Roads and Highways -June 2020 update

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Overview

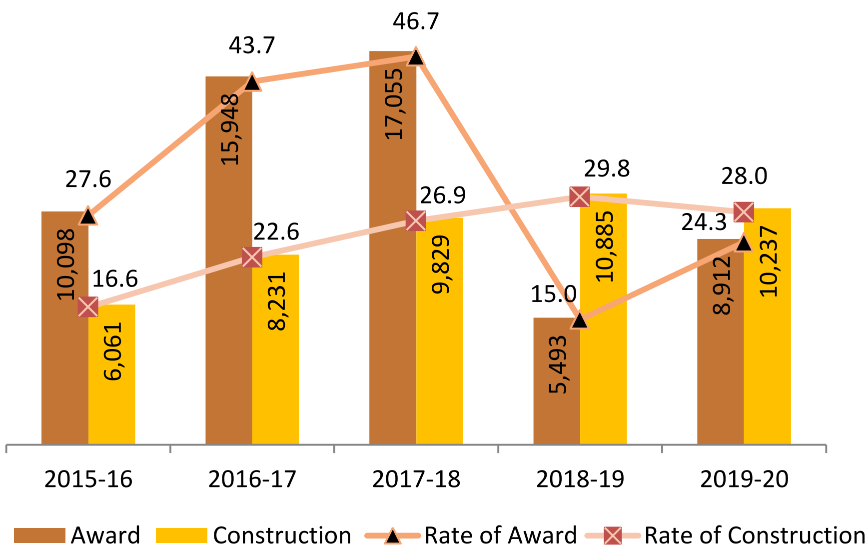
India has the 2nd largest road networks in the world, spanning over a total of 5.8 million kms (comprising of National Highways, Expressways, State Highways, Major District Roads, other District Roads and Village Roads). Over 64.5% of all goods in the country are transported through roads, while, 90% of the total passenger traffic commute via the road network.

Development of road networks leads to opportunities for industries to make future investments in logistics parks, industrial clusters and corridors.

Operational Indicators

Length of National Highways constructed and awarded

Chart 1: Length of National Highways constructed and awarded (Unit: km) and Pace achieved (Unit: km/day)



Source: Ministry of Roads and Highways, CARE Ratings

- Length of national highways construction has increased at a CAGR of 14% during FY16-20. Pace of construction per day too has increased from it being 16.6km/day during FY16 to 28km/day during FY20, but on the other hand y-o-y pace it has declined (for the first time in the last 5 years) by 6.2% during FY20 as compared with the 29.8km/day pace achieved during FY19.

- On the other hand NHAI accomplished the highest ever highway construction of 3,979 km during FY20. National Highway construction increased by 17.8% during FY20 as compared with the 3,380 km achieved during FY19. NHAI's initiative to declare appointed date only after handover of 80% land and higher awarding in FY17 and FY18 has resulted in steady increase in pace of construction. Going forward, pace of construction is expected to decline mainly due to lower awards in FY19 and FY20.

Mode of Awarding projects by the Ministry

Table 1: Bids Awarded by the Ministry (Unit: Total Length: kms; Approved Cost: Rs/crore)

	EPC		HAM		BOT	
	Length	Cost	Length	Cost	Length	Cost
2015-16	6,793	83,527	427	10,260	912	13,036
2016-17	8,445	82,238	2,628	39,622	469	5,942
2017-18	10,844	1,21,660	3,383	72,771	210	3,733
2018-19	3,453	43,279	870	18,352	62	334
2019-20 (up to Jan 2020)	3,108	44,872	40	736	7	2,680

Source: Document of Demands for Grants (2020-21) of Ministry of Road Transport and Highways

The share of HAM projects has decreased from 36.72% of the Rs. 198,164 crore projects awarded during FY18, to a mere 1.5% of the Rs. 48,288 crore projects awarded up to January, 2020 during FY20. This indicates that in terms of cost, 93% of the road projects awarded during FY20 has been awarded under the EPC model.

