NATIONAL HIGHWAYS INFRA INVESTMENT MANAGERS PRIVATE LIMITED
Registered Office: G-5 & 6, Sector-10, Dwarka, New Delhi– 110075,
Tel: 011-25076536, FAX: 25076536. Email: nhiimpl@nhai.org
CIN: U65929DL2020GOI366835

Date: 14.11.2022

Corporate Relations Department **BSE Limited** Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai - 400 001 **Scrip Code: 543385**	**The Listing Department,** **National Stock Exchange of India Limited** Exchange Plaza, C-1, Block G, Bandra Kurla Complex, Bandra (East), Mumbai – 400 051 **Symbol: NHIT**

Dear Sir/Madam,

Sub: Report for the half year ended 30th September, 2022

Pursuant to the Regulation 23 of SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended, please find attached the report of National Highways Infra Trust ("**NHAI InvIT**") for the half year ended 30th September, 2022.

Please take the note of the same.

Sincerely,

For National Highways Infra Trust

By Order of the Board
National Highways Infra Investment Managers Private Limited

GUNJAN Digitally signed by GUNJAN Date: 2022.11.14 16:42:16 +05'30'
Gunjan Singh
Company Secretary and Compliance Officer

Half Yearly Report

Report for the Half Year ended 30th September 2022

We National Highways Infra Investment Managers Private Limited, Investment Manager of National Highways Infra Trust ("Trust") hereby submit the half yearly report for the period from April 1, 2022 to September 30, 2022 of the Trust alongwith financial information for the half year ended September 30, 2022.

1. Investment Manager's brief report of activities of the InvIT and summary of the audited consolidated financial statements for the year of the InvIT.

   The brief Report of the activities of the Invit is attached as Annexure-A

2. Brief details of all the assets of the InvIT, project-wise.

   The brief details of all asset attached as Annexure -B

3. Details of revenue during the year, project-wise from the underlying projects.

   Revenue details attached as Annexure -C

4. Brief summary of the valuation as per full valuation report as at the end of the year.

   Executive Summary of Valuation as on 31.07.2022 attached as Annexure -D

5. Any information or report pertaining to the specific sector or sub-sector that may be relevant for an investor to invest in units of the InvIT

   Road Sector Report attached as Annexure-E.

6. Details of changes during the year pertaining to

   a. Addition and divestment of assets including the identity of the buyers or sellers,purchase or sale prices and brief details of valuation for such transactions.- **There are no such additions or divestments during the period upto 30.09.2022.**

   b. Valuation of assets and NAV (as per the full valuation reports).

      Valuation Report along with Enterprise Value as on 31.07.2022 attached as Annexure -F.

   c. Borrowings or repayment of borrowings (standalone and consolidated) - **As per below table**

Sr. No.	Type of Loan	Amount Outstanding as on 01.04.2022 (Rs in Crore)	Principal Paid during April 2022 to September 2022 (Rs in Crore)	Interest Paid during April 2022 to September 2022 (Rs in Crore)	Balance Outstanding as on 30.09.2022 (Rs in Crore)
1	Secured Term Loan	1470	5.00	54.02	1465

   d. Credit rating

      Rating Letters issued by Care Rating Limited and India Rating & Research as on 10.10.2022 is attached as Annexure -G

e. Sponsor, Investment Manager, Trustee, valuer, directors of the Trustee orInvestment Manager or sponsor, etc.

The details are attached as Annexure-H

f. Clauses in trust deed, investment management agreement or any other agreemententered into pertaining to activities of InvIT

No change.

g. Any regulatory changes that has impacted or may impact cash flows of theunderlying projects- Nil

h. Change in material contracts or any new risk in performance of any contractpertaining to the InvIT

- **Following contracts were awarded**
    - **Manpower Services for collection of fee in respect of 08 No. Toll Plaza.**
    - **Technical Due Diligence for 05 No.s road assets for year end valuation.**
    - **Traffic Due diligence for 05 Nos road assets (08 Toll Plaza) for year end valuation.**
    - **Contract awarded for initial improvement works in respect of Palanpur- Abu Road - Swaroopganj.**

i. Any legal proceedings which may have significant bearing on the activities orrevenues or cash flows of the InvIT- **Nil**

j. Any other material change during the period -

The National Highways Infra Projects Private Limited (Project SPV) entered into three agreements:-

- **Concession Agreements for a period of 20 years for three new road assets ;**
- **Supplementary Project Implementation and Management Agreement and;**
- **Transition Support Agreement**

7. Revenue of the InvIT for the last 5 years, project-wise.

The date of appointment of projects is 16 December, 2021. The details of Project wise Revenue is attached as Annexure C for the period 16th December, 2021 to 30th September, 2022.

8. Update on development of under-construction projects, if any

Not Applicable

9. Details of outstanding borrowings and deferred payments of InvIT including any creditrating(s), debt maturity profile, gearing ratios of the InvIT on a consolidated and standalone basis as at the end of 30th September, 2022

Sr. No.	Type of Loan	Balance Outstanding as on 30.09.2022 (Rs in Crore)	Credit Rating	Debt Maturity Profile	Gearing Ratio Standalone Basis	Gearing Ratio Consolidated Basis
1	Secured Term Loan	1465	AAA	Structure Quarterly Payments started from 31st December, 2021 and ending on 31st March, 2041	Debt- Equity Ratio: 0.23 Debt Service coverage ratio: 4.43 Interest Service coverage ratio : 7.18	Debt- Equity Ratio: 0.25 Debt Service coverage ratio: 4.43 Interest Service coverage ratio : 1.51

10. The total operating expenses of the InvIT along with detailed break-up, including all fees and charges paid to the Investment Manager and any other parties, if any duringthe year

    The details are attached as Annexure-I.

11. Past performance of the InvIT with respect to unit price, distributions made and yield for the last 5 years, as applicable

    Summary of Distribution as on 30.09.2022 is attached as Annexure - J

12. Unit price quoted on the exchange at the beginning and end of the first half of FY 2022-23, thehighest and lowest unit price and the average daily volume traded during the first half of FY 2022-23.

Date	OPEN	HIGH	LOW	PREV. CLOSE	vwap	VOLUME	VALUE (In Rs.)	No of trades
19-Aug-22	114	114	114	120	114	200000	2,28,00,000	1

13. (1) Details of all related party transactions during the year, value of which exceedsfive per cent of value of the InvIT [assets]- **Nil**

    (2.) Details regarding the monies lent by the InvIT to the holding company or the special purpose vehicle in which it has investment in.

    The Trust (NHIT) had lent an amount of Rs. 6056.40 Crore during financial year 2022-23 to M/s National Highways Infra Projects Pvt Ltd (Project SPV).

15. Details of issue and buyback of units during the year, if any- **Nil**

16. Brief details of material and price sensitive information.

    During the half year, the Trust, from time to time, has been providing price sensitive details of material and price sensitive information to the stock exchanges in accordance with the InvIT Regulations.

17. Brief details of material litigations and regulatory actions, which are pending, against the InvIT, sponsor(s), Investment Manager, Project Manager(s), or any of their associates and the Trustee] if any, as on 30th September, 2022.

    The details of Material Litigations is attached as Annexure- K

18. Risk factors

    The details of Risk Factor is attached as Annexure- L

19. Information of the contact person of the InvIT

Compliance Officer of the Investment Manager (acting on behalf of the Trust)
The Compliance Officer is Ms. Gunjan Singh. Her contact details are as follows:

Gunjan Singh
Address: G-5 & 6,
Sector – 10,
Dwarka, New Delhi 110 075
Tel: +91 11-2507 4100 Extn: 1671
Fax: +91 11 2507 4100
E-mail: cs.nhim@nhai.org

20. Updated Valuation Report by valuer taking into account any material developments during the previous half- year.

Enclosed as part of Annexure - F

21. Any other material developments during the half year.

Enclosed as part of reply to Point 6 (j) above.

Annexure- A

Activities and Performance- April 2022

Executive Summary

- Toll Operations running under Transition Agreement with NHAI (upto June 15, 2022)
  - Assured remittance being deposited regularly by Tolling contractors into Project SPV account
  - Operations & Maintenance is managed by NHAI appointed contractors
- EBITDA of ~ Rs 43 cr for April 2022
  - Benefit of ~ 10% hike in user fee rates from April 1, 2022
- Preparations underway for takeover of operations from June 16, 2022
  - RFP launched for toll (manpower) contractors and improvement works
  - Takeover of contracts (System Integrator) and appointment of new agencies (Revenue assurance)
  - Recruitment of manpower in Project SPV
- 2 projects offered by NHAI for acquisition – Diligence plan including indicative budget/ timelines to be put up to Board shortly for its consideration
- Project SPV audit completed and financials approved by SPV Board; Financials of Trust and IM along with audit report to be put up in upcoming Board meeting on May 23

ACTIVITIES AND PERFORMANCE- MAY 2022

EXECUTIVE SUMMARY

- Toll Operations under Transition Agreement with NHAI (upto June 15, 2022)
  - Assured remittance being deposited regularly by Tolling contractors into Project SPV account
  - Operations & Maintenance is managed by NHAI appointed contractors
- EBITDA of ~ Rs 44 cr for May 2022 in Project SPV
- Preparations underway for takeover of operations from June 16, 2022
  - RFP process (managed by PMC) underway for selection of toll contractors – financial bids opened on 7th June
  - Transfer of System Integrator's contract being undertaken
  - Process initiated for appointment of agencies for Revenue Assurance
  - Key recruitments of human resources in Project SPV in advanced stage
- RFP process (managed by PMC) underway for improvement works (Sch. B) – Bids due on June 13, 2022
- 3 projects offered by NHAI for acquisition – Diligence commenced
- Statutory audit of Trust & Project SPV completed – financials for FY2021-22 approved by the respective Boards

Activities and Performance- June 2022

Executive Summary

- Toll Operations under Transition Agreement with NHAI were taken over by the Project SPV with effect from 21st June 2022 (8:00:00 am)
  - Assured remittance were deposited till 21st June (Shift A) by Tolling contractors into Project SPV account
  - Project SPV operating the toll collection operations through outsourced manpower agencies; Post 21st June, money is being directly credited to Project SPV account
  - Manpower agencies appointed through a RFP process managed by PMC
- EBITDA of ~ Rs 43.4 cr for June 2022 in Project SPV
- Strengthening of operations post takeover :
  - Process for appointment of agencies for Revenue Assurance Mechanism underway; currently accessing a revenue assurance dashboard on a pilot basis
  - Key recruitments of human resources in Project SPV in advanced stage
- RFP process (managed by PMC) underway for improvement works (Sch. B) – Bids due in July 2022
- 3 projects offered by NHAI for acquisition – Diligence underway
- FY 2023 budget for all three entities (Trust/IM/SPV) approved by the respective Boards

