may earn less* than the projected revenues
- Tariffs may have to be increased
- Government may have to step in and *provide support* or even take over the undertaking
## Define growth scenarios

**For example**

<table>
<thead>
<tr>
<th>Scenario Drivers</th>
<th>Low case</th>
<th>Base case</th>
<th>Upper Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political development</td>
<td><em>No improvement of international relations</em></td>
<td><em>Medium improvement of international relations</em></td>
<td><em>Strong improvement of international relations</em></td>
</tr>
<tr>
<td>Economic Development</td>
<td><em>Agricultural economy</em></td>
<td><em>Service economy</em></td>
<td><em>Service economy</em></td>
</tr>
<tr>
<td></td>
<td><em>No land use development</em></td>
<td></td>
<td><em>Intense land use development</em></td>
</tr>
<tr>
<td>Social Development</td>
<td><em>Low level of urbanization</em></td>
<td><em>Medium level of urbanization</em></td>
<td><em>Strong level of urbanization</em></td>
</tr>
<tr>
<td>Growth Rate</td>
<td><strong>3%</strong></td>
<td><strong>6%</strong></td>
<td><strong>9%</strong></td>
</tr>
</tbody>
</table>
Example

*Delhi Gurgaon Expressway*

- The plan for an expressway connecting Gurgaon, a Delhi suburb that is located in Haryana and the Capital city, was initiated in the late 1990s.
- DPR prepared in 1998 estimated traffic in the first year at 80,000 vehicles per day.
- The expressway was *commissioned in January 2008* after much delay primarily owing to issues of land acquisition and changes in the scope of work.
- Traffic on the expressway on the first day turned out to be what the DPR had projected it would see in 2013. The actual average daily traffic is now being estimated at 2,00,000 vehicles.
- Traffic has exceeded estimates because of more *intense land-use development*.

Year-on-Year growth in traffic has been more than 9%, instead of estimated 5%.
Assess elasticity
Also referred to as Willingness to Pay

- **Elastic**: increase (a decrease) in price leads to a decrease (an increase) in total demand

- **Inelastic**: Increase (a decrease) in price does not lead to an increase (a decrease) in total demand

- Factors Affecting Elasticity
  - *Available Substitutes*: The more substitutes available for the good/service, the more elastic the demand
  - *Quality*: The difference in quality of service between the public service and the competing alternatives
Example

**Delhi NOIDA Toll Bridge**

- IL&FS, NOIDA and the Delhi Administration signed a MoU on 7th April 1992 for the construction and operation of the Delhi NOIDA Toll Bridge. IL&FS was recognised as developer of the project. NOIDA Toll Bridge Company Limited (NTBCL) was incorporated on 8th April 1996.

- Under the Concession Agreement (executed with NOIDA), NTBCL was given the right to commercially exploit the Delhi NOIDA Toll Bridge by levying tolls.

- The bridge, which opened to traffic in February 2001, was among the initial projects to be developed as a PPP.

- In the initial years of operation, the revenue from collection of toll fees at the Delhi Noida toll bridge was *far below originally projected levels* and also below break-even levels because *2 new free bridges* on the northern side were constructed by Delhi government.

- The project was able to achieve only 37% of projected traffic and 28% of projected revenues in 2002-03.

Shortfall attributed to unexpected development of competing alternatives.
Example

The M1/M5 in Hungary

- The M1/M15 in Hungary was the first toll motorway tendered and implemented in Central and Eastern Europe.
- Construction of motorway was finished in 1995 on schedule and within budget.
- Traffic volumes were about 40% lower than anticipated, despite the forecasts being prepared by independent experts. The main reason was the presence of a nearby free alternative which took longer. It appears that the extra travel time did not outweigh the level of toll for the users.
- As a result, the concessionaire was unable to service its debt and ultimately the government had to take over the concession at a high cost.