Method/Mode of Awarding projects by NHAI

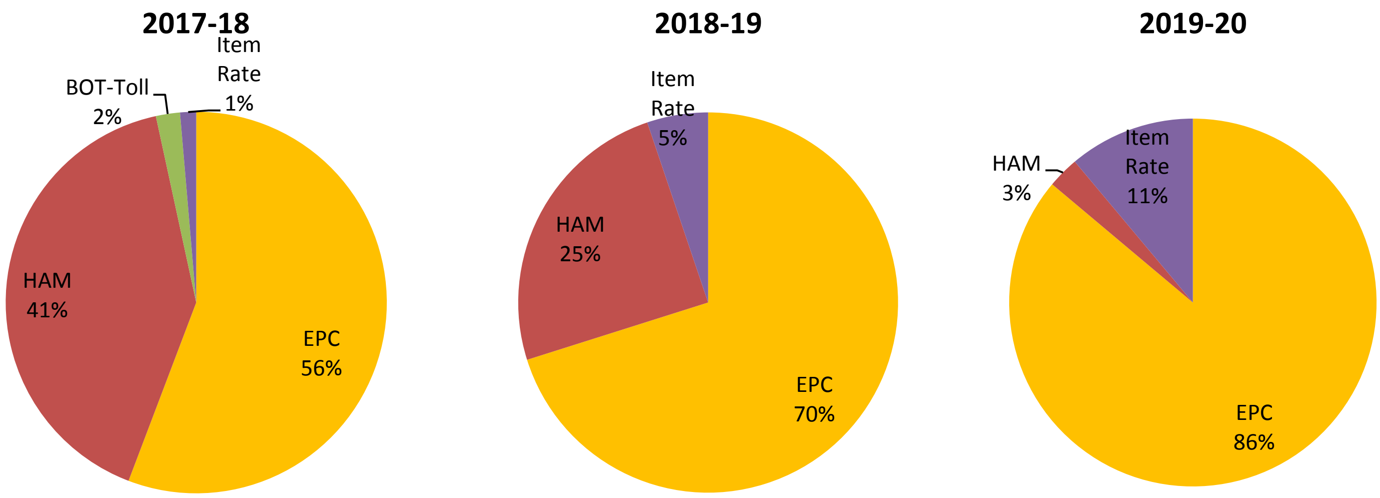
Table 2: Bids Awarded by NHAI over the years (Unit: Total Length: kms; Approved TPC: Rs/crore)

	2017-18		2018-19		2019-20	
	Total Length	Approved TPC	Total Length	Approved TPC	Total Length	Approved TPC
EPC	3,612	50,173	1,200	20,324	824	14,859
Item Rate	30	123	188	1013	257	2,023
HAM	3,236	80,862	874	13,538	40	736
BOT-Toll	398	4,792	-	-	-	-
Other	118	1,959	-	-	-	-
Total	**7,394**	**1,37,908**	**2,263**	**34,875**	**1,120**	**17,618**

Source: NHAI, CARE Ratings

TPC: Total Project Cost

Chart 2: Percentage share of mode of bids awarded by NHAI over the year



Source: NHAI, CARE Ratings

The recent shift in awarding bids/orders from the NHAI has shown an increasing preference for pure Engineering Procurement and Construction (EPC) orders instead of Hybrid Annuity Model (HAM) projects. EPC projects are those where the government bears the total project cost and private contractors do the work while HAM projects are those wherein the government pays 40% of the total project cost upfront and the developer/concessionaire initially pays the rest 60% which is later reimbursed by the government over the years. HAM is a hybrid version of the EPC and build-operate-transfer (BOT) model.

The key reason for this shift is challenging fund raising scenario and market risk associated with BOT projects leading to reduced bidding appetite from developers.

When Bharatmala, was approved during FY18, the standard operating procedure was to award 60% of the planned roads under HAM, 30% as EPC contracts and 10% as BOT projects, but now NHAI now wants to award projects depending on market conditions and focus more on EPC mode of project construction.

