

PRESENTATION FINANCIAL MODELLING AND PROJECT FINANCE – HAM

YOG INFRA



GROWING OPPORTUNITY

Road sector to see major push as Infrastructure development is key priority for GoI

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Pvt investment of Rs 30,000 cr expected in 2021-22 through HAM, BOT projects: Highways secy

NHAI to award highway projects worth Rs 72,000 cr in Q4FY21

The fourth quarter highway project pipeline of the ministry will give a major push to awarding of the projects in current financial year, which have been deeply impacted by the Covid-19 pandemic

Govt eyes Rs 30k cr private investment in highway projects

The Union Budget had allocated Rs 1.18 lakh crore for highways from the central coffers—the highest ever—and around Rs 65,000 crore is to be raised from extra budgetary resources, including borrowings.

RANSPORTATION

'Revised HAM to boost investor confidence, catalyse stake sales'

Highway construction to get on fast track! HAM projects get new lease of life

By: Surya Sarathi Ray November 16, 2020 8:15 AM

With the govt addressing concerns pertaining to its execution, the model is expected to draw road developers once again



WHAT IS HAM?

Background

Hybrid Annuity Model (HAM) was introduced to rejuvenate the Public-Private Partnership (PPP) in roads sector (construction of national and state highways). It is a mix of traditional Engineering Procurement Construction (EPC) and a full PPP Build-Operate-Transfer (BOT) annuity scheme—hence the term "hybrid".



EPC model

EPC/Turnkey projects are awarded with full payment by government authority for road construction, without any deferred payouts mechanism.

The obligations of the EPC contractor is till project commercial operation date (CoD); and the government authority has the responsibility for operation & maintenance of the project.

BOT model

The BOT model was widely used for long-term private sector participation in the roads sector in India; can be further categorized in two models based on the allocation of market risk to public or private sector.

- a) BOT-Toll These operate on a user-charge recovery base (e.g., tolls).
- b) BOT-Annuity- Payments are made based on availability/performance

HAM Model

Hybrid PPP model with elements of EPC and BOT model included therein.

- 40% of project cost pad during construction
- Remaining 60% of project cost paid during operations as annuity along with interest payment; and O&M expense



ADVANTAGES OF HAM MODEL



CONCESSIONAIRE:

- Lower equity requirements from the Sponsor since 40% project cost is financed by government authority. Assuming a D:E ratio of 75:25 for the remaining funding to be arranged, the effective equity contribution by Sponsor is limited to 15% of total project cost
- Provision for mobilization advances to the concessionaire at bank rate
- Higher right of way availability for the project since 80% land is cleared before appointed date
- Inflation-linked adjustments for project cost and subsequent annuity payments

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GOVERNMENT AUTHORITY:

- Government keeps the deferred payment capital expenditure of up to 60% as "off balance sheet" in form of annuity payments
- Wider participation from many EPC players in HAM projects since there is much lower upfront equity investment needed and hence, higher value of money to government due to increased competition
- Timely project completion and on budget since the private sector has an incentive to complete and start annuity revenues and contractual incentives
- Since the HAM contractor bears a risk for a period of 15 years after project completion, the asset design and construction is expected to be of higher quality compared to EPC contracts
- A higher asset quality translates as higher service levels for road users



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PROJECT IMPLEMENTATION STATUS

Bharatmala Pariyojana Phase-1

- The Cabinet Committee on Economic Affairs (CCEA) approved the implementation of an umbrella programme for the National Highways – "Bharatmala Pariyojana Phase-I" in its meeting held on 24th October 2017, for construction/ up-gradation of National Highways of 34,800 kms length over a period of 5 years (2017-18 to 2021-22) at an estimated outlay of Rs. 5,35,000 Crore.
- Most of these projects were envisaged to be awarded through EPC and HAM models due to lackluster response to BOT model by the private sector.
- Given below is a summary of road projects awarded by NHAI in last three financial years (FY 2020, FY 2019, FY 2018).