Activities and Performance- July 2022

Executive Summary

Business Area	Remarks
Operations	• Toll operations taken over by Project SPV wef June 21, 2022 after the end of Transition Period. • Toll revenue slightly higher than assured revenue (before adjusting for operating cost)
Traffic	• Higher than projected traffic at Belgaum Kagal project and lower than projected traffic at Palanpur – Abu Road – Swaroopganj projects
Revenue	• Toll Revenue of Rs 47.1 cr (4% higher than budget) in July 2022 – mainly on account of 100% tariff at Belgaum Kagal (Vs 75% projected tariff)
Financial	• EBITDA of ~ Rs 42.8 cr in July 2022 in Project SPV, in line with projections
Round 2 Acquisition	• Traffic/ Technical diligence completed. Key intermediaries appointed.
Procurement	• Toll revenue assurance and Transaction legal counsel for debt identified • Process underway for other consultants
Policies/ Compliances	• Policies adopted by the SPV board; Training for employees initiated • Standard Operating Procedures (SOPs) and Delegation of Powers (DOPs) finalized; to be presented to the board shortly
Transition Plan	• Substantial components of Transition Plan completed • Details presented in Annexure 2
Human Resources	• All key positions in IM have been resourced except GM (Traffic) and Head – IT • SPV recruitment underway with many positions resourced and others advertised

Activities and Performance- August 2022

Executive Summary

Business Area	Remarks
Operational Revenue	• Toll Revenue of Rs 46.1 cr (2% higher than budget) in August 2022 – mainly on account of 100% tariff at Belgaum Kagal (Vs 75% projected tariff) • Toll revenue marginally higher than assured revenue (before adjusting for operating cost)
Traffic	• Higher than projected traffic at Belgaum Kagal (Kognoli) and Kothakota Kurnool projects and lower than projected traffic at Palanpur – Abu Road – Swaroopganj and Chittorgarh – Kota projects
Financial	• EBITDA of ~ Rs 41.6 cr (16% higher than budget) in August 2022 in Project SPV
Round 2 Acquisition	• Acquisition of assets and fund raise approved by Board. Offer made to NHAI
Round 3 Offered	• NHAI offered additional projects of aggregate length of 472 km to NHIT for acquisition
Procurement	• Transaction legal counsel, Lead Managers and other intermediaries for debt appointed • Initial improvement works: financial bids opened
Policies/ Compliances	• Standard Operating Procedures (SOPs) and Delegation of Powers (DOPs) approved by Board • Internal Audit underway at project sites

Activities and Performance- September 2022

Executive Summary

Business Area	Remarks
Operational Revenue	• Toll Revenue of Rs 44.7 cr (1% lower than budget) in September 2022 • Toll revenue slightly lower than assured revenue (before adjusting for operating cost)
Traffic	• Lower than projected traffic at the plazas due to monsoon
Financial	• EBITDA of ~ Rs 40.2 cr in Sep 2022 in Project SPV
Round 2 and 3 Acquisition	• R2: Funds raised through Institutional Placement. Process underway for mobilization through preferential issue and bridge loan • R3: Preliminary discussions underway, will shortly seek Board's approval for budget and commencement of diligence
Procurement	• LoA issued for AP and AS projects • RFP underway for CK project
Policies/ Compliances	• Internal Audit completed at AP, AS and CK (Bassi) project sites; underway at KK and CK (Aroli and Dhaneshwar)

BRIEF DETAIL OF ALL ASSETS OF INVIT

The following are summaries of the concession agreements entered into by the National Highways Infra Projects Private Limited in relation to Toll Roads.

Concession Agreement between Concessionaire and NHAI dated March 30, 2021 in respect of the Kotha Kota Kurnool Project

The Concessionaire has entered into a concession agreement for operation, maintenance, and management of the Kotha Kota Kurnool Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Kotha Kota Kurnool Concession Agreement"), for a period of 30 years from the Appointed Date (i.e. December 16, 2021) or such date on which the Kotha Kota Kurnool Concession Agreement is terminated by a termination notice ("Kotha Kota Kurnool Concession Period").

"Kotha Kota Kurnool Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Kothakota Bypass-Kurnool	Telangana	135.469	211.000	74.622

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 19,401.00 million as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated March 30, 2021 in respect of the Chittorgarh Kota Project

The Concessionaire has entered into a concession agreement for operation, maintenance, and management of Chittorgarh Kota Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Chittorgarh Kota Concession Agreement"), for a period of 30 years from the Appointed Date (i.e., December 16, 2021) or such date on which the Chittorgarh Kota Concession Agreement is terminated by a termination notice ("Chittorgarh Kota Concession Period").

"Chittorgarh Kota Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Chittorgarh-Kota and Chittorgarh Bypass	Rajasthan	891.29	1052.429	160.500

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 11,934.00 million as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated March 30, 2021 in respect of the Maharashtra Belgaum Project

The Concessionaire has entered into a concession agreement for operation, maintenance, and management of Maharashtra Belgaum Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Maharashtra Belgaum Concession Agreement"), for a period of 30 years from the Appointed Date (i.e., December 16, 2021) or such date on which the Maharashtra Belgaum Concession Agreement is terminated by a termination notice ("Maharashtra Belgaum Concession Period").

"Maharashtra Belgaum Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Maharashtra/Karnataka Border (Kagal)-Belgaum	Karnataka and Maharashtra	515.00	592.705	77.705

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 23,287.00 million as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated March 30, 2021 in respect of the Abu Road – Swaroopganj Project

The Concessionaire has entered into a concession agreement for operation, maintenance, and management of Abu Road – Swaroopganj Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Abu Road – Swaroopganj Concession Agreement"), for a period of 30 years from the Appointed Date (i.e., December 16, 2021) or such date on which the Abu Road – Swaroopganj Concession Agreement is terminated by a termination notice ("Abu Road – Swaroopganj Concession Period").

"Abu Road – Swaroopganj Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Abu Road-Swaroopganj	Rajasthan	646.000	677.000	31.000

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 7,417.00 million as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated March 30, 2021 in respect of the Palanpur Abu Road Project

The Concessionaire has entered into a concession agreement for operation, maintenance, and management of the Palanpur Abu Road Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Palanpur Abu Road Concession Agreement"), for a period of 30 years from the Appointed Date (i.e., December 16, 2021) or such date on which the Palanpur Abu Road Concession Agreement is terminated by a termination notice ("Palanpur Abu Road Concession Period").

"Palanpur Abu Road Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Palanpur/Khemana- Abu Road	Gujarat and Rajasthan	601.000	646.000	45.000

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 11,465.00 million as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated September 26, 2022 in respect of the Agra Bypass

The Concessionaire has entered into a concession agreement for tolling, operation, maintenance and transfer of Agra Bypass Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Agra Bypass Concession Agreement"), for a period of 20 years from the Appointed Date (i.e., the date on which all Conditions Precedent have been satisfied) or such date on which the Agra Bypass Concession Agreement is terminated by a termination notice ("Agra Bypass Concession Period").

"Agra Bypass Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Agra Bypass	Uttar Pradesh	0.000	32.800	32.800

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 10,299.10 million, , as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated September 26, 2022 in respect of the Borkhedi Kelapur Project

The Concessionaire has entered into a concession agreement for tolling, operation, maintenance and transfer of Borkhedi Kelpaur Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Borkhedi Kelapur Concession Agreement"), for a period of 20 years from the the Appointed Date (i.e., the date on which all Conditions Precedent have been satisfied) or such date on which the Borkhedi Kelapur Concession Agreement is terminated by a termination notice ("Borkhedi Kelapur Concession Period").

"Borkhedi Kelapur Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Borkhedi-Wadner-Deodhari-Kelapur	Maharashtra	36.600	175.000	138.150

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 13,658.20 million, as a Condition Precedent.

Concession Agreement between Concessionaire and NHAI dated September 26, 2022 in respect of the Shivpuri Jhansi Project

The Concessionaire has entered into a concession agreement for tolling, operation, maintenance and transfer of Shivpuri Jhansi Project Highway (as defined below) on toll, operate and transfer (TOT) basis (the "Shivpuri Jhansi Concession Agreement"), for a period of 20 years from the Appointed Date (i.e., the date on which all Conditions Precedent have been satisfied) or such date on which the Shivpuri Jhansi Concession Agreement is terminated by a termination notice ("Shivpuri Jhansi Concession Period").

"Shivpuri Jhansi Project Highway" means the Site comprising the existing road comprising:

Project Highway	State	Start (Km)	End (Km)	Length
Shivpuri Jhansi	Madhya Pradesh	1305.087	1380.387	75.300

As consideration for the grant of the Concession, the Concessionaire has paid a concession fee to NHAI equivalent to ₹ 4,539.36 million, as a Condition Precedent.

Annexure C

Project Wise Revenue Details from 16/12/2021 to 30/09/2022

Rs. in Million

Month	Abu Road Swaroopganj	Palanpur Aburoad	Kothakota Kurnool	Belgaum-Kagal	Chittorgarh Kota	Total *
16-12-2021 to 31-03-2022	181.20	221.36	385.76	344.10	261.77	**1,394.19**
01-04-2022 to 30-06-2022	169.67	214.81	408.18	332.63	247.65	**1,372.94**
01-07-2022 to 30-09-2022	151.32	221.92	444.82	345.89	207.61	**1,371.56**

Annexure - D

RBSA

RBSA Valuation Advisors LLP

Private and Confidential

30th August 2022

National Highways Infra Investment Managers Private Limited
G-5 & 6, Sector-10, Dwarka
Delhi 110075

Sub: Executive Summary of Enterprise Valuation of three new Toll Road projects, pursuant to SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended.

Dear Sir,

We refer to our appointment letter dated 29th December 2020 wherein RBSA Valuation Advisors LLP ("RBSA" or "We" or "us") was appointed by National Highways Infra Investment Managers Private Limited ("NHIIMPL"/ the "Investment Manager"), as an independent valuer, as per Regulation 2(zzf) of the SEBI (Infrastructure Investment Trust) Regulations, 2014 ("SEBI InvIT Regulations"), for carrying out the valuation of National Highways Infra Projects Private Limited ("NHIPPL" or "SPV").

National Highways Infra Trust ("NHIT" or the "Trust" or "InvIT") is registered with the Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InvIT Regulations. NHIIMPL is acting as Investment Manager to the Trust, NHAI is acting as Sponsor to the Trust, and IDBI Trusteeship Services Limited ("Trustee") is acting as Trustee to the Trust, within the meaning of the SEBI InvIT Regulations. NHIPPL is a wholly owned subsidiary of NHIT. NHIPPL has been incorporated as a special purpose vehicle and currently encompass 5 Toll road projects. NHIPPL has entered into concession agreements with NHAI for the aforementioned 5 Toll road projects under the Toll, Operate and Transfer ("TOT") model.

We understand that the management of NHIIMPL (the Management") is evaluating a proposal to acquire additional three Toll road projects (together referred to as the "Specified Projects"/ "R2 Projects") by NHIPPL, under the TOT model (the "Proposed Transaction"). It is envisaged that NHIPPL will enter into a concession agreement with NHAI for the Specified Projects if the Proposed Transaction is consummated.