Given these facts, pure EPC projects worth Rs. 14,895 crore were awarded during FY20 as compared with the projects worth Rs 50,173 crore and Rs. 20234 crore during FY18 and FY19. EPC contracts are comparatively asset-light in nature.

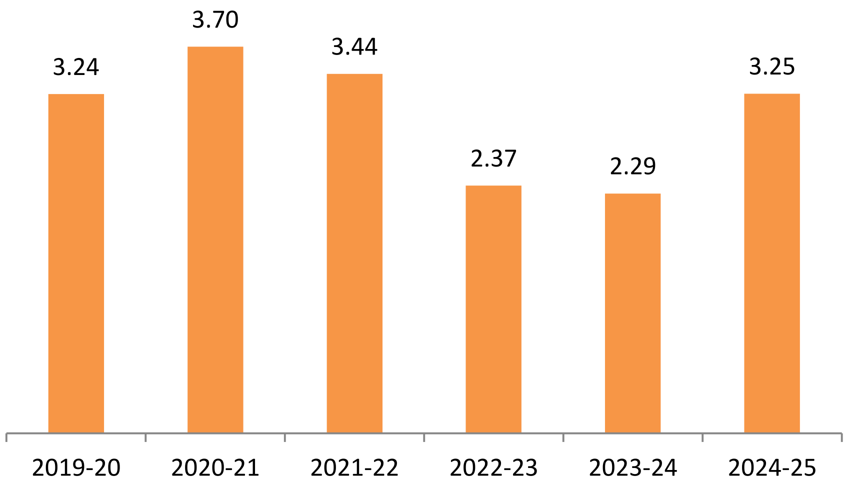
Government Initiatives/Support towards the Road and Highway sector

NIP

The government's ambitious National Infrastructure Pipeline which is to be implemented over the next 5 years (till FY25) is an attempt undertaken by the centre to facilitate economic revival by relying on infrastructure creation.

The NIP covers a gamut of sectors, rural and urban infrastructure as well and entails investments to the tune of Rs.102 lakh crs to be undertaken by the central government, state governments and the private sector.

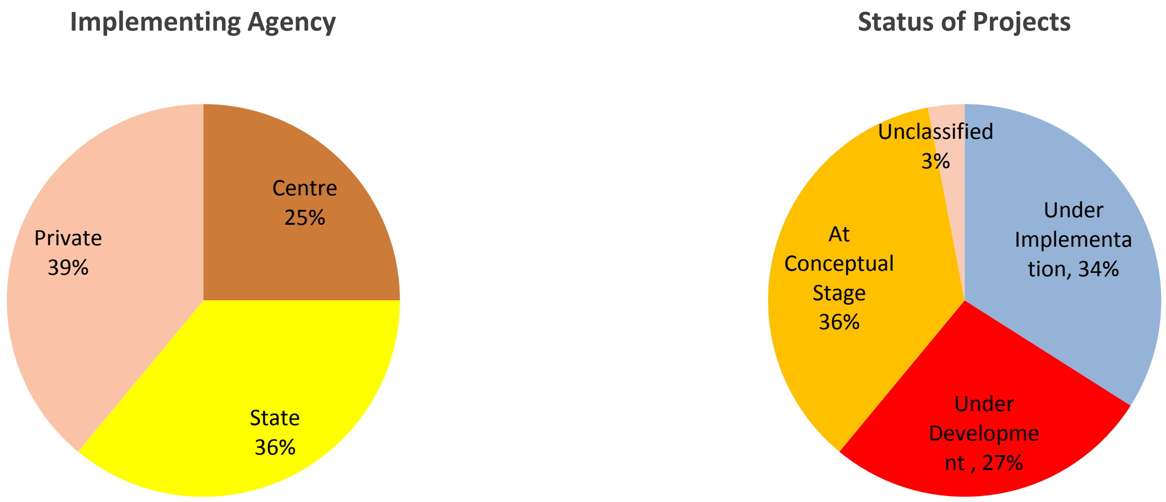
Chart 3: Project Capital Expenditure under the NIP for the roads and highway sector (Unit: Rs/lakh crore)



Source: NIP Documents

Share of project capital expenditure earmarked towards the roads and highway segment is around 19% which also includes the amount kept aside for "no phasing". It's the highest amount allocated to a single sector under the NIP (Rs.19.6 lakh crore).