	Approved TPC	Total Length	Number of Projects
	(Rs. Cr)	(Km)	
BOT Toll	4,791.81	397.93	3
EPC	87,756.93	5,623.36	167
НАМ	95,136.72	4,150.28	80
Item Rate	3,158.73	487.54	9
Other	1,958.88	117.74	1
Grand Total	192,803.07	10,776.85	260

Source: NHAI



PROJECT IMPLEMENTATION STATUS

HAM as preferred PPP model



As can be seen from figure above,

- The total project cost of HAM projects is higher than EPC model implying that HAM model has been widely accepted by NHAI and private sector for high-value road projects
- Award of road projects via BOT Toll model is negligible (less than 5% across all parameters) signaling that the model may not be relevant soon for the roads sector in the country.



PROJECT IMPLEMENTATION STATUS

Status of HAM Projects Awarded (H1-2020)

As of 30-Jun-20, 144 projects have been awarded via HAM PPP model, and overall status of these projects is summarized below.



As can be seen from figure above,

- Majority of projects (c.65%) were under-construction <u>due to be completed in 2021</u>.
- Out of the total projects tendered and awarded till date, c.7% of the projects were terminated with possible reasons being delays in financial close by concessionaire or land acquisition by government authority
- Around 7% of the awarded projects have been completed (including those which have been issued PCC) and are in operation phase



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Key Objective is to determine Bid Parameters

Bid Submission:

Bidders are required to submit two (2) bid parameters:

- Bid Project Cost
 - Cost of the project as assessed by the Bidder as on the Bid Due Date
- First Year O&M Cost
 - O&M cost assessed by the Bidder for first full year of O&M after Commercial Operation Date (COD), as on the Bid Due Date and the Concessionaire should consider all costs including major maintenance while quoting the first year O&M costs.
 - The O&M Cost shall be paid to the Concessionaire in each year of the O&M Period in accordance with the provision of the Concession Agreement
- Bid Project Bid shall be valid for a period of 120 days from the bid submission date.

Bid Evaluation:

- Bids would be evaluated on the basis of the lowest assessed Bid Price (the "Bid Price").
- The Bid Price shall be summation of

Net Present Value (NPV) of Bid Project Cost during the Concession Period

NPV of O&M cost (the "O&M Cost") during the O&M Period, required by a Bidder for implementing the Project

- The discount rate for calculation of NPV shall be average of one-year MCLR of top 5 Scheduled Commercial Banks + 1.25%
- Lowest Bidder is the Selected Bidder



Payment Mechanism – Construction Period

- Price Index Multiple (PIM)
 - Bid Project cost shall be adjusted for **Price Index Multiple (PIM)** every month which refers to the change in Reference Index from the bid submission date

Reference Index comprises of 70% WPI and 30% CPI E.g. if WPI inflation is 2% and CPI inflation is 5.5%, One-year inflation as PIM is 3.05% (70%*2.00% + 30%*5.50%)

- <u>Cash Construction Support:</u>
 - 40% of such adjusted Bid Project cost is payable to Concessionaire. Total 10 payment milestones during construction period; and 4% of Bid Project Cost (adjusted for Price Index Multiple) paid by Authority for each milestone.
 - Completion Cost for the project to be computed as per applicable escalations in PIM

Construction Period (days)	А	730
Inflation till CoD (%)	B = (A/365)*(3.05%)	6.10%
Bid Project Cost (Rs. Cr.)	С	800
Completion Cost (Rs. Cr.)	D = C*(1+B)	848.80

Table: Payment Milestones during Construction Period

Payment Milestone	% physical progress to be achieved by Concessionaire
1	5%
2	10%
3	20%
4	30%
5	40%
6	50%
7	60%
8	70%
9	80%
10	90%



Payment Mechanism – Operation Period

• <u>Semi-annual Annuity Payments:</u>

- Since a part of this Completion Cost is already paid by Authority to Concessionaire during construction, remaining cost to be paid by Authority in biannual installments over a period of 15 years
- The schedule of annuity payments (as a % of remaining Completion Cost) is provided in the adjacent table:

Interest on Annuity:

 Interest due and payable on the reducing balance of Completion Cost (due to Annuity payments during operation period) shall be equal to average of 1-year MCLR of top 5 scheduled commercial banks plus 1.25%.