Over-estimation of the value of time in assessing elasticity

Source: Vickram Cuttaree, The World Bank, Key success factors for PPP based on International Experience
Example

Eurotunnel

• Tunnel between England and France

• Opened in 1994 (one year behind schedule)

• Actual usage in the initial years was less than a third of estimate

• Traffic forecast underestimated/ignored
  – Competing ferries with lower prices
  – Emergence of low cost airlines

Underestimation of the impact of competing alternatives on demand
Case Studies
## Foot Over Bridges on PPP

<table>
<thead>
<tr>
<th>Project Name</th>
<th>• Foot Over Bridge.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPP Model</td>
<td>• Built Operate and Transfer (BOT) Model.</td>
</tr>
<tr>
<td>Implementing Agency</td>
<td>• A P Urban Finance &amp; Infrastructure Development Corporation.</td>
</tr>
</tbody>
</table>
| Project Location   | • Seven Locations in Four Urban Local Bodies.  
|                    | • Bhimavaram, Guntur, Ongole, Chittoor. |
| Project Benefits   | • Use of pedestrians.  
|                    | • Free of flow of traffic. |
## Foot Over Bridges on PPP

<table>
<thead>
<tr>
<th><strong>Bid Criteria</strong></th>
<th>• Length of Concession Period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration</strong></td>
<td>• It is around 9 to 12 years.</td>
</tr>
<tr>
<td><strong>PDF</strong></td>
<td>• The Project accessed Project Development Fund from GOI.</td>
</tr>
<tr>
<td><strong>Developer</strong></td>
<td>• M/s Prakash Arts Pvt Ltd.</td>
</tr>
<tr>
<td><strong>Project Risks</strong></td>
<td>• The project could not take off as the Advertisement Policy not yet Finalised</td>
</tr>
</tbody>
</table>
Mass Rapid Transit System (MRTS) - Hyderabad
Mass Rapid Transit System (MRTS)–Hyderabad 1/2

- Length of the corridor is 71.16 Kms with elevated structure
- Estimated Project Cost Rs 12,132 crs
- Bidder selection – Bidder who seeks Min VGF
- PHPDT is 40000 passengers approx
- 3 min headway
- Expected people to travel by 2014 is 14.76 lakhs passengers per day and by 2024 is 22.13 lakh passengers per day
- Travel time from Miyapur to LB Nagar is 43 min covering a distance of 26 km against Bus Peak hour time of 1 hr 44 min
- Concession period is 35 years with a construction period of 5 yrs

Robust project preparation is a prerequisite for a PPP
Mass Rapid Transit System (MRTS)–Hyderabad 1/2

- Project is awarded in September 2010
- Project is awarded to M/s Larsen & Toubro with a Grant under VGF is Rs 1458 crs
- Commercial operation expected from 2015
- It carries 24 lanes of car traffic
- Reduces journey time by 50% to 75%
- The fare structure is a minimum basic fare of Rs 8/- and a maximum fare of Rs 19/- in the year 2014
- Real estate development of 269 acres of land along the corridor to cross subsidise the revenue shortfall.

Robust project preparation is a prerequisite for a PPP
Outer Ring Road (ORR) - Hyderabad

- SPV is incorporated as “Hyderabad Growth Corridor Limited”
- Total Length – 158 Kms
- Estimated cost – Rs 3000 crs
- Phase I of the project covers 62.3 km
- The estimated cost of Phase I is Rs 1783 crs
- Phase I is on PPP Annuity basis over a concession period of 15 yrs
- ORR Provides orbital linkage to radial arterial roads
- Creates options for development of the further satellite townships
- Provides linkage to the proposed MRTS and Bus System

Robust project preparation is a prerequisite for a PPP
Case Study – Bridge Across River Godavari
Rajahmundry Godavari Bridge Project
(Spanning over 14 km, connecting two ends of Mighty Godavari)
Project Significance