The Specified Projects proposed to be acquired by NHIPPL on a TOT basis, in addition to the existing five projects, are as follows:

Sr. No.	Name of Section	NH	Total Length (Kms)	Toll Plaza	Start Kms	End Kms
1	Agra Bypass	NH-2 – NH-3	32.800	Raibha	176.800 KM of NH-2	13.030 KM of NH-3
2	Shivpuri to Jhansi	NH-27	75.300	Raksha	1305.000 KM of NH-27	1380.387 KM of NH-27
3	Borkhedi-Wadner-Deodhari-Kelapur	NH-44	138.150	Daroda and Kelapur	36.600 KM of NH-44	175.600 KM of NH-44

Source: Information provided by the Management

RBSA VALUATION ADVISORS LLP

RBSA
RBSA Valuation Advisors LLP

In connection with the Proposed Transaction, we have carried out the Fair Enterprise Valuation of the Specified Projects as of 31st July 2022 ("Valuation Date").

We have analyzed the information provided by/ on behalf of the Investment Manager through broad inquiry, analysis and review but have not carried out a due diligence or audit of such information. We have relied on the explanations and information provided by/ on behalf of the Investment Manager. We have no present or planned future interest in the Sponsor, the SPV or the Investment Manager except to the extent of our appointment as an independent valuer. Our professional fees for the valuation are not contingent upon the values reported herein. Our valuation analysis should not be construed as an investment advice specifically, we do not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Trust.

Our valuation analysis must be considered as a whole. Selecting portions of our analysis or the factors we considered, without considering all factors and analysis together could create a misleading view of the process underlying the valuation conclusions. Valuation is a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on any particular factor or analysis.

Our valuation conclusion included herein complies with the SEBI InvIT Regulations and guidelines, circular or notification issued by SEBI there under.

Valuation Analysis

The Discounted Cash Flow ("DCF") method under the Income Approach has been adopted for the Enterprise Valuation of the Specified Projects. Free Cash Flow to Firm method under DCF has been applied based on the projected financials of the Specified Projects provided by the Management of NHIIMPL (the "Management"). The Enterprise Value of the Specified Projects as of 31st July 2022 has been estimated assuming them to be collectively forming a business, on a 'going concern value' premise. The Enterprise Value has been computed by discounting the free cash flows to the firm until the end of the concession period of 20 years beginning from 1st October 2022, using a WACC of 10.60% computed as of 31st July 2022. Since the proposed effective implementation date is 1st October 2022, the cashflows have been discounted as of 30th September 2022.

RBSA VALUATION ADVISORS LLP

Enterprise Valuation of the Specified Projects has been carried out considering *inter-alia* Traffic Study and Technical Reports of independent consultants, Business plan/ Projected financial statements of the Specified Projects and other information provided by/ on behalf of the Management, industry analysis and other relevant factors and is estimated at INR 2,825 Crore as at 31st July 2022.

This letter should be read in conjunction with our detailed Report for the valuation of the Specified Projects, including the Assumptions and Limiting Conditions stated therein.

Thanking You

For **RBSA Valuation Advisors LLP,**
(RVE No.: IBBI/RV-E/05/2019/110)

RShah

RBSA VALUATION ADVISORS LLP

Name: Ravishu Vinod Shah
Designation: Partner
Asset Class: Securities or Financial Assets (RV No.: IBBI/RV/06/2020/12728)
Date: 30th August 2022
Place: Mumbai

Annexure-6

Research

CRISIL
An S&P Global Company

Roads and Highways

2022

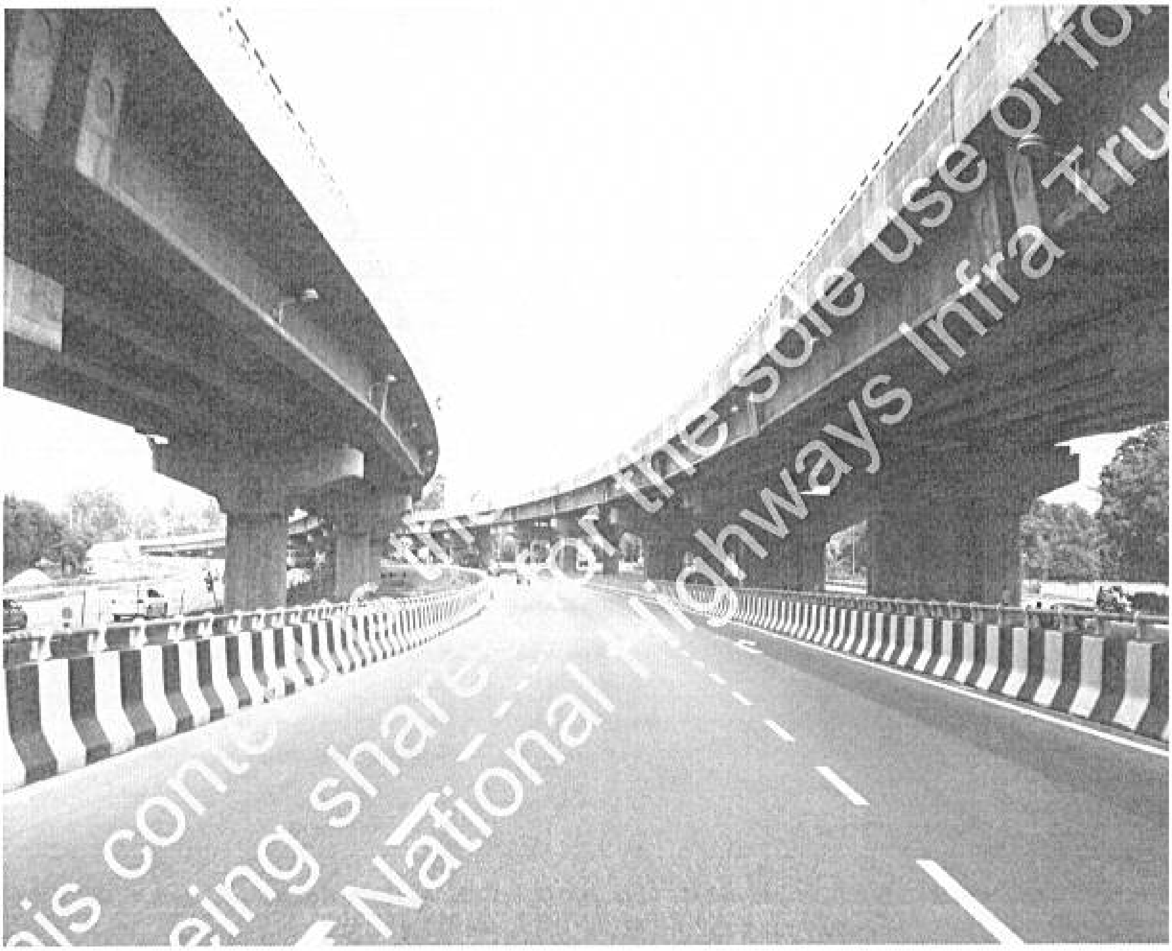


Table of Contents

Sections

1.0 Our view: Summary

Policy push aimed at improving private participation in national highways

The following are the recent policy changes that the MoRTH and NHAI have undertaken to improve private participation in the sector and increase competition (more details in National Highway and Competition chapters):

- Technical and financial bidder eligibility criteria reduced for HAM and EPC projects, which would promote the entry of smaller players
- Changes in the hybrid-annuity model (HAM) concession agreement aimed at protecting developers' returns and easing their cash flows during the construction period
- Changes in the Build-Operate-Toll (BOT) concession agreement to reinstate developer interest in the model

Apart from this, the government has taken various steps under the Atmanirbhar package to mitigate the impact of Covid-19 on the sector:

- Extension of time (EOT) of up to 3-6 months for all projects and relaxation of milestone achievement
- Monthly payment mechanism, instead of milestone-based payments
- Reduction in performance security from 5% to 3%, release of retention money to the extent of work done
- Additionally, Covid-19 emergency loan facilities and moratorium on loan repayment up to August 2020
- Extension of concession period for BOT-toll operators, due to toll suspension and restriction in movement during lockdowns

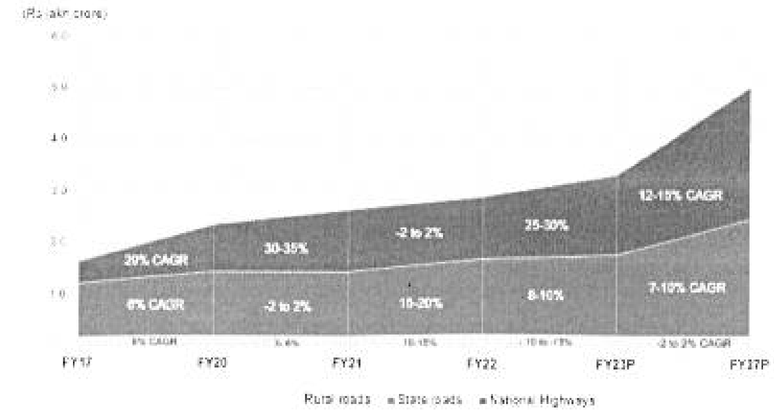
Despite brief aberrations, decent growth momentum expected in fiscal 2023 and beyond

Despite brief hiccups that were witnessed first in fiscal 2021 where state spends were constrained due to COVID and then in fiscal 2022 where elongated monsoons hampered National Highway construction, the sectors medium term growth story remains intact. We derive comfort from the Bharatmala and NIP pipeline of DPR ready projects, higher awards in fiscal 2022 and revival in state capex.

Despite the pandemic, National highway capex grew by 30-35% in fiscal 2021, boosted by the COVID relief measures taken under Atmanirbhar Bharat.

Further in fiscal 2022, even though construction in km terms declined by 22%, in Rs crore terms capex was flattish, cushioned by higher share of Greenfield 6 & 8 lane expressways that cost 3x than that of a 4 lane highway. We expect a 25-30% growth on this lower base and subsequently a 12-15% over the medium term on the high base.

Momentum to continue, supported by Bharatmala and NIP pipeline



E: Estimated, P: Projected

Note: Capex excludes the land-acquisition costs

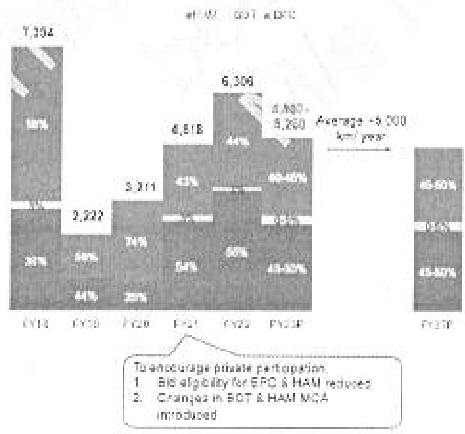
Source: NHAI, MoRTH, State budget documents, PMGSY, CRISIL Research

NHAI awarding to moderate, Bharatmala Phase 1 stretches on

National Highways Authority of India (NHAI) awarding has witnessed a sequential rise from merely 2,222 km in fiscal 2019 to 6,306 km in fiscal 2022. Fiscal 2021 was a pivotal year since despite the COVID-induced disruptions, there was a healthy growth in awarding. The NHAI awarded 4,818 kms in the fiscal 2021 which was a three fiscal high back then. Of these, 54% were awarded under the Hybrid Annuity Model (HAM), 3% under the Build-Operate-Toll (BOT) mode and rest under the Engineering, Procurement and Construction (EPC) mode. Additionally, favorable changes in the BOT and HAM agreements, and relaxation of bidder eligibility criteria not only indicated a clear policy shift to improve private-sector participation but also aided the spurt in the HAM awards. In fiscal 2022, the awarding momentum continued unabated as the NHAI awarded 6,306 kms in the fiscal year. The share of HAM and EPC in the awarding increased marginally to 55% and 44% respectively while projects under the BOT model accounted for only a paltry 1%.