Chart 4: Contours of the NIP w.r.t. Roads and Highways



Source: NIP Documents

Prior to the NIP the centre and state were major funding sources for the roads sector but with the introduction of the Hybrid Annuity Model (HAM) during FY16 it inertly aims to revive PPP (Public Private Partnership) model in highway construction, by encouraging investments from the private sector in road construction. As per the contours of the NIP, 39% of the projects are to be implemented by the private sector followed by the state and centre at 36% and 25% respectively. With respect to status of the projects, 34% are already under the implementation stage and the major projects include the Delhi-Mumbai Expressway and the Chennai-Bengaluru expressway.

- ***Progress on Bharatmala Pariyojana***

Bharatmala Pariyojana is the flagship program introduced by the government of India during FY18, which involved the development of 65,000 km of national highways. It has now been subsumed under the array of projects under the NIP.

Under Phase-I of Bharatmala Pariyojana, the Ministry has approved implementation of 34,800 km of national highways in 5 years with an outlay of Rs 5.35 lakh crore for development of about 9,000 km length of Economic corridors, about 6,000 km length of Inter-corridor and feeder roads, about 5,000 km length of National Corridors Efficiency improvements, about 2,000 km length of Border and International connectivity roads, about 2,000 km length of Coastal and port connectivity roads, and about 800 km length of Expressways. NHAI has been mandated development of about 27,500 km of national highways under Bharatmal Pariyojna Phase-I.

A total of 246 road projects with an aggregate length of about 10,100 km (which is approximately 29% of the project contracts under Phase-I) have been awarded till February, 2020 under Bharatmala Pariyojana with total project cost of Rs. 2,38,413 crores approximately, which also include projects on Greenfield Corridors. Further, 1,255 Km has been constructed under Bharatmala Project in FY 2019-20.

Phase I was to implemented by FY22 but it seems it likely to get delayed given only 29% of the project contracts have been awarded and now projects under the Bharatmala will be implemented on the basis of its financial viability that means projects which attract stretches with high traffic density will be prioritised will be taken up on a priority basis, so that they can yield more revenue thus delaying the overall execution.

Table 3: Phase-I of Bharatmala Pariyojana

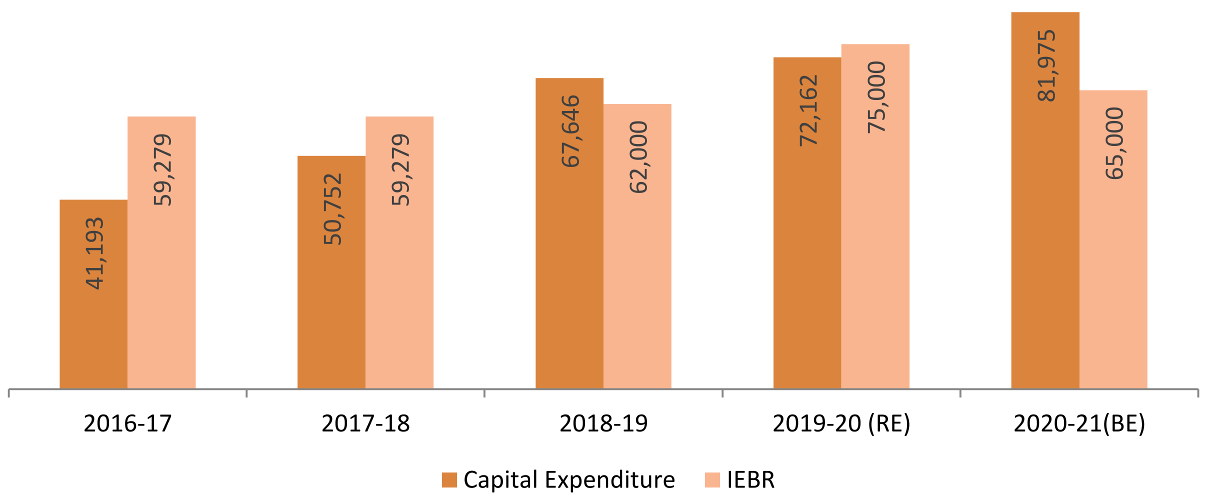
Scheme	Length (km)	Cost (Rs. crore)
Economic Corridors	9,000	1,20,000
Inter-Corridors & feeder roads	6,000	80,000
National Corridor Efficiency improvement	5,000	1,00,000
Border & International connectivity roads	2,000	25,000
Coastal & port connectivity roads	2,000	20,000
Expressways	800	40,000
Sub Total	**24,800**	**3,85,000**
Ongoing Projects, including NHDP*	10,000	1,50,000
Total	**34,800**	**5,35,000**