- Traffic congestion on existing rail cum road bridge between Kovvuru and Rajahmundry (constructed in 1897, decommissioned in 1997)

- Existing rail-cum-road bridge was supposed to be closed for commercial traffic

- Vital road link connecting Gundugolanu and Rajahmundry

- Saves a distance of ~ 40 km between Gundugolanu and Rajahmundry when compared to NH Travel

- Bypass to Rajahmundry and Kovvur town
## Salient Features

<table>
<thead>
<tr>
<th>S No</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Project</td>
<td>Design, Construction, Finance, Operation and Maintenance of Major Bridge across river Godavari – Toll basis</td>
</tr>
<tr>
<td>2</td>
<td>Concessioning Authority (State)</td>
<td>Andhra Pradesh Road Development Corporation (APRDC)</td>
</tr>
<tr>
<td>3</td>
<td>Concessionaire</td>
<td>Rajahmundry Godavari Bridge Limited</td>
</tr>
<tr>
<td>4</td>
<td>EPC Contractor</td>
<td>Gammon India Limited</td>
</tr>
<tr>
<td>5</td>
<td>RFQ</td>
<td>6 Bidders</td>
</tr>
<tr>
<td>6</td>
<td>RFP</td>
<td>2 Bidders (Gammon and HCC)</td>
</tr>
<tr>
<td>7</td>
<td>Bidding Parameter</td>
<td>Lowest VGF</td>
</tr>
<tr>
<td>8</td>
<td>Date of Signing of CA</td>
<td>5th November 2008</td>
</tr>
<tr>
<td>9</td>
<td>Appointed date</td>
<td>26th May 2009</td>
</tr>
</tbody>
</table>
## Salient Features

<table>
<thead>
<tr>
<th>S No</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Scheduled Project Comp. date</td>
<td>25&lt;sup&gt;th&lt;/sup&gt; May 2012</td>
</tr>
<tr>
<td>10</td>
<td>Actual Completion Date</td>
<td>November 01, 2015</td>
</tr>
<tr>
<td>11</td>
<td>Concession Period</td>
<td>25 years (Incl. Construction Period)</td>
</tr>
<tr>
<td>12</td>
<td>Project Details</td>
<td>Major Bridge across river Godavari (4 Lane)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.109 km (Two Separate Bridges of Each Two Lane with 4.5m Median Gap)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approach Road Rajahmundry side - 8.652Km</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approach Road Kovvur side - 1.947</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Length of the Project: 14.488 Km</strong></td>
</tr>
<tr>
<td>13</td>
<td>Toll Plaza</td>
<td>1 No with 6+6 lanes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Executed 3+3 Lanes due to land constraint</td>
</tr>
<tr>
<td>14</td>
<td>Underpasses</td>
<td>6 Nos (5 Nos Under Change of Scope)</td>
</tr>
<tr>
<td>15</td>
<td>Determination of Tariff</td>
<td>As per the AP road toll policy to be adjusted to WPI every year on April 1</td>
</tr>
</tbody>
</table>
**Project Structure**

- **Sponsors (Gammon Infrastructure projects Ltd - 75%)**
- **Independent Engineer**
- **APRDC**
  - Mutual Consent
  - Design Assurance
- **SPV (RGBL)**
  - Grant
  - Asset
  - Concession Agreement
- **Lenders**
  - Debt
  - Repayment
- **Users**
  - Toll Service
- **EPC Contractor (Gammon India Ltd)**
- **O&M Contractor (FBOPL)**
# Financing Structure

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Amount (in Rs cr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Cost</td>
<td>1058.26</td>
</tr>
<tr>
<td><strong>Means of Finance</strong></td>
<td></td>
</tr>
<tr>
<td>Equity</td>
<td>203.89</td>
</tr>
<tr>
<td>Grant</td>
<td>208.0</td>
</tr>
<tr>
<td>Debt</td>
<td>648.34</td>
</tr>
</tbody>
</table>