<u>O&M Cost Payments:</u>

- Lump sum O&M Payments is payable by Authority as per the submitted bid by Concessionaire and reflected in the Agreement, adjusted for inflation as per PIM
- Any O&M expenses beyond such O&M Payments to be borne solely by Concessionaire

Table: Payment Milestones during Construction Period

Installment	Annuity (as % of Completion Cost due)	Installment	Annuity (as % of Completion Cost due)
1	2.10%	16	3.30%
2	2.17%	17	3.40%
3	2.24%	18	3.50%
4	2.31%	19	3.61%
5	2.38%	20	3.72%
6	2.45%	21	3.83%
7	2.52%	22	3.94%
8	2.60%	23	4.06%
9	2.68%	24	4.18%
10	2.76%	25	4.25%
11	2.84%	26	4.25%
12	2.93%	27	4.44%
13	3.02%	28	4.71%
14	3.11%	29	4.75%
15	3.20%	30	4.75%



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Model Structure

Indox

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NTB	Model Timelines	TB(Q)	Macroeconomics				
	Project Timelines		Monthly Construction Schedule				
	Capital Expenditure		Annuity Schedule - Operations				
	Project Funding						
	Debt						
	Debt Service Reserve Account						
	Equity						
	Working Capital						
	Revenue						
	Operating Expenses						
	Major Maintenance						
	Taxation						
	Depreciation						
Cons(M)	Capital Expenditure - Schedule	Funding(Q)	Uses and Sources of Funds	Ops(Q)	Revenue	Dep & Tax(Q)	Asset Classification
	Capital Expenditure		Funding Waterfall		Operating Expenses		Accounting Depreciation
	Annuity Payments - Construction		Equity		Major Maintenance		Tax Depreciation
	Mobilization Advance		Debt				Corporate Income Tax
	Funding Gap		Debt Service Reserve Account				Goods and Service Tax ("GST")
			Working Capital				
FS(Q)	Cashflow Waterfall	FS(A)	Profit and Loss Statement (P&L)				
	Profit and Loss Statement (P&L)		Cashflow Statement				
	Balance Sheet		Balance Sheet				
	IndAS 115 Accounts		Returns				



13-Nov-21

12-May-24

11-May-39

1,200.00

1,500.00

1,200.00

5.00

4.00

1,399.81

116.65%

116.47

190.86 Incl. MM

50.00

910

180

Model Outputs

Dashboard

Project Timeline		
Construction Start date	dd-mm-yy	
Construction Period	days	
Commercial Operation Date (CoD) - Target	dd-mm-yy	
Operation Period	#months	
Operation End Date	dd-mm-yy	

Project Summary

Estimated Project Cost (Authority Cost)	INR crores	
Project Length	km	
Bid Project Cost - Quoted (BPC)	INR crores	
EPC Cost (Actual)	INR crores	
O&M cost per year - Quoted	INR crores	
O&M Cost per year - Actual	INIR crores	

Bid Strategy

NPV (Adjusted Bid Price)	INIR crores
NPV as % of Authority Cost	24
O&M Costs - as per Benchmark	INIR crores
O&M Payments - as per bid quote	INIR crores

Financial Close		
Total Project Cost (60% of BPC)	INIR crores	900.00
10% less than (Estinated Project Cost - 40% of BPC)	INIP crores	540.00
Lower of above two values	INIR crores	540.00
Total Financial Close Amount	INIR crores	599.37
Completion Cost (as on CoD)	INIR crores	1,638.09

Uses of Funds
Engineering, Procurement and Construction
Concession Company's Costs
Interest During Construction - Debt
Initial DSRA funding
Operating Expenses till 1st Annuity Payment
Mobilization Advance Interest
Total Uses of Funds
Sources of Funds