In fiscal 2023, as per CRISIL Research estimates, NHAI awarding is expected to slow down to ~5,000 kms while the respective shares of HAM, EPC and BOT in the total awarding are expected to remain at similar levels vis--vis fiscal 2022. A limited rise in budgetary support coupled with the higher capex for 70% of high-value expressways currently under construction, could defer NHAI awards under Bharatmala Phase 1 beyond fiscal 2024 the year construction was originally scheduled to be completed. Over the medium term, it is expected that the NHAI would continue to award ~5,000 kms per year on an average between fiscals 2024 and 2027. Furthermore, the shares of HAM, EPC and BOT in the awarding are expected to remain largely stable without any significant deviations.

55% of projects awarded under HAM in FY22, share to remain similar



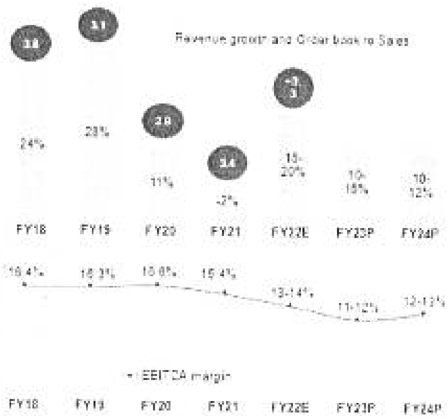
Source: NHAI, CRISIL Research

Revenue growth to sustain, margins to be under pressure

Due to higher awarding and orderbook to sales 3.4 times revenue growth for fiscal 2022 is estimated at 15-20%. We expect a 10-15% increase in revenue for EPC road players in fiscal 2023 and a sustained growth of 10-12% yoy in fiscal 2023 due to high orderbooks providing visibility.

Margins to be in the range of 13-14% in fiscal 2022 due to higher input costs. However, margin pressures due to intensified competition continues to be a pain point on the industry. We expect a further dip to 11-12% in fiscal 2023. In fiscal 2024, as input prices would likely correct, we expect margins to be in the 12-13% range.

Healthy orderbook provide revenue growth visibility, however margins to suffer due to increasing competition and rising prices



Source: Company reports, CRISIL Research

2.0 Investments: National highways

NHAI awarding to moderate in fiscal 2023, Bharatmala Phase 1 stretches on

National Highways Authority of India (NHAI) awarding has witnessed a sequential rise from merely 2,222 km in fiscal 2019 to 6,306 km in fiscal 2022. Fiscal 2021 was a pivotal year since despite the COVID-induced disruptions, there was a healthy growth in awarding. The NHAI awarded 4,818 kms in the fiscal 2021 which was a three fiscal high back then. Of these, 54% were awarded under the Hybrid Annuity Model (HAM), 3% under the Build-Operate-Toll (BOT) mode and rest under the Engineering, Procurement and Construction (EPC) mode. Additionally, favorable changes in the BOT and HAM agreements, and relaxation of bidder eligibility criteria not only indicated a clear policy shift to improve private-sector participation but also aided the spurt in the HAM awards. In fiscal 2022, the awarding momentum continued unabated as the NHAI awarded 6,306 kms in the fiscal year. The share of HAM and EPC in the awarding increased marginally to 55% and 44% respectively while projects under the BOT model accounted for only a paltry 1%.

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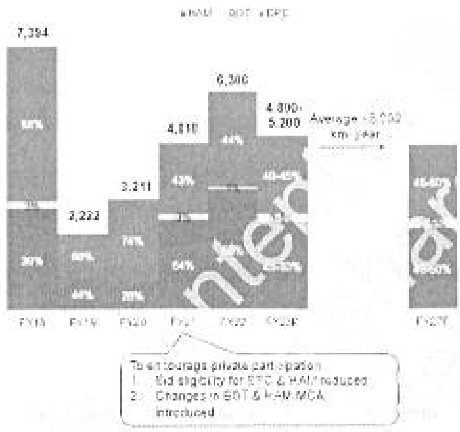
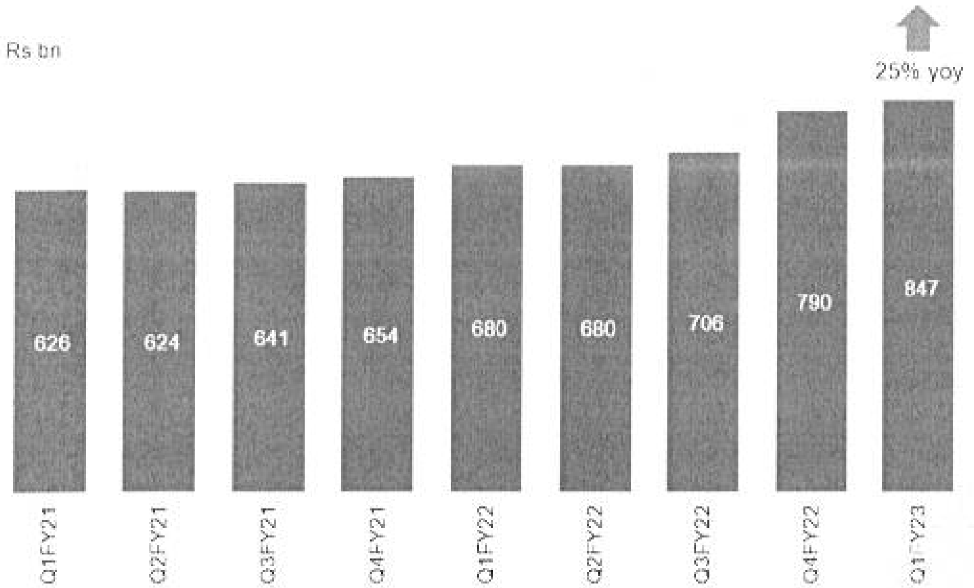
55% of projects awarded under HAM in FY22, share to remain similar



The higher awarding is also reflected in key players' orderbook, which has grown by 25% on-year in Q1 of fiscal 2023. This is a key positive for the sector as it provides good revenue visibility for the incumbent developers.

Orderbook also seen a steady growth due to higher awarding



Note: Data on order book is based on 5 key road players Ashoka Buildcon, Dilip buildcon, KNR construction, IRB infra, PNC Infratech.

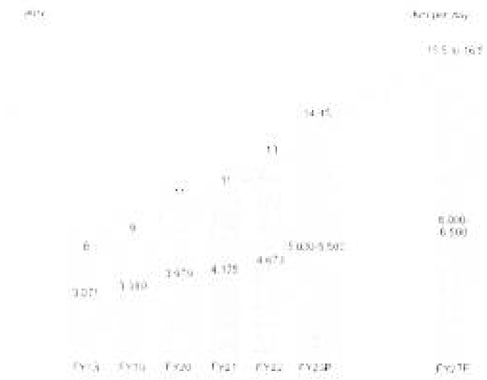
Source: Companies, CRISIL Research

National Highway construction is also rising steadily with focus on swifter execution

Despite the lockdowns and labour-related issues, developers made up for lost time and construction at NHAI projects rose 5% on-year to 4,175 kms in fiscal 2021. Acceleration in project awards, sharper focus on resolving land acquisition issues, and the Atmanirbhar Bharat initiatives to ease liquidity (monthly milestone payments, release of rentention money, reduction in performance secuirty & extension of 3-6 months in milestones & SCODs) for EPC road players augured well for the pace of construction. In fiscal 2022, NHAI's focus on swifter execution of projects paid dividends as 4,673 kms were constructed in the fiscal which translated into a 12% growth compared to the last fiscal.

CRISIL Research expects fiscal 2023 NHAI construction to be in the range of 5,000-5,500 kms on the back of higher awarding witnessed in the previous fiscal. Construction activities have faced significant roadblocks so far in the current fiscal as the rising prices of key input materials like cement, steel, bitumen etc have led to the developers delaying the procurement of the said materials. This has had a direct impact on construction activities as the pace of construction has slowed down. However, given the prices of these key commodities have already shown signs of cooling off, it is expected that the pace of construction activities would pick up post monsoons. Over the medium term, the pace of construction is expected to rise steadily to reach ~16 km per day by fiscal 2027.

NHAIs pace of construction rising steadily with continued focus on swifter execution



Source: NHAI, CRISIL Research

Policy push for HAM enabled higher share in awarding

NHAI awards roads & highway projects under:

- EPC
- BOT
- HAM

The Ministry and NHAI, post multiple suggestions from various stakeholders have ammended the HAM Model Concession Agreement across the below mentioned paramters in Oct 2020. These are largely aimed to protect developers' returns and ease their liquidity.

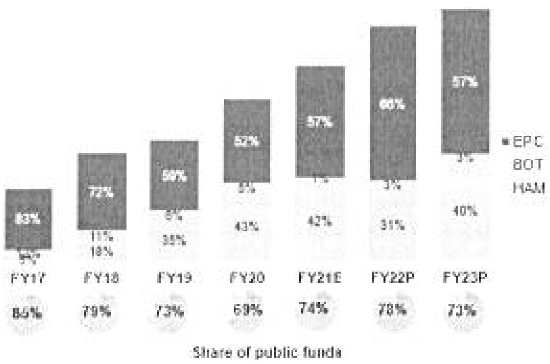
Recent changes in HAM MCA incorporate developers' concerns

	Old Clause	Revised Clause	Impact
Annuity Payments	Interest on annuity payments linked to RBI determined Bank Rate + 3%	Interest on annuity payments linked to average of one year MCLR of top 5 Scheduled Commercial Banks + 1.25%	Differential between cost of borrowing and interest on annuity reduced thus preventing erosion of developers' returns due to RBI repo rate changes
Milestone Payments	5 instalments each equal to 8% of the Bid Project Cost	10 instalments, each equal to 4% of the Bid Project Cost	Quicker payments helping developers' liquidity
Change in ownership	Original sponsor/ concessionaire shall hold at least 26% of equity during construction period and 2 years thereafter	Original sponsor/ concessionaire shall hold at least 26% of equity during construction period and 6 months thereafter	Quicker stake sell-off would ease up developers' balance sheets to bid for new projects
Financial Closure	No clarity on amount on FC	FC to be undertaken for an amount no lower than either: 1. Total Project Cost (60% of BPC); or 2. 10% less than (Estimated Project Cost minus 40% of Bid Project Cost)	Would likely prevent termination of projects due to inadequate financing
Dispute resolution board	In case of a dispute, either party may call upon the Independent Engineer to mediate.	Failing mediation by the IE, either party may require such dispute to be referred to the Dispute Resolution Board (DRB).	Quicker dispute resolution mechanism to prevent stuck projects.
Others	Interest mobilization advance linked to bank rate. Termination payments based on previous milestone payments.	Interest on mobilization advance linked to MCLR. Termination payments based on new milestone payments.	NA

Despite the higher HAM awarding, CRISIL Research's estimates of split for the NHAI capex mix indicates that as share of EPC remains high, the share of public funds would remain over 70% over the next two fiscals. Thus, NHAI funding would remain critical to sustain the sector forward.