Source: Ministry of Roads and Highways

The Bharatmala Pariyojana Phase-I is to be funded from cess collected from petrol & diesel, budgetary support collected from toll apart from external assistance, expected monetisation of NHs through TOT (Toll-Operate-Transfer), Internal & Extra Budgetary Resources (IEBR) and private sector investment as per the laid out Financing Plan up to FY22.

Budgetary Allocations towards Roads and Highway creation

Chart 5: Capital Expenditure and IEBR allocated towards Roads and Highways creation (Unit: Rs\crore)



Source: Budget Documents

RE: Revised Estimates BE: Budgeted Estimates

The central government allocation towards development of roads has grown at a CAGR of 15.3% during FY17-21. Expenditure towards road asset creation, on an average as against the total capital expenditure of the government, has a share of 20-22%. After defence, central government allocations towards the railways and roads and transportation have always been the highest.

National Highways Authority of India (NHAI) has been authorized to raise Rs. 65,000 crore as Internal and Extra Budgetary Resources (IEBR) which is a 13.3% decrease over the R.E. IEBR of Rs. 75,000 crore authorised during FY20.

FASTag

According to the Government mandate, all lanes of fee plazas on National Highways except one lane have been declared as FASTag Lane of the fee plaza. As a result, waiting time in FASTag lanes has significantly reduced. However, the waiting time in the hybrid lane which accepts cash has increased because of non-FASTag vehicles. The automated IT system of collection of fee through FASTag provides for discounts for up-and-down/return journeys through toll gates.

Issues and Challenges

Funding issues: There is a huge funding gap which is required versus the funding which is coming in for the sector. Road projects are increasingly facing financial closure issues. Reasons include reluctance of banks to lend, high share of NPAs, asset liability mis-match and banks reaching infrastructure lending caps.

The sector faces a shortfall in terms of budgetary funding provided by the government. NHAI was authorised to raise Rs 75,000 in the form of IEBR during FY20, but the Ministry has only been able to raise about 64.9% of the projected IEBR amount up to January, 2020 and amount authorised to be raised during FY21 has also been reduced.

Table 4: IEBR approved to be raised during 2019-20 v/s funds raised (Unit: Rs/crore)

Particulars	Amount (as approved by NHAI Board) *	Amount raised till 31.01.2020
54 EC Bonds	5,000	3,556
LIC/EPFO/Bharatmala Bonds/Private placement of taxable bonds	20,000	29,326
Term Loan (SBI)	7,000	5,000
NSSF	40,000	10,000
Masala Bonds	3,000	-
Bond ETF	-	800
Total :	**75,000***	**48,682**

Source: Document of Demands for Grants (2020-21) of Ministry of Road Transport and Highways

* Amount are interchangeable

Commercial viability of certain projects has also not been able to stimulate interest from private players. The HAM method of awarding road projects was supposed to revive private sector investment in the industry but it has turned out to be a mixed bag for the roads sector, which is also waning banks in funding HAM projects Delay in the implementation of contractual reforms under HAM and moderation in credit profile are the prominent reasons for delay in financial closure for HAM projects. Certain concessionaries have been subjected to high debt levels, weak traffic and slow pace of execution which also results in delay of repayment of debt to banks. Given this experience, banks are only selectively funding road projects.