Original cost of the project was Rs 846 cr.
Due to delay in land acquisition, the project cost increased to Rs 1033.25 cr
However subsequently due to change in certain scope of work, the project cost further increased to Rs 1058.26 cr
O&M Arrangement

Start of Toll Operations Date 01\textsuperscript{st} November 2015

Name of Toll collecting Agency Feedback Brisa OMT Pvt Limited (JV of Feedback Infra private Ltd and Brisa, Auto-estradas de Portugal)

Routine Maintenance Will be taken up on need basis

Route patrolling & Incident management Patrolling vehicles – 1nos

Hydra – 1nos

Ambulance – 1nos
## Comparison between Bridge Vs National Highway

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Vehicle Category</th>
<th>Toll using RGBL Bridge</th>
<th>Toll using National Highway</th>
<th>% of Alternate Toll</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Car, Jeep, Van</td>
<td>51.00</td>
<td>100</td>
<td>51%</td>
</tr>
<tr>
<td>2</td>
<td>Light Commercial Vehicle (LCV)</td>
<td>75.00</td>
<td>190</td>
<td>39%</td>
</tr>
<tr>
<td>3</td>
<td>Bus / Truck</td>
<td>151.00</td>
<td>385</td>
<td>39%</td>
</tr>
<tr>
<td>4</td>
<td>MAV</td>
<td>218.00</td>
<td>765</td>
<td>28%</td>
</tr>
</tbody>
</table>

- Lower toll and shorter distance by 42 km
<table>
<thead>
<tr>
<th>Key Risks</th>
<th>Allocation</th>
<th>Description</th>
<th>Issue/Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Acquisition Risk</td>
<td>State</td>
<td>Delay in the project due to land acquisition. Resulted in cost increase.</td>
<td>State will acquire and arrange land for the project.</td>
</tr>
<tr>
<td>Construction &amp; Operational Risks</td>
<td>Concessionaire</td>
<td>May result in time and cost overrun</td>
<td>EPC contracts for construction and O&amp;M awarded.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Further necessary LD clauses and Performance Guarantee (5%) was provided in the CA.</td>
</tr>
<tr>
<td>Design Risk</td>
<td>Concessionaire</td>
<td>Ascertaining the quality of the project</td>
<td>Independent Engineer was appointed by mutual consent.</td>
</tr>
</tbody>
</table>
## Risk & Mitigation

<table>
<thead>
<tr>
<th>Key Risks</th>
<th>Allocation</th>
<th>Description</th>
<th>Issue/Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financing Risk</td>
<td>Concessionaire</td>
<td>Arrangement of requisite funds for the project.</td>
<td>The concessionaire was required to achieve debt closure within 180 days from the Effective Date.</td>
</tr>
<tr>
<td>Market Risk</td>
<td>Concessionaire</td>
<td>Off-take Risk</td>
<td>• Traffic Study was conducted by APRDC and Gammon. However, the traffic was less than projected resulting in lower revenue.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Further, existing road cum rail bridge is not fully closed for commercial operations.</td>
</tr>
</tbody>
</table>
PPP Website of GOAP

PPP Initiatives
- About PPP Cell
- PPP Concept
- ADB TA Mission
- Transaction Advisers
- PPP Projects
- PPPMIS Reports
- Upcoming Projects

Reference Documents
- Circulars/Orders
- IDE Act 2001
- Acts / Policies
- Guidelines
- Model Conc Agreements
- Feasibility / Case Studies
- Detailed Project Reports
- RFP Documents
- MOU’s
- PPP Best Practices
- PPP Presentations
- Monthly News Letter
- Miscellaneous