As capex under EPC and HAM remains high, burden falls on public funds

(NHAI Capex Mix)



P: Projected Source: NHAI, CRISIL Research

Few HAM projects terminated due to land acquisition issues

Even though execution of HAM has picked up, the risk to HAM projects on account of delays in the appointed date persists. A few of these projects have been terminated:

Terminated HAM projects:

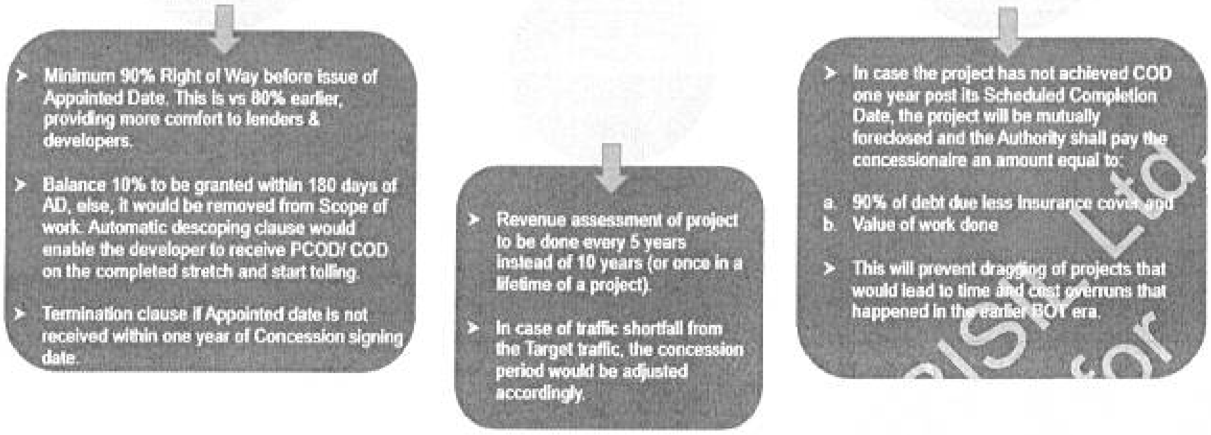
Project	Concessionaire	Termination effective
Vizag Port road	Sadbhav Infrastructure	Jul-19
Meensurutti to Chidambaram	KNR Construction	Apr-19
Puducherry-Poondiyankuppam Highway	IRB Infrastructure	Nov-19
Poondiyankuppam-Sattanathapuram	IRB Infrastructure	Nov-19

Source: Company reports, CRISIL Research

Changes in BOT MCA were also introduced

In order to improve private participation via the BOT-toll mode, NHAI & the ministry also introduced changes to the BOT MCA aimed at key issues such as land acquisition, revenue assessment in case of traffic shortfall and stuck projects. Despite these changes, we don't expect any BOT awarding this fiscal due to the uncertainty in traffic growth on account of COVID-19 restrictions and muted economic activity this fiscal.

BOT MCA revamped to reinstate interest in the model



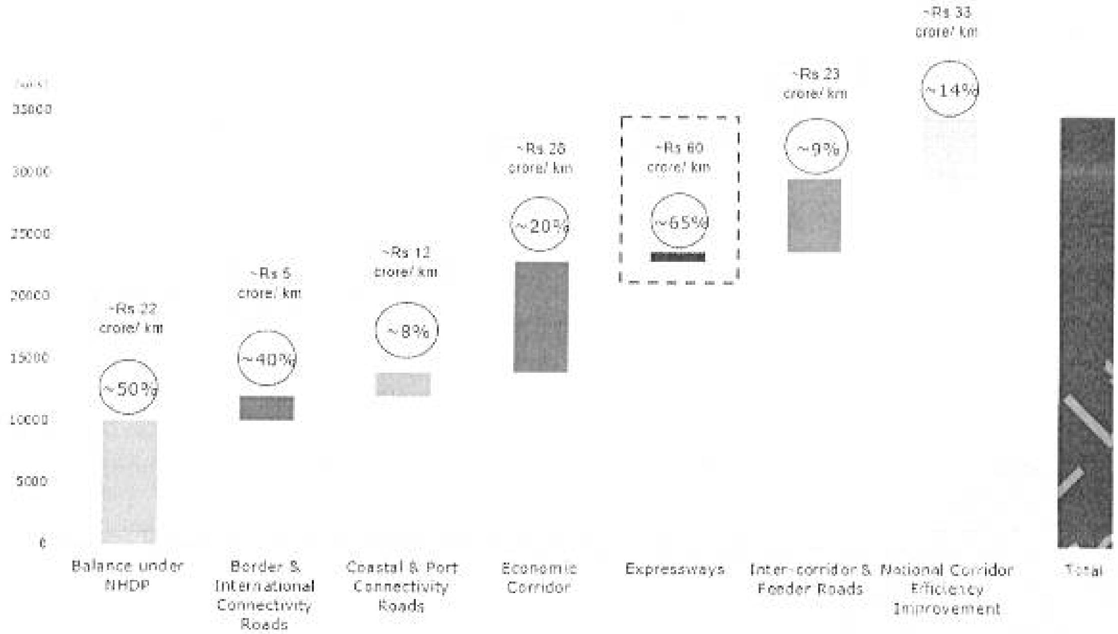
Source: MoRTH, NHAI, CRISIL Research

Bharatmala phase-1 awarding focused on expressways; likely to stretch till fiscal 2025

Bharatmala Pariyojana is an umbrella project of the central government since 2015, that aims to improve efficiency in the roads sector. It is expected to supersede the National Highways Development Project (NHDP) and envisages the construction of 65,000 km of highways under the following categories: national corridor (north-south, east-west, and golden quadrilateral), economic corridor, inter-corridor roads, and feeder roads. As per the ministry, Bharatmala, along with the schemes currently undertaken, could require a total outlay of Rs 6.9 trillion.

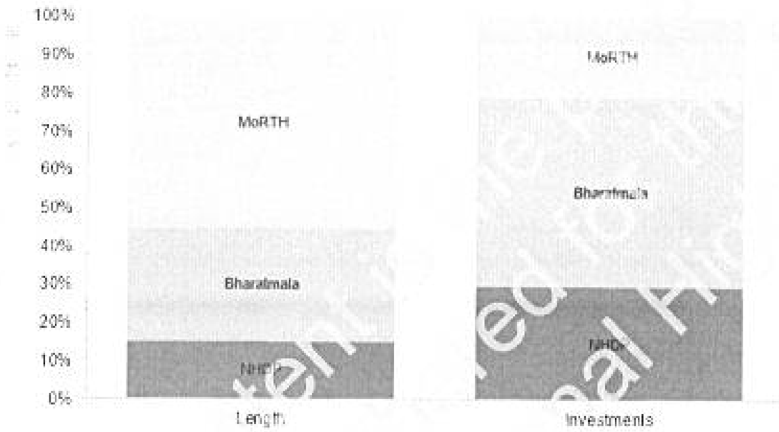
Phase-I of the scheme envisages development of about 24,800 km length of national highways/roads, plus residual 10,000 km of NHDP between fiscals 2018 and 2022. Awarding under Bharatmala has begun from fiscal 2018 and we believe it will stretch till fiscal 2025 for Phase 1.

Cost per km for expressways are highest



Source: NHAI, CRISIL Research

Share of different schemes under national highways (FY23-FY27P):



Note: NH investments do not include land acquisition costs

Source: CRISIL Research

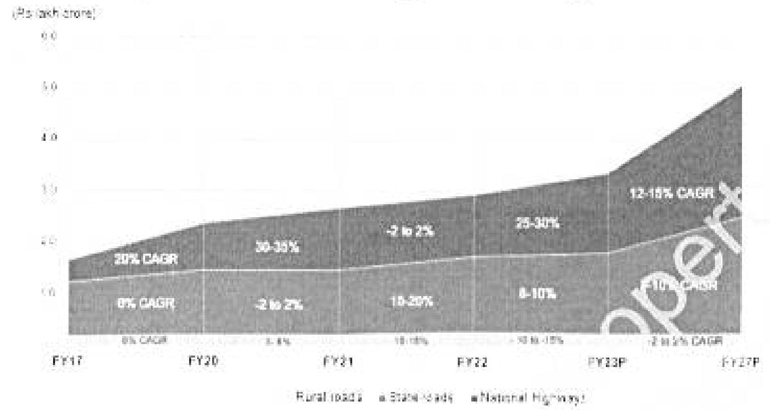
3.0 Investments: State roads

After constrained spending due to COVID, state road capex on the revival track

CRISIL Research's analysis of state road budgets indicates that state road capex forms 45-50% of the sector. After growing at a CAGR of 14%, it remained flattish in fiscal 2021 due to constrained state funds. On this low base, it is estimated to have grown by 20-25% in fiscal 2022, subsequently is expected to moderate at 8-12% over the next 2 years.

Our interactions with market participants indicate that state road projects funded by external agencies such as World Bank or ADB or have private/bank funding such as Expressways under UPEIDA have not had much impact due to COVID-19, as compared to state-funded projects.

State road capex to witness moderate growth on the high base of last fiscal



Source: State budget documents, CRISIL Research

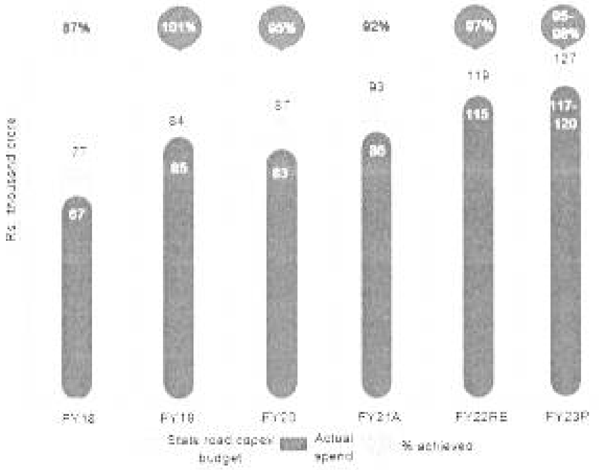
State roads, which include highways, major district roads and rural roads that do not come under the purview of the Pradhan Mantri Gram Sadak Yojana, constitute over 20% of the country's road network and handle ~40% of road traffic. These play an important role in the economic development of mid-sized towns and rural areas, and aid industrial development by enabling the movement of raw materials and products to and from the hinterland.