Annuity Payments - Construction
Drawdown -Senior Debt
Drawdown - Equity - Shareholder Loan
Drawdown - Equity - Share Capital
Total Sources of Funds

Capital Structure

Total Project Costs
Annuity Payments - Construction
Project Funding Requirement
Debt Contribution
Equity Contribution

Equity Financing

Drawdown - Equity - Shareholder Loan Drawdown - Equity - Share Capital Additional Equity - Cash Shortfall Total

INR crores	1,200.00
INIP croves	
INIR croves	19.24
INR crores	29.92
INIR croves	
INR crores	-
INIR crores	1,249.16

INR crores	649.79
INR crores	419.56
INIR crores	89.91
INIR crores	89.91
INR crores	1,249.16

INR crores	1,249.16	
INR crores	649.79	
INR crores	599.37	
INR crores	419.56	70.00%
INR crores	179.81	30.00%

INP crores 89.91 INR crores 89.91 INIR crores 81.38 261.19

Debt Assumptions

Financial Close Date Tenor Grace F Averag Averag Minimum DSCR

Period	
e Cost of Debt	
e DSCR	
m DCCD	

p-21	
15.5	
180	
39%	
2.91	
1.72	

24	
INIP crores	
24	
INIR crores	

dd-mm-yy

#years

days

26

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J,

11.03%
141.42
19.30%
76.92

Other Parameters

Project Returns

Project IRR

Project NPV

Equity IRR

Equity NPV

Excess Input GST Net Cashflow

INIR crores INR crores

58.95
484.80



Model Outputs (contd.)

Profit and Loss Statement (P&L)

Revenue	
Construction Revenue	INR crores
O&M Revenue	INR crores
Interest Income - Financial Asset	INR crores
Interest Income - DSRA and MMRA	INR crores
Total Revenue	INR crores
Expenses	
Construction Costs	INR crores
O&M Costs	INR crores
Total Expenses	INR crores
EBITDA	INR crores
Depreciation	INR crores
EBIT	INR crores
Interest & Financing Costs	INR crores
Profit Before Tax	INR crores
Tax Payable	INR crores
Profit After Taz	INR crores

Cashflow Statement

Cash Flow from Operating activities

Revenue	INR croves
Operating Expenses	INIR croves
Taxes	INIR croves
Change in Working Capital	INR crores
Cash Flow from Operating activities	INR waves

Cash Flow from Investing activities

Engineering, Procurement and Construction	INIR crores
Concession Company's Costs	INR crores
Interest During Construction - Debt	INR crores
Initial DSRA funding	INR crores
Mobilization Advance Interest	INR crores
DSRA	INR crores
MMBA	INR crores
Cash Flow from Investing activities	INR crores

Cash Flow from Financing activities

Drawdown -Senior Debt	INR crores
Drawdown - Equity - Shareholder Loan	INR croves
Drawdown - Equity - Share Capital	INR crores
Additional Equity: To Fund Shortfall	INR crores
Other sources of funds	INR crores
Interest & Principal payments - Debt	INR crores
Interest & Principal payments - Shareholder Loan	INR crores
Dividends	INR crores
Last Period Equity and Retained Earnings	INR crores
Cash Flow from Financing activities	INR crores
Net Cashflows	INIR crores



Model Outputs (contd.)

Balance Sheet

Equity	
Share capital	INIR crores
Shareholder Loan	INIR croves
Retained earnings	INR croves
Total	INIR croves
Liabilities	
Debt	INIR croves
Mobilization Advance	INIR croves
Account Payables	INR crores
Contract Liability	INR crores
Total	INIR croves
Assets	
Financial Asset	INR crores
Contract Asset	INIR croves
Account Receivables	INIR croves
Cash	INIR croves
DSRA	INR crores
MMBA	INR crores
Total Assets	INIR crares

Returns

Cost of Capital Cost of Debt Cost of Equity Tax Rate Weighted Average Cost of Capital (WaCC)

