

Rating Methodology – Hybrid Annuity Road Projects



[Issued in March 2025]

Background

To increase the pace of award and construction of national highways, the National Highways Authority of India (NHAI) launched hybrid annuity projects in January 2016. The model helps de-risk the developers and lenders from inherent shortcomings associated with conventional toll and annuity-based design, build, finance, operate, and transfer (DBFOT) model.

The following sections cover salient features of hybrid annuity projects:

Bid parameter: For the projects awarded before May 2022, bid parameter was the project life cycle cost, defined as net present value (NPV) of the quoted bid project cost (BPC) plus the NPV of the operations and maintenance (O&M) cost for the entire operations period. Bid is awarded to the developer quoting the lowest NPV for project life cycle cost. For projects awarded post May 2022, the bidding parameter was changed to only BPC, and O&M payments made as a defined percentage of BPC.

Escalation available in BPC: BPC is inflation-indexed [through a Price Index Multiple (PIM)], which is the weighted average of Wholesale Price Index (WPI) and Consumer Price Index (CPI) (IW) in the ratio of 70:30. The BPC adjusted for variation between the price index occurring within the reference index preceding the bid date and reference index date immediately preceding the appointed date shall be deemed to be the BPC at the commencement of the construction. BPC shall be changed to variation in PIM on monthly basis till the achievement of commercial operations date (COD) within approved extension of time (EOT).

Cash support for construction: For NHAI and The Ministry of Road Transport & Highways (MoRTH) awarded projects, 40% [it may vary in case of state-awarded Hybrid Annuity Model (HAM) projects] of the BPC shall be payable to the concessionaire by the authority. Concessionaire shall have to initially bear the balance 60% of the project cost through a combination of debt and equity.

Stable cash flow of annuity payments: Toll collection shall be the responsibility and revenue of the authority. Therefore, semi-annual annuity payments shall be made to the concessionaire by the Authority on completion of the project (BPC adjusted for price index multiple) for the balance 60% of the BPC. The annuity payments have been aligned with typical revenue profile for highway projects. Along with the annuity payments, interest shall be paid in the form of annuity on reducing balance of the final construction cost. For the projects awarded before November 2020, interest is payable at Bank rate + 3%, while for projects awarded post November 2020, interest is payable at average MCLR of top five schedule banks +1.25%.

O&M payouts by authority: O&M payments are to be made to the concessionaire and annuity by the Authority. Concessionaire shall remain responsible for the project maintenance till the end of the concession period.

Concession period: It shall comprise construction period, which shall be project-specific, with a fixed operations period of 15 years.

HAM- Credit evaluation framework

1. Funding Risk

HAM projects entail lower equity commitment due to provision of construction grant paid by the authority. Equity commitments for HAM projects typically ranges from 12% to 15% of the BPC of HAM. Hence, the financial strength of the promoters for timely infusion of equity and its fund raising capabilities are crucial for achieving financial closure of projects. Apart from equity and debt disbursements, timely release of construction grant from the authority is also crucial for timely progress of the project and inordinate delays in release of funds can lead to time over-run in projects.

2. Sponsor Evaluation

CARE Ratings considers credit strength of sponsor as important parameter for conventional DBFOT projects. In case of HAM projects, sponsor's project execution track record, bidding prudence, and commitment to support the project in exigencies are also important, in addition to the sponsor's financial flexibility, in light of the following:

- Focus on cost-based bidding requires in-depth assessment of project cost and O&M cost.
- Cost competency remains crucial to generate envisaged Internal Rate of Return (IRR).
- Emphasis on physical progress for release of grant, increases reliance on the sponsor.
- Inflation-indexed BPC protects the developers against price escalation to an extent. The extent of price escalation is difficult to factor at the time of financial closure. Hence, variations in cost due to higher-than-envisaged price escalation is required to be funded through the sponsor's support.