Search
- Project Details
- Documents
- Pictures
- Media/News
- Events

Important Projects
- Construction HLB Across Rallavagu Near Somegudem Village At Kasipet (M), Adilabad Dist.
- Construction Of HLB Across Uppu Vagu On Mahaboobnagar - Nalgonda Road.
- Construction Of HLB Across Gunduru Vagu On Eluru - Jangareddygudem Road.
- Construction Of Bridge Across Krishna River Connecting Puliagadda And Penumudi.
- Formation Of Mini Bypass Road To Eluru Town.
- Construction Of HLB Across Chandraiah Drain On Machilipatnam Nuzividu - Kalluru Road.
- Construction Of HLB Across Palaraju Drain On Bhimavaram Gudivada, Krishna District.
- Formation Of Puttur & Tadukupeta Bypass Roads.
- HITC City, Cyberabad, Hyderabad.
- Mindspace Project, Madhapur, Hyderabad.
- Jawaharlal Nehru Pharma City, Visakhapatnam.
- Business District & Trade Towers (High-Rise Buildings) Of Above 100 Floors, Manchirevula, RR Dist.
- Integrated Golfcourse & Convention Centre, Hyderabad.
- Hardware Park, Hyderabad.

Project Summary (State Level)

<table>
<thead>
<tr>
<th>Sector</th>
<th>No's</th>
<th>Amount (In Cr's)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airports</td>
<td>1</td>
<td>2487</td>
</tr>
<tr>
<td>Education</td>
<td>6</td>
<td>1051</td>
</tr>
<tr>
<td>Energy/Power</td>
<td>2</td>
<td>816</td>
</tr>
<tr>
<td>Health</td>
<td>8</td>
<td>1282</td>
</tr>
<tr>
<td>Roads</td>
<td>41</td>
<td>10134</td>
</tr>
<tr>
<td>Sea Ports</td>
<td>4</td>
<td>12596</td>
</tr>
<tr>
<td>Tourism</td>
<td>47</td>
<td>2865</td>
</tr>
<tr>
<td>Urban Infrastructure</td>
<td>39</td>
<td>23185</td>
</tr>
<tr>
<td>Others</td>
<td>23</td>
<td>3781</td>
</tr>
<tr>
<td>Total</td>
<td>171</td>
<td>58196</td>
</tr>
<tr>
<td>Upcoming Projects</td>
<td>36</td>
<td>20055</td>
</tr>
<tr>
<td>Grand Total</td>
<td>207</td>
<td>76252</td>
</tr>
</tbody>
</table>

MIS User login (Click here)
CUG Login (Click Here)

News & Events
- Development of Kakatiya Musical Garden at Warangal, More...
- 29 May 2012: PURA 2.0 Notice Inviting of ‘Expression of Interest’ For Provision of Urban Amenities in Rural Areas. More...
- 19 May 2012: Book Review - How to Engage with the Private Sector in Public Private Partnerships in Emerging Markets
- 04 Apr 2012: Government of Karnataka Department of Tourism, Expression of Interest. More...
<table>
<thead>
<tr>
<th>SN</th>
<th>Description</th>
<th>URL / LINK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PPP Cell, DEA, MOF, Government of India</td>
<td><a href="http://www.pppinindia.com">www.pppinindia.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Government of India (GOI) Database on PPP</td>
<td><a href="http://www.pppindiadatabase.com">www.pppindiadatabase.com</a></td>
</tr>
<tr>
<td>3</td>
<td>Planning Commission, GOI</td>
<td><a href="http://www.planningcommission.nic.in">www.planningcommission.nic.in</a></td>
</tr>
<tr>
<td>4</td>
<td>Committee on Infrastructure, GOI</td>
<td><a href="http://www.infrastructure.gov.in">www.infrastructure.gov.in</a></td>
</tr>
<tr>
<td>5</td>
<td>UK</td>
<td><a href="http://www.partnershipsuk.org.uk">www.partnershipsuk.org.uk</a></td>
</tr>
</tbody>
</table>
D Shalem Raju
Public Private Partnership Expert
Finance Department, Government of Andhra Pradesh
Mob: 9849668162; dshalem_raju@hotmail.com