Interest Tax Shield

Interest Payment - Debt Tax Shield

Project IRR

Cash Flow from operating activities	INR crores
Less: Interest Tax Shield	INR crores
Less: Capital Costs	INR crores
Free Cash Flow to Firm (FCFF)	INR crores
Project IRR	24
NPV	INR crores
Equity IRR	
Free Cash Flow to Firm (FCFF)	INR crores
Add: Drawdown-Debt	INR crores
Less: Debt service	INR crores
Add: Initial DSRA_funding	INR crores
Less: Addtions (release) from DSRA and Interest Income	INR crores
Free Cash Flow to Equity (FCFE)	INR crores
Equity IRR	24
NPV	INR crores





SPECIAL PURPOSE VEHICLE (SPV)

Contractual Structure



*For national highway projects, the off-taker is National Highways Authority of India (NHAI) and respective state governments for state highway projects.

**Annuity Payments consist of 40% capital costs during construction period; 60% capital costs during operation period, along with interest thereon, and O&M payments (in accordance with the amount quoted which will be inflation indexed).

Non-recourse financing

It is Cash flow Based Finance:

Project Financing		Corporate Financing		
1.	Lenders rely on cash flows of the project for repayment	1.	Lenders have access to cash flow from borrowers' various businesses	
2.	Project assets and/or contracts (e.g. concession agreement) as collateral	2.	Parent company's assets as collateral	
3.	Non-recourse or limited recourse	3.	Recourse	
4.	Risk-fencing of risk for sponsors	4.	Parent company/investors may be exposed to repayment risks	
5.	Off balance sheet treatment	5.	On balance sheet treatment	
6.	High debt to equity ratio, typically around 70%-90% of capital expenditure	6.	Moderate debt to equity ratio	
7.	Project has a finite life, hence debt must be fully repaid by the end of project life	7.	Assume company will remain in business for an indefinite period, hence debt can be rolled over	

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Change in Ownership (as per Model Concession Agreement)

- <u>Erstwhile provision</u> Private concessionaire to hold minimum 26% of issued and paid-up equity during construction period and 2 years thereafter.
 - For example, if the CoD is 31-Jan-24 and total equity investment is Rs. 120 cr. in a project, the concessionaire would need to maintain equity investment amount of minimum Rs. 31.20 cr. till 31-Jan-26
- Updated provision w.e.f. 10-Nov-20 Private concessionaire to hold minimum 26% of issued and paid-up equity during construction period and 6 months thereafter.
 - In the above example, the concessionaire to maintain equity investment amount of minimum Rs. 31.20 Cr. till 31-July-24 i.e. it will be able to recycle the equity capital of Rs. 31.20 cr. for another project 6 months after CoD.
- This change is beneficial especially for EPC players who have a strong project development capability; and would prefer to exit the project post commissioning to continue to build other such road projects.



Secondary Market Transactions (contd.)

Name of the Project	State	Vendors
Delhi-Agra Road Project Sale	Delhi, Uttar Pradesh	Reliance Infrastructure
Dhola Sadiya Bridge, Bomjur - Meka And Chowkham - Digaru PPP Roads Portfolio Sale (2020)	Assam, Madhya Pradesh	Navayuga
Essel Devanhalli PPP and Dichpally PPP Roads Sale (2020)	Karnataka, Madhya Pradesh, Telangana	Essel Infraprojects Ltd
Oddanchatram-Madathukulam 45.4Km Highway PPP Sale (2020)	Tamil Nadu	KNR Constructions Limited
Pandoh Bypass To Takoli 19Km Section PPP Sale (2020)	Himachal Pradesh	Shapoorji Pallonji Group
Sadbhav Engineering Eight Road Project Sale (2020)	Gujarat, Karnataka, Maharashtra, Rajasthan, Telangana	Sadbhav Engineering
Sai Maatarini Tollways Sale (2019)	Odisha	Lenders
Transstroy Tirupati Tiruthani Chennai Tollways Sale		Indian Bank
Welspun Enterprises Highway PPP Portfolio Sale (2021)	Delhi, Maharashtra, Uttar Pradesh, Uttarakhand	Welspun Group





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