CARE Ratings critically examines the following parameters to evaluate sponsor risk:

- Demonstrated execution track record of sponsor with lower reliance on subcontracting.
- Sponsor's track record for completing the projects within envisaged time and cost parameter and signing of fixed-price engineering, procurement, and construction (EPC) contract with reputed EPC contractor or sponsor having good creditworthiness.
- Sponsors' track record of supporting the projects in case of exigencies.
- Ownership of the project special purpose vehicle (SPV). SPVs with single sponsor owning majority stake is considered better compared to joint ownership.
- Explicit support such as corporate guarantee from sponsor till execution of project and receipt of first annuity.
- Sponsor's financial flexibility and creditworthiness.

Despite non-recourse nature of the debt raised at SPV level, financial flexibility and execution track record of sponsor are crucial in the project implementation phase. The sponsor is required to fund cost overrun or shortfall, if any, till receipt of first annuity per sponsor support agreement entered with the lenders.

3. Project Implementation Risk:

Project implementation risk is partially mitigated with availability of 80% length of project before appointed date. Declaration of appointed date upon availability of 80% land on 3G basis (wherein only payment of compensation to land owners is pending) can impact the project progress in case of hindrances or subsequent protest from the land owner. The risk also remains in case the 80% Right of Way (RoW) provided is not contiguous.

Provision for deemed termination and clauses for issuance of provisional COD in case of completion of 100% work on the lands available within 180 days from appointed date also protect the interests of developers and lenders to a considerable extent. Per clauses of concession agreement, if the authority is unable to provide balance RoW within 180 days from the appointed date, it can be removed from the scope of the work under provision for a change in scope in the concession agreement.

CARE Ratings considers the following points for analysis of project implementation risk:

- Developer's track record in execution of large-sized EPC projects.
- Financial flexibility of sponsor to fund increase in working capital due to delay in receipt of construction grant or delay in debt disbursement.
- Availability of RoW on 3H basis in terms of both length and area and availability of contiguous RoW.
- Bidding prudence, that is, variation between authority cost and BPC, and difference between L1, L2, and L3.
- Achievement of financial closure and status of funds deployment by sponsor and lender.
- Status of clearances including forest clearance.
- Complexity of the project road in terms of presence of structural work and terrain.
- Stage of project progress and current project progress against stipulated progress.
- Status of de-scoping or de-linking of unavailable land and its impact on project progress.
- Status of approval of Extension of Timeframe (EOT) by NHAI, if any.
- Details of damages levied in case of delay in achievement of project milestones or PCOD, if any.

4. Cashflow Risk:

During operational phase, cash flow is assured in the form of annuity payments from Concessioneing Authority on semi-annual basis covering 60% of the inflation-indexed BPC and interest annuity. CARE Ratings also considers the track record of timely release of annuities from the relevant Concessioneing Authority. For NHAI projects, CARE Ratings has observed minor delays in receipt of first annuity due to procedural reasons while subsequent annuities have largely been on time. However, delayed annuity payments have been witnessed in certain state projects, hence making analysis of counterparty credit risk crucial.

5. O&M Risk:

O&M risk is partially offset due to fixed payment in the form of annuity which is also indexed to inflation movements with the base year considered as the year of bidding. However, developers could still face the risk of sharp increase in the O&M cost due to more-than-envisaged wear and tear of the project stretch. Increase in O&M cost other than inflation indexation in operational period and consequent breach of performance obligations by developers can potentially result in deduction of annuity payments. This risk increases in case of sponsors with moderate to weak credit profile.

O&M cost of the stretch depends on the traffic, terrain, and quality of road construction. O&M cost increases for the stretches dominated by heavy vehicular traffic and for highways situated under higher economic activity. O&M expenses generally remain lower for the state highways with relatively lower traffic. In case the road stretch is present in zones of high precipitation, possibilities of moisture percolating to bituminous layer is higher, which in turn results in increased O&M and major maintenance (MM) expenditure. Quality of road construction depends on design capacity of the road against actual traffic on the stretch and roughness index

(ranges between 2000 mm/km and 2500 mm/km; lower the better). O&M cost is expected to be significantly lower in case of rigid pavement compared to flexible pavement.