In order to dig deeper we have looked at the budgets of top 14 states that account for 85% of state road capex.

Fiscal 2022 budgets for these top states, were 38% higher, and revised estimates show a 97% achievement ratio. But historically actuals have been only 94% of RE, hence there is downside risk to these numbers given high state fiscal deficits.

Further in fiscal 2023, they have budgeted for a 7% growth and we expect a 95-98% achievement ratio.

FY23 budgets for top 15 states at 7% on-year, even on the high base of last year

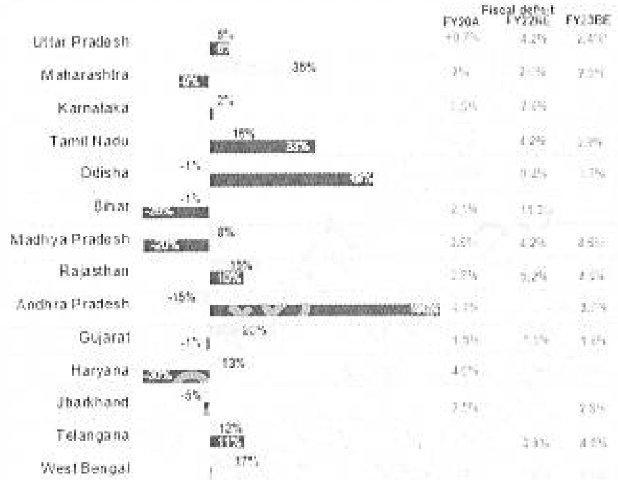


Source: State budget documents, CRISIL Research

Here, we have plotted the top 14 states in descending order their spends on roads. We looked at 2 data points 5 year CAGRs of state spends and state fiscal deficits. While there is a stark variation across states - we observed that high spenders that are looking to lower their fiscal deficits such as Uttar Pradesh & Maharashtra and those who are in very high fiscal deficit zones such Bihar and Madhya Pradesh have lowered their budgets on roads.

On the other hand, states that have been lagging in road spending over the last 5 years such as Odisha & Andhra Pradesh have budgeted for much higher road capex outlay in fiscal23. All in all after the double digit growth in FY22, state spending on roads is expected to moderate at an overall level.

Stark variation across states- laggard states have typically budgeted for higher road spends this fiscal

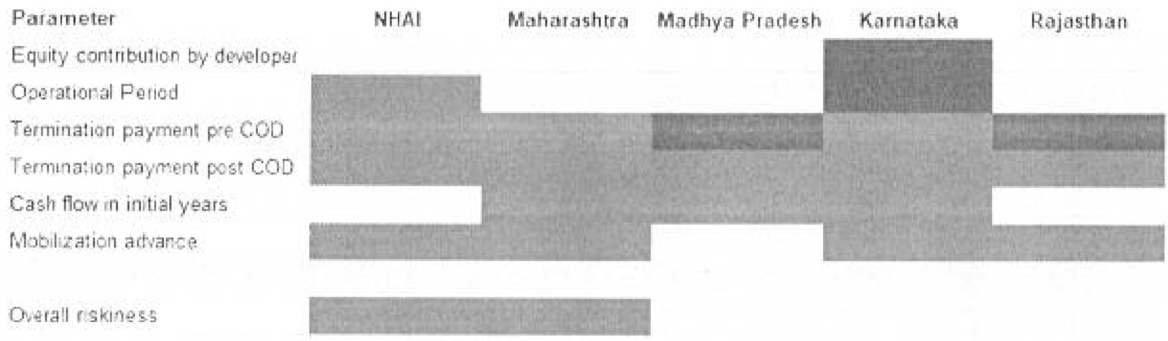


Source: State budget documents, CRISIL Research

NHAI vs State HAM

Few states such a Maharashtra, Madhya, Karnataka and Rajasthan have implemented the HAM model in awarding of state highway projects. Maharashtra's model is similar to that of NHAI, while those of Madhya Pradesh, Karnataka & Rajasthan.

Maharashtras HAM model similar to NHAI's



Source: State Budget documents, Crisil Research

Budgetary support and lender comfort - key success factors for the state:

	NHAI	Maharashtra	Madhya Pradesh	Karnataka	Rajasthan
Number of bidders	5-6 bidders	6-7 bidders	4-5 bidders	2-3 bidders	2-3 bidders
Bid Project Cost vs Authority Cost	10-15% above	Almost at par	Almost at par	15-20% above	8-10% above
Awarded projects (kms) till date	>7000	~10000	280	420	750
Average size of Project	~Rs 1,100 crore	~Rs 200 crore	~Rs 150 crore	~Rs 1,000 crore	~Rs 500 crore
Cost per km	Rs 20 crore per km	Rs 2.5-3 crore per km	Rs 3-3.5 crore per km	Rs 7 crore per km	Rs 2-2.5 crore per km
Key players	Dilip Buildcon, Ashoka Buildcon, PNC Infratech, Sadbhav, IRB	Rajpath Infra, SB Deshmukh, Harsh Construction, Welspun	Ravi Infra, Shreeji Path, RCL	Sadbhav, KNR	Dineshchandra R Agarwal, CR Infra, Gawar Construction
	Awarding began in FY16	Awarding began in FY18, future pipeline in line with Govt. budget allocation	Awarding began in FY20, future pipeline of ~1300 kms	Awarded in FY19, no future pipeline	Awarded in FY18, future awarding potential of 750 kms in FY21
Funding	Budgetary allocation + EBR	Budgetary allocation of Rs 30-35 billion per year	$ 490 mn from ADB	$ 348 mn from ADB approved for KSHIP	$ 190 mn from ADB
Key findings		GoM deposits 50% of its grant in escrow account maintained by bank to ensure no delayed payments	Awarded in Jan 2020 after approval for ADB loan	Land acquisition & funding issues due to change in Govt. Projects awarded in June 2018 have only now achieved FC. Appointed date given with 65% land to KNR	750 kms awarded in FY18 under RSHIP-1 with ADB funding. RSHIP Tranche-2 now approved

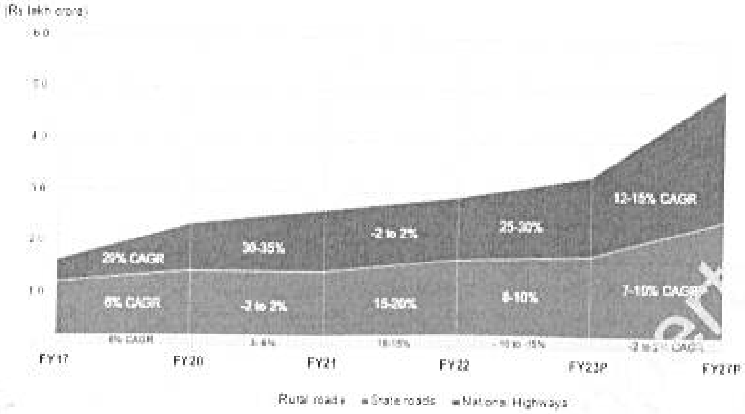
Source: State Budget documents, Crisil Research

4.0 Investments: Rural roads

Rural roads

Given lower construction targets under PMGSY III, the rural road construction was already on a decline in fiscal 2020. Despite the corona virus pandemic spread in India, kms constructed were up by 34% in fiscal 2021 with a ramp up in Q4 on the low base. In fiscal 2022, ~42,000 kms of rural construction under PMGSY was witnessed. Given that ~70,000 kms are pending under PMGSY targets, in fiscal 2023 and 2024, we expect a flattish rural road construction which would be largely in the northern and eastern parts of the country.

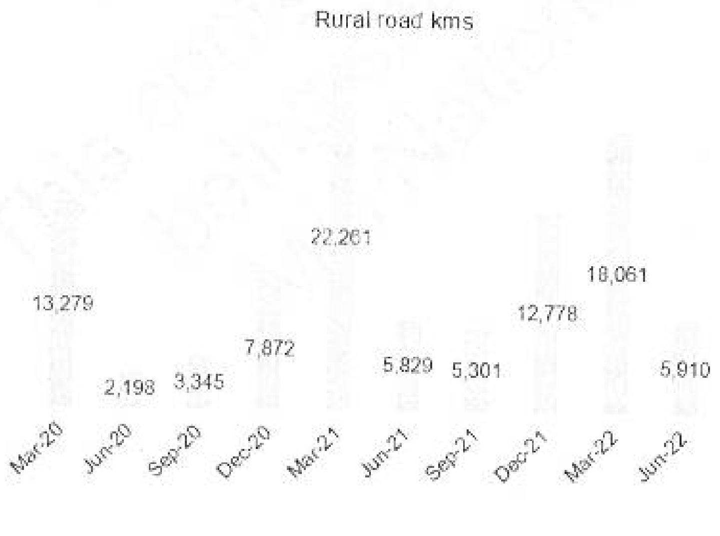
Expenditure on rural roads to decline in fiscal 2023



Source: PMGSY, CRISIL Research

Rural road construction (in kms) was almost half in fiscal 2020 at ~27,000 kms construction, as compared with ~49,000 kms in the previous year. Fiscal 2021, saw construction of ~37,000 kms, while fiscal 2022 construction was ~42,000 kms. In Q1FY23, ~5,910 kms was constructed which was largely similar to the length constructed in the same period last fiscal.

Rural road construction in Q1FY23 was flattish vis--vis Q1FY22



Source: PMGSY, CRISIL Research

After fiscal 2017, budgetary allocation by the Central government to the scheme was kept at Rs 190 billion, budgetary allocation for FY23 has been increased to Rs 195 billion. The actual expenditure has been lower than the allocation, achievement ratio has slipped to 74% from 81% in fiscal 2019. Total investment in PMGSY, both state and Centre, was Rs 234 billion in fiscal 2019, up 35% from Rs 173 billion in fiscal 2018, because of an uptick in length being constructed as well as higher cost per km.

About the scheme:

Pradhan Mantri Gram Sadak Yojana (PMGSY) is a one-time special intervention to provide rural connectivity, by way of a single all-weather road, to the eligible unconnected habitations in the core network with a population of 500 persons and above (Census 2001) in plain areas.

The Pradhan Mantri Gram Sadak Yojana (PMGSY) phase 1 was launched in 2000. Under the scheme, the Centre recognised 178,184 habitations as requiring all-weather roads, of which 97% of the eligible and feasible habitations have been connected as of November, 2019.

Further, the Government launched a new intervention in the scheme namely PMGSY-II in the year 2013-14 for consolidation of total 50,000 km existing Rural Road Network to improve its overall efficiency as a provider of transportation services for people, goods and services. 41,434 kms of rural roads are sanctioned under PMGSY-II as of date, of which, 75% have been completed.

The umbrella scheme involves construction/upgradation of over 800,000 km of rural roads. Since inception to November, 2019, 696,616 Km road length has been sanctioned under various interventions/verticals of PMGSY and 6,06,135 Km road length has been completed. The target for fiscal 2019 was 57,700 km, of which 85% has been achieved. In fiscal 2018, 96% of targeted 51,000 km had been achieved.