Delay in monetization of assets: The Government has been rapidly trying to monetize existing road projects to meet the excess capital requirements to fund new projects, but is unable to attract the necessary investor interest. Currently the only avenue used by the NHAI is offering stretches of roads under the Toll-Operate-Transfer model which is also getting tepid response due to apprehensions of the concessionaires regarding to the TOT model and bids received are not meeting the Net Asset Value as well. Bid for TOT-4 for Rs. 2,166 Crore was expected to be auctioned off by February 2020 and TOT-5 for Rs. 2,800 Crore too during FY20 but now it has been delayed due to outbreak of the COVID-19 pandemic. Now due to the expected fall in traffic due to sealing of state borders, successful rollout of TOT seems challenging.

The NHAI had also planned to unveil an InvIT in order to monetise road assets but the launch of that too seems to be delayed now at the moment given investor sentiment is pretty low and prospects of expecting passable traffic level in the short run also seems unlikely. Further, implementation of Force Majeure clause for compensating developers for toll suspension period of Covid19 outbreak is less effective marked by allowing only extension of concession period in lieu of reimbursement expected for O&M and interest payment. Usually projects which attract high density traffic are monetized quicker as it supplicates the needed investor interest.

Concluding Remarks and Outlook for FY21

Pace of construction

While creation and operation of quality road infrastructure is a major requirement and imperative to economic growth, the **roads and highway construction is to fall by 24-26% and pace of construction is to be around 20-21km/ per day during FY21 from 28 km/per day during FY20**.

- Awards for construction of national highways has also fallen from the peak of 17, 055 kms awarded during FY18 to 5,493 kms and 8,912 kms awarded during FY19 and FY20 which will to lead to an attenuated pace of highway construction during FY21 as well. The sector is already impacted by the lower awards in FY18 and FY19 due to reduced bidding appetite from developers and now with the COVID-19 pandemic prevalent in the economy, it has further increased execution woes.
- The reverse migration of workers and onset of the monsoon season will also have a negative bearing on construction activities and slow down its execution.
- District officials who carry out the land acquisition activities are busy on COVID-19 duty and financial crunch of states, which have to bear a part of the acquisition cost are facing a shortage of funds which too will add onto the slow pace of highway construction for state projects.

Mode of Awards and Funding issues

Increasing costs, limited available funding and waning interest of private players in PPPs are pertinent challenges which are being faced by the sector. CARE Ratings expects awarding of upcoming projects largely via the EPC mode which is fully funded by the government, for the time being as private sector's ability to invest has been limited and the industry is unable to attract capital from foreign players as well.

- Private players are facing arbitration issues, HAM projects also faced execution issues due to delay in implementation of contractual reforms of de-scoping and lengthy process of issuing extension of time and private investment brought in through BOT toll model has remained subdued as well over the years.
- The sharp fall in toll collections due to less traffic and a slowdown in the pace of asset monetization are expected to delay fund raising plans of the developers apart from increasing support requirement for these projects. **Further, classification of toll suspension under Non-Political Force Majeure (FM) event, renders the relief extended to developers less effective as it allows only extension of concession period as against reimbursement expected under political FM event towards O&M and interest payment.**
- These factors may even put NHAI's plans to raise funds through auctioning of road stretches via TOT, launching of an InvIT and securitisation of toll revenue by accessing long-term borrowing from banks at risk as well while outbreak of the COVID-19 pandemic has also delayed the process.

Table 5: Road to Recovery

Road	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
Construction												
Tolling												

Source: CARE Ratings

Towards Recovery Partial Recovery Stressed

The sector is to remain in the red till September 2020 as the reverse migration of workers and the onset of the monsoon season will negatively affect construction activities. Tolling operations have resumed but the collection is affected as the number of vehicles commuting is much below the usual traffic due to the sealing of state borders and social distancing norms adopted. Nevertheless, freight dominated stretches are expected to bounce back early as reflected from the initial trend of achieving 60-70% of toll collection for some of these stretches post resumption of toll collection. Toll collection is expected to fully recover December 2020 onwards as there could be an increase in traffic due to interstate movement as well.