CARE Ratings considers the following points for analysis of O&M risk:

- Difference of O&M cost between L1, L2, and L3 and justification for wide variations; if any for the projects awarded prior to May 2022.
- Adequacy of gap between BPC and completion cost in case projects are awarded with lower O&M annuity.
- Comparison of O&M and MM cost with other similar projects/ or for the projects on stretch.
- Adequacy of MM reserve built-up.
- CARE Ratings also considers fixed price O&M contract with experienced contractor besides expertise of sponsor in managing operations of build-operate-transfer (BOT) projects, as some of the effective strategies to mitigate O&M risk. Cash flow cushion in operational period improves in case total project cost considered for financial closure (completion cost) is considerably lower than BPC. Cash flow cushion also varies based on actual completion cost against inflation indexation assumed, if any, in base case business model.

6. Interest Rate Risk:

Per model concession agreement, interest annuity shall be paid on reducing balance of BPC. Interest rate for the same shall be Bank rate + 3%. Hence, non-linear transmission of bank rate over lending rate and variable nature of annuity receipt shall impact the underlying debt coverage indicators. However, inflation-indexed completion cost provides partial relief from the credit perspective, wherever adequate. NHAI has linked the interest annuities to Marginal Cost of fund-based Lending Rate (MCLR) under revised concession agreements to mitigate the risk of non-linear transmission of bank rate.

7. Liquidity:

In HAM projects, post achievement of PCOD/COD, 1st annuity is received after 180 days. Hence, funding of six months of interest payment and routine maintenance expenses as a part of the project cost is viewed favourably over the projects, which are heavily reliant on sponsor. The creation of debt service reserve account (DSRA), especially prior to commercial operations date (COD) and major maintenance reserve account (MMRA) from project cash flows would be an added rating strength. If DSRA is created in the form of bank guarantee, renewal clauses of such bank guarantee before its expiry mitigates rollover risk. However, in absence of such clauses, rollover risk of DSRA bank guarantee generally lies with the sponsor. Stronger credit profile of the sponsor mitigates the rollover risk to an extent, while a moderate-to-weak credit profile of sponsor increases rollover risk associated with such bank guarantee and dilutes the liquidity support feature of DSRA.

8. Debt structure:

CARE Ratings also considers the debt structure while analysing HAM projects. Structural features such as well-defined waterfall priority, maintenance of minimum debt service coverage ratio (DSCR), restricted payment covenants triggers, cash trap, cash sweep, creation, and replenishment of DSRA, maintenance of MMRA from operating cash flows. A uniform debt amortisation structure or accelerated repayment structure with over 50% of repayment falling due in first half of the tenor are better placed over rear ended repayments, which exposes the company to refinancing risk. The time gap between annuity due date and debt servicing date is also examined.

Features such as presence of cross-default clause with group/sister companies; call/put option among others are also critically evaluated.

9. Impact of Goods Service Tax (GST) in operational HAM project:

With annuity payments being brought under the GST regime, operational HAM projects are eligible to receive a Change in Law (CIL) payment on annuities. While GST on interest annuities are being fully released by NHA, GST on construction annuity and O&M annuity shall be received per approved CIL rate per the extant guidelines laid down by the authority. CARE Ratings monitors the rate approval status by NHA and compares with available input tax credit (ITC) available to assess the impact on debt coverage indicators of the company. Overall, CARE Ratings considers the applicability of GST to be credit neutral for HAM projects.

Conclusion

The rating outcome is ultimately an assessment of the fundamentals and probabilities of change in the fundamentals. CARE Ratings analyses each of the above factors and their linkages to arrive at the overall assessment of credit quality of an issuer.

[For the previous version please refer to 'Rating Methodology – Hybrid Annuity Road Projects' issued in [October 2022](#)]

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