PMGSY-I, 97% of target achieved. PMGSY-II 75% target achieved. PMGSY III target kms lower by 40% as compared to roads constructed over the last 5 fiscals.

PMGSY-III was announced in Budget 2020

Under the PMGSY-III scheme, announced in the Union Budget 2019-20, it is proposed to consolidate 125,000 km road length in states over the next five years. The scheme will also include 'through routes' and 'major rural links' that connect habitations to Gramin Agricultural Markets (GrAMs), higher secondary schools and hospitals.

It will entail an estimated cost of Rs 80,250 crore (Central share Rs. 53,800 crore, states' share Rs 26,450 crore).

The road length in km to be constructed under PMGSY-III is significantly lower than the 218,000 km constructed under the umbrella scheme between fiscals 2015 and 2019. CRISIL Research expects investments in rural roads to slow down by ~10% over the next five years, due to the lower targets.

PMGSY targeted construction largely in Eastern and Northern states

Residual construction target under PMGSY II and future targets under PMGSY III are largely concentrated in nothern and eastern states in the country. CRISIL Research believes, Odisha would see 15-20% of targeted rural road construction under PMGSY. Followed by Assam, which would see 9-11% of the total PMGSY target construction. Arunachal Pradesh, Bihar and Uttarakhand would each see 5-10% of the total construction under PMGSY. Other states such as West Bengal, Jammu and Himachal Pradesh also have potential for rural road construction under the scheme.

Odisha and Assam have highest potential for construction of rural roads under PMGSY

Source: Ministry of Rural Development, Crisil Research

States share in PMGSY to be monitorable

In the Union Budget 2016-17, the government advanced the target date for the completion of PMGSY-I by three years, from fiscals 2022 to 2019. To support this ambitious goal, it increased allocation substantially in fiscals 2016 and 2017 and maintained the budget allocation for fiscals 2018 and 2019. Nearly 75% of the funding needed for the scheme is to be met through cess funds and the rest through external borrowing.

At the same time, the ratio of Central-to-state spending was revised from 70:30 to 60:40 for most states (the ratio remains 90:10 for the eight north-eastern and the three Himalayan states). Hence, the ability of states to provide funds in proportion to the Centre's contribution is critical to meet the envisaged targets. However, the share of Centre and states has been at an average of 70:30 over the past three years.

Question mark on maintenance continues

PMGSY is a one-time special scheme undertaken by the Central government to boost infrastructure in rural parts of the country, but maintenance of these roads remains a state subject. All PMGSY roads are covered by five-year maintenance contracts. Maintenance funds to service the contract are to be budgeted by the state government.

With effect from fiscal 2017, financial incentives are given to best-performing states, which show higher achievement on the basis of set parameters. Financial incentives amounting to Rs 10.8 billion and Rs 8.4 billion were awarded in fiscals 2017 and 2018, respectively, for periodic maintenance to best-performing states.

In fiscal 2017 alone, Rs 5.4 billion was credited to the accounts of 20 state rural-road development agencies for carrying out maintenance on these roads, of which only Rs 3.33 billion was spent. In fiscal 2018, Rs. 9.4 billion was spent on maintenance. Thus, eventhough execution of new roads under PMGSY is on track, their maintenance remains a key monitorable.

5.0 Financing: Public funding

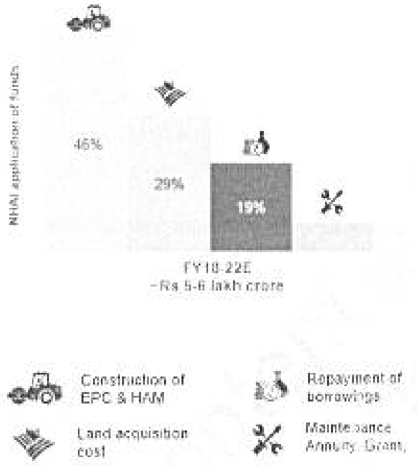
Asset monetisation critical to meet aimbitious Bharatmala targets

CRISIL Research estimates Rs 17-19 trillion will be invested in national highways between fiscals 2023 and 2027, with public funds dominating the overall spending. With the National Highways Authority of India (NHAI) awarding more projects under the hybrid annuity model (HAM) and on cash-contract basis, it is now relying more on external borrowings and asset monetisation. While asset monetisation via TOT and now the InVIT route is challenging in itself, raising external funds is increasing the debt to equity of the authority and repayments now form a large outflow for NHAI. Timely asset monetisation is critical for NHAI to meet its aimbitious Bharatmala targets.

Due to higher awarding under EPC & HAM, NHAI's outflow toward milstone payments formed ~46% of total met through market borrowings

Out of the Rs 5-6 lakh crore spent over the 5 years (FY18-FY22E), 46% were toward milestone payments for EPC and HAM (40% of HAM) projects. ~29% were toward land acquisition expenditures and 19% toward interest and repayment of borrowing.

NHAI application of funds: 46% of NHAI outflows towards construction

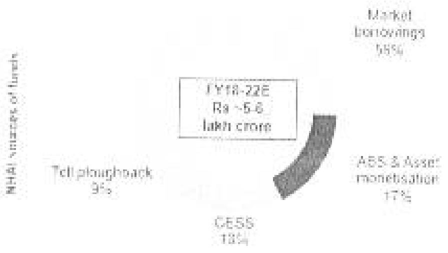


Source: NHAI, CRISIL Research

Looking at the sources, while toll plough back and CESS (budgetary allocation) contributed 18% and 9% respectively to the sources, market borrowings is where the maximum amount (56%) of NHAI's funding came from. Additional Budgetary Support and Asset Monetisation were 17% of total.

With NHAI's requirement expected to increase with aimbitious construction targets, additional support via monetisation are critical for its future requirements.

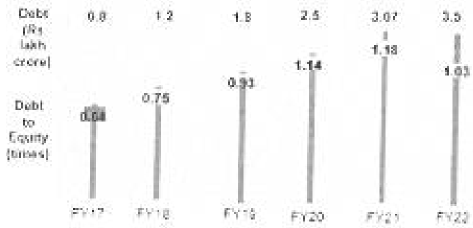
NHAI sources of funds: Market borrowings accounted 56%



Source: NHAI, CRISIL Research

With the high dependence on market borrowings to fund EPC and HAM projects, NHAI's debt to equity has risen to 1.2 times by FY22.

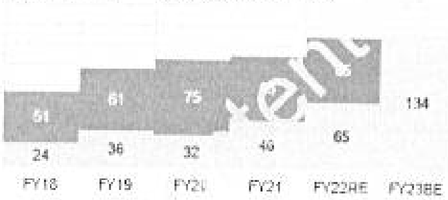
NHAI borrowings on the rise



Source: NHAI, CRISIL Research

To limits the rise in borrowings, NHAI's budgetary support in the form of CESS & toll ploughback has been increased by 106% for fiscal 2022 (budgeted) and its IEBR has been kept at nil.

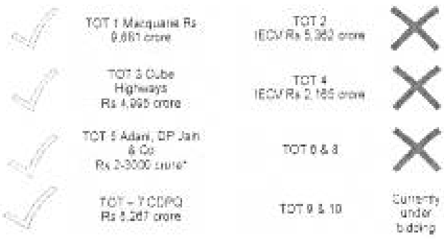
Budgetary support to NHAI up by 17%, IEBR done away with in FY23 budget:



Source: Union budget, CRISIL Research

Other modes of funding such as TOT have seen only limited success. Over the past 4 years, NHAI has been able to successfully monetise ~14,000 kms and raise ~Rs 17,000 crore and another Rs 8,000 crore via InVITs. With the implementation of Fastags, TOT becomes more attractive as its able to eliminate cash handling and plug leakaged in the system. However, of late, the awarding of TOT bundles have encountered impediments with certain TOT bundles like TOT-6 and TOT-8 getting cancelled due to low bids. Therefore, the convergence of the expectations of the government authorities and the private bidders remain a key monitorable as well as a major requirement for this mode of funding to become truly succesful.

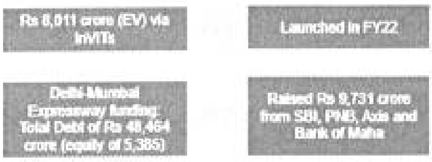
Success of TOT critical to meet ambitious Bharatmala targets



Source: NHAI, CRISIL Research

The authority has also tied up debt via SPV level funding for the Delhi-Mumbai expressway where it has already raised Rs 9,731 crores.

InVITs & SPV level financing



Source: NHAI, CRISIL Research

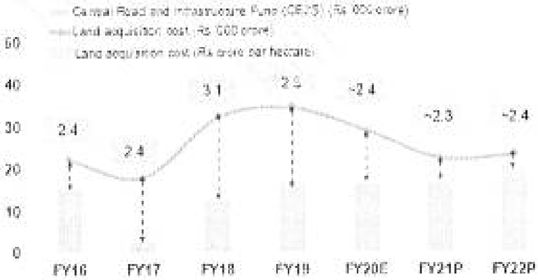
NHAI focuses on clearing land acquisition issues:

Historically cess was allocated towards land acquisition expenditure incurred by the NHAI. This gap had widened with after the implementation the new act related to rehabilitation and resettlement. However, with the authority's focus on clearing these issues coupled with focus on new greenfield alignments, have reduced the burden on land acquisition.

In the Union Budget for fiscal 2019, road cess was replaced by road and infrastructure cess (CRIF). Previously, road cess used to be split for national highway construction, maintenance, railways, Pradhan Mantri Gram Sadak Yojana, etc., based on a fixed formula. So far, there has been no change in the split. However, going forward, the share of cess to the roads sector could reduce given the increase in the overall scope from roads to roads and infrastructure, increasing dependence on borrowings.

The compensation policy under the current land acquisition bill requires the NHAI to pay four times the market value of rural land and two times that of urban land. This, coupled with new laws related to rehabilitation and resettlement, has almost tripled land acquisition costs. In fiscal 2014, the average cost for acquiring land was Rs 9 million/hectare. It increased to about Rs 30-32 million/hectare in fiscal 2019 and has tapered to Rs 24-25 million/hectare in fiscal 2020.

Cost for Land acquisition for the authority has come down in FY20:



Source: NHAI, CRISIL Research

Green field projects offer suppport:

Source: NHAI, CRISIL Research

The share of greenfield road projects in awarding was 4-5% between fiscals 2012 and 2018. In fiscal 2019, with Bharatmala kicking off, the share rose to 22%. Between fiscals 2020 and 2022, CRISIL believes the share will be 25-30%. The increase in the share of greenfield projects lowers the cost of land acquisition by 40%, compared with brownfield projects. Also, these greenfield projects come with shorter alignments and 20% shorter length. That said, a key drawback of greenfield projects is the cycle time, which is longer by 6-12 months, compared with brownfield projects, because of higher design time.

