Adapting Hybrid Annuity Model for Projects in Andhra Pradesh

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Public Private Partnership

- **Public Private Partnership (PPP)** as the name indicates is an arrangement between government and private sector to design, build, finance, own and or operate projects, typically of a long-term nature.
- In India, PPP has been employed primarily for infrastructure projects such as highways, airports, seaports, water supply, etc.
- There are different types of PPP structures:

<table>
<thead>
<tr>
<th>PPP Structure</th>
<th>Description</th>
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<tbody>
<tr>
<td>Built-Operate-Transfer (BOT)</td>
<td>Developer builds the asset, operates it for a specified duration and transfers it back to the government. Payment is made to developer for the duration of operation of the asset by developer.</td>
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<td>BOT – toll model</td>
<td>Same as BOT however, developer is allowed to recover their investment through collection of toll revenue for long periods ~30 years. Applicable primarily in highway projects.</td>
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<tr>
<td>Engineering-Procure-Construct (EPC)</td>
<td>Government is responsible for payments for construction and procurement. Private player participation is limited to engineering expertise and construction of the project.</td>
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<td>Hybrid Annuity Model (HAM)</td>
<td>Government pays 40% of the cost of the project during construction period and rest 60% of the payment as Annuities along with interest over the operation period.</td>
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NHAI, a pioneer in executing PPP projects in India, has moved awarding contracts from rate contract to annuity to BOT toll to EPC to HAM model.

In 2016-17, NHAI has awarded 38 contracts on EPC, 35 contracts on HAM, and 4 on BOT.

In case of HAM model, the risks are distributed between government agency and concessionaire as opposed to risks primarily lying with concessionaire in BOT model.

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Govt.</th>
<th>Concessionaire</th>
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</thead>
<tbody>
<tr>
<td>Pre-Construction Clearance</td>
<td></td>
<td>Environment, ROW, Forest clearances</td>
</tr>
<tr>
<td>Construction</td>
<td></td>
<td>Cost Overrun, Time Overrun, Quality risk</td>
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<tr>
<td>Financing</td>
<td></td>
<td>Financial closure on time, Financing cost overrun</td>
</tr>
<tr>
<td>Operations &amp; Maintenance</td>
<td></td>
<td>Major and routine maintenance</td>
</tr>
<tr>
<td>Change in Project Scope</td>
<td></td>
<td>Deviations from DPR scope</td>
</tr>
<tr>
<td>Input Material Cost</td>
<td></td>
<td>Material cost fluctuation risk</td>
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### Hybrid Annuity Model versus PPP

| Private Capital | HAM models enable influx of private capital for the infrastructure development and helps in diversifying financing sources
|                | Liquidity of developer is ensured |
| Lifecycle cost | HAM developer is incentivized to take a lifecycle view to reduce O&M costs in future. This will result in longer life of asset |
| Fewer Project delays | EPC projects in India have a construction delay of 47 months as against 19 months for PPP. This results in escalation in construction cost for EPC projects by 24%
|                | Many PPP projects have been stalled owing to non-availability of finances adding to NPAs of banks |
| Cost of capital | Cost of capital is comparable based on NHAI bid analysis
|                | HAM will lead to staggering of cash flows for Authority |
Hybrid Annuity Model – Structure Overview

- **GoAP / Authority**
  - 40% of CAPEX during construction Period
  - Inclusive of 10% Mobilization Advance

- **Private Developer**
  - Financing, Technical Expertise, Design & Construction

- **SPV**
  - Developed Assets

- **Hybrid Annuity**
  - 60% of CAPEX during construction Period

- **Project Construction**

- **Operation Period – 10-15 Years**
  - 60% of CAPEX investment by developer paid back by Govt.
  - Can be in equal or telescopic bi-annual payment
  - Interest on this investment also paid by developer – Bank rate or MCLR + 3%
  - O&M payments as bid by developer paid by Govt.

**O&M Payments**

**O&M – 10-15 years**
Hybrid Annuity Model – Projects Undertaken

- **43 highway projects with estimated cost of Rs.3,600 Cr have been awarded on the HAM by NHAI**
- **State Governments of Maharashtra, Rajasthan, Jharkhand, and Karnataka have executed projects on HAM model**
  
  **Karnataka Govt.**
  
  - Karnataka State Highways Improvement Project (K-SHIP) has executed two road projects on annuity basis (supported by World Bank)
  - Project details:
    - Upgradation of the 194 kms road from Malavalli to Pavagada
    - Construction cost of Rs. 559 Cr+ Rs. 1306 Cr annuity cost to be paid in semi-annual installments
    - Concession period of 10 years: 30 months construction and 90 months maintenance

  **Namami Gange**
  
  - The Ministry of Water Resources, River Development & Ganga Rejuvenation has also adopted Hybrid Annuity Model for Namami Gange program to build Sewage Treatment Plants (STP)
  - 3 STPs in Haridwar and 1 STP in Varnasi were awarded
    - Concession period of ~17 years: 21 months construction and 180 months maintenance

**GoAP is adapting HAM for various integrated projects planned across the State**
GoAP is planning multiple infrastructure projects across the state of Andhra Pradesh.

Large quantum of investment required by GoAP for implementing these projects.

Private sector in recent past has been unable to provide wholly for such high investment project.

Number of PPP (BOT, BOT-Toll) projects have been stalled owing to unavailability of financing.

HAM distributes financing risks between government and private player and hence is becoming preferred choice for developers, banking institutions and government alike among all other PPP models.

HAM is one of the potential solution and should be explored for certain projects across the State and as an alternative to the EPC model.