Appendix

Salient features of the models being adopted for construction of National Highways:

Public Funded Projects: In such types of model, 100% funding is provided by Government. Different types of Public Funded Models are as under:

(i) **Item Rate**: Detailed design, specifications & estimates are provided by the employer and contractor is paid for the quantities executed as per item wise rates quoted in the Bid. Cost/Risk of any variation in quantity is borne by the employer.

(ii) **Engineering, Procurement and Construction (EPC)**: In such types of models, full freedom to plan, design and construction is given to the contractor and core requirements of design, construction, operation and maintenance are specified in schedules. Scope for adopting best practices and innovation to optimize the efficiency and economy is available in such types of model. Payments are linked to specified stages of construction. The Contract Price is subject to adjustment on account of variation in the cost and change in scope ordered by employer.

Public Private Partnership Projects (PPP):

(i) **BOT (Toll)**: Private developers/ operators, who invest in toll-able highway projects, are entitled to collect and retain toll revenue for the tenure of the project concession period. Responsibility for design and development of the project is vested with the Concessionaire under this mode. He is also responsible for Operation and Maintenance (O&M) of the project for the entire concession period after it is developed and put to commercial operation. The tolls are prescribed by the authority on per vehicle per km basis for different types of vehicles.

(ii) **BOT (Annuity)**: As in case of BOT (Toll) Projects, responsibility for design, development and O&M of the Project Section for the entire Concession Period is vested with the Concessionaire for the Project. Concessionaire is given Annuity Payments during the O&M period as per provisions of the Concession Agreement. Tolling rights during O&M period vest with the employer after declaration of Commercial Operation of the developed section.

(iii) **Hybrid Annuity Model (HAM)**: Under this model, 40% of the Project Cost is paid by the Government/ Executing Agency as Construction Support/ Grant to the private developer and the balance 60% is to be arranged by the successful bidder during the construction period. The Concessionaire is paid back the amount of 60% along with interest and Operation & Maintenance (O&M) payment in the form of annuities during operation period. While the concessionaire is responsible for the Operation & Maintenance during the concession period, traffic risk is taken by the project Executing Agency/ Employer.

Tolling rights during the O&M period are vested with the employer after declaration of commercial operation of the developed section.

Table 6: Risk parameters for Road PPP models

Mode	Financing Risk	Traffic Risk	O&M Risk
BOT (Toll)	Concessionaire	Concessionaire	Concessionaire
BOT (Annuity)	Concessionaire	Government	Concessionaire
HAM	Concessionaire (partly)	Government	Concessionaire

Source: CARE Ratings

Asset Monetisation methods

Toll- Operate- Transfer (TOT): Government has also taken initiatives for raising funds through monetization of completed road projects on Toll-Operate-Transfer (TOT) mode. The receipts are then reinvested for infrastructure expansion/ upgradation. Under this, the right of collection of Toll Fees for operational public-funded NH projects is to be assigned for a predetermined period to the Concessionaires (developers/ investors) against upfront payment of a lump-sum amount. O&M obligations of such projects would rest with the concessionaires until the completion of the period under TOT Model.

The central government felt monetisation of public-funded highways would create a framework for attracting long-term institutional investment on the strength of future toll receivables. It was felt that international investors generally hesitated from taking construction risk, but were willing to look at de-risked Brownfield road assets. The CCEA has also given approval to NHAI for raising funds from banks through securitization of user fees.

Infrastructure Investment Trust: InvITs are innovative, tax-efficient vehicles that allow developers to monetise revenue-generating real estate and infrastructure assets, while enabling investors to invest in these assets without actually owning them. Such monetisation benefits developers by allowing them to release capital for funding new projects and provides liquidity to investors, as units of the trust are listed on the exchanges.

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