State roads financed by state governments, private participation via HAM in states is monitorable

State roads are largely financed through budgetary allocations by respective state governments. These are supplemented by funds from the National Bank for Agriculture and Rural Development (Nabard), Housing and Urban Development Corporation Ltd, Rural Infrastructure Development Fund, and the state's portion of CRF.

State governments will finance most state road projects (via budgetary allocation, external assistance, and CRF). Some states have a favourable policy framework to attract private participation. Going forward, the share of private participation in state roads is expected to be at 12-15% as the success of the HAM projects introduced across various states are monitorable.

Rural roads to continue to be funded by central, state governments, no private participation in sight

CRISIL Research expects ~ Rs 80 billion to be invested in rural roads under the PMGSY over the next five years under the PMGSY-III. Rural roads under the yojana are entirely funded by the central and state governments. The Centre's contribution is mostly through CRF and through loans from the Nabard, World Bank, Asian Development Bank, etc.

Other than the PMGSY, certain states have their own programmes to develop rural roads, which are funded completely by their governments.

The Ministry of Rural Development has put forward a proposal to implement the PPP model under the PMGSY. However, given the low-ticket size of contracts and questions over users' ability to pay toll/usage charges, we do not foresee the PPP mode picking up in rural road projects.

6.0 Financing: Private funding

Investments by private sector to grow 3x times over the next 5 years

CRISIL Research expects private construction investments in national highways to increase 2x to Rs 2.7 trillion over fiscals 2023 to 2027 compared with the previous five years. This is expected to be mainly through the hybrid annuity model (HAM) mode, as the build-operate-transfer (BOT) toll mode may have only a few takers.

A policy push in the form of changes in Model Concession Agreements (MCA) for HAM and BOT projects and reduction in bid eligibility criteria across all national highway projects would bode well for private participation. However, the share of HAM in total awarding is constrained by the cautious approach employed by banks in lending to HAM projects.

Amidst the COVID-19 pandemic, NHAI and the ministry have taken various steps under the Atmanirbhar package to ease issues faced by developers. Releasing monthly payments, instead of milestone based payments; extension of timelines for completion of projects, etc have sustained private participation in the sector. While these have been extended till Oct 2020, they are likely to fade from next fiscal onwards.

Asset monetisation, equity infusion key to support private investment in the long run

Currently, there are two broad drivers of asset sales in the roads sector - rationalisation of financial position to improve balance sheet strength and asset churning to be able to participate in the upcoming projects. The erstwhile major BOT players are selling off assets to reduce their debt burden and free up equity, which can be infused in under-execution projects.

The players present in HAM are currently selling off HAM assets to participate further in upcoming HAM projects. Some players intend to sell off under-construction projects to financial investors with projects being executed by the same player. Thus, they are able to convert HAM projects to EPC without facing the cut-throat competition they deal with currently in the EPC mode. This will help them retain margins.

About Rs 70,000 - 80,000 crore has already been invested through these modes. CRISIL's analysis of BOT and HAM projects indicates a potential of ~Rs 2-2.5 lakh crore in terms of Enterprise Value.

Asset monetisation has a lot of potential to free up developers' balance sheets

Source: Industry, CRISIL Research

InVITs to deleverage balance sheets and enable capital recycling

Infrastructure investment trusts (InVITs) will help free up capital of players by divesting stake in operational assets and help recycle this capital to deleverage balance sheets for creating new assets.

Developments in InVITs:

Name	Sponsor	Structure	AUM (Rs crore)*	Ratings	Month-Year of launch	Assets
IRB InvIT Fund	IRB	Public listed InvIT	6,500	IND AAA/ Stable	May-17	6 operating toll road assets
Indinfravit Trust	L&T IDPL	Private listed InvIT	10,500	CRISIL AAA/ Stable	Mar-18	11 BOT-toll from L&T IDPL and Sadbhav, 2 operational BOT annuity (1 pending)
Oriental Infratrust	Oriental group	Private listed InvIT	11,000	CRISIL AA+/Provisional CRISIL AAA/Stable	Jun-19	5 operational assets
IRB Infrastructure Trust (IRB InVIT II)	IRB	Private unlisted InvIT	22,500	ACUITE AAA	Feb-20	5 BOT-toll projects
Total			50,500			

Source: Industry, CRISIL Research

InvITs, as envisaged in Union Budget 2014-15, will own and manage income-generating infrastructure projects. As per regulations, these trusts will be allowed to make only 20% of their investments in under-construction projects. The rest will have to be invested in completed, revenue-generating infrastructure projects. Such trusts are expected to help unlock tied-up capital of developers and attract foreign capital.

In Union Budget 2015-16, the finance minister exempted the capital gains tax on sponsors at the time of listing of units of InvITs. In Union Budget 2016-17, distributions made from special purpose vehicles to InvITs were exempt from the dividend distribution tax.

Additionally, the Union budget (FY21) announcement of scraping dividend distribution tax (DDT) and shifting the taxation of such payouts to investors would prove to be a negative for InvITs. Our interactions with market participants, however, indicate that given this could hurt asset monetisation plans esp. in the roads sector, the government may create a carveout for InvITs to allow them to continue with the earlier regime.

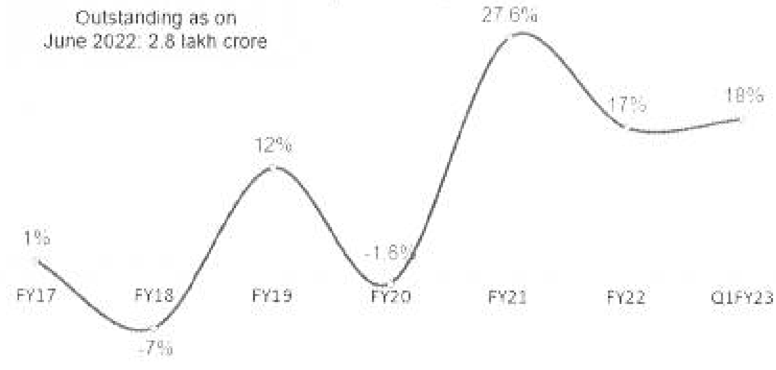
Improvement in bank credit growth led by higher HAM execution

After a dip in fiscal 2020, bank lending to the roads sector staged a healthy recovery and grew by 27% yoy owing to higher awarding and higher construction. The traction continued in fiscal 2022 as well with lending to the sector witnessing a robust growth of 17% yoy . In the first quarter of fiscal 2023, the growth momentum remained unhindered since the quarter witnessed a healthy growth of 18% yoy in bank lending to the sector.

For projects that were awarded in fiscal 2012, banks approved costs that were much higher than those approved by the National Highways Authority of India (NHAI). As a result of the problems faced in these projects, bankers are now very cautious while evaluating projects, and are estimating project costs much closer to the NHAI estimates. They demand that at least 80% land acquisition should be completed and all clearances must be obtained at the beginning. While this has increased the time taken by players to achieve financial closure, it will ensure participation only by serious players. However, viable projects and those that have not gone through aggressive bidding should achieve financial closure quite smoothly.

Bank Credit to the Roads sector has been highest in 5 years

Banks' lending to roads sector
(YoY Growth)



Source: RBI, CRISIL Research

7.0 Our view: Profitability

Revenue growth to sustain, margins to be under pressure

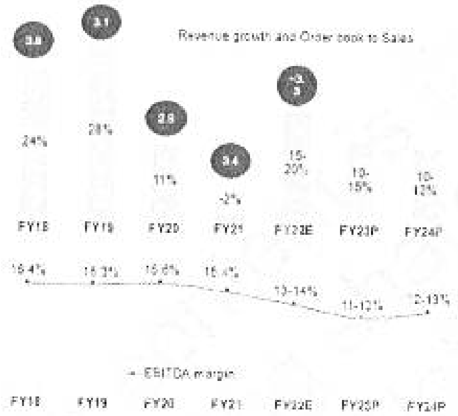
Due to the corona virus and subsequent lockdowns, while developers ramped up construction post monsoons, stoppage of execution & fall in investments pulled down revenue growth by -2% in fiscal 2021. However, despite the fall revenue, the players were able to rationalize costs and were able to sustain their margins to an extent.

Due to higher awarding and orderbook to sales 3.4 times revenue growth for fiscal 2022 is estimated at 15-20%. We expect a 10-15% increase in revenue for EPC road players in fiscal 2023 and a sustained growth of 10-12% yoy in fiscal 2023 due to high orderbooks providing visibility.

Margins to be in the range of 13-14% in fiscal 2022 due to higher input costs. However, margin pressures due to intensified competition continues to be a pain point on the industry. We expect a further dip to 11-12% in fiscal 2023. In fiscal 2024, as input prices would likely correct, we expect margins to recover slightly and be in the 12-13% range.

Despite, some pressure on margins, TOL/TNW and ISCR remains comfortable for key players due to the lower equity commitment in HAM plus, stake sales post COD.

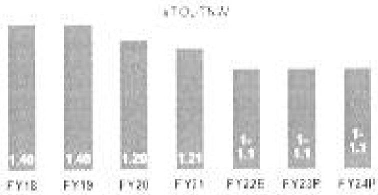
Healthy orderbook provide revenue growth visibility, however margins to suffer due to increasing competition and rising prices

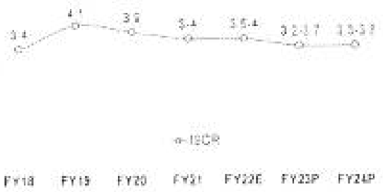


Note: Standalone financials of 20 EPC road companies considered

Source: Company reports, CRISIL Research

TOL/TNW and Interest coverage likely to remain comfortable





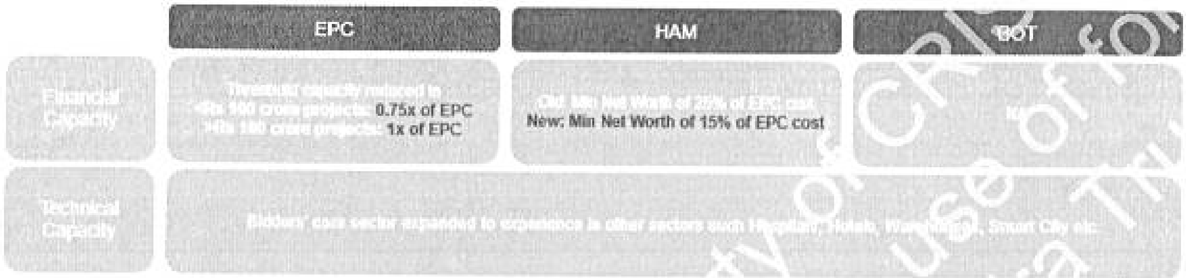
Note: Standalone financials of 20 EPC road companies considered

Source: Company reports, CRISIL Research

8.0 Our view: Competition

Relaxations in bid eligibility criteria have enhanced competitive intensity in national highway projects In fiscals 2021 and 2022, when the financial threshold to bid was reduced, NHAI awarding peaked. Package sizes reduced by 30% over 2016-20 levels, to fast-track construction by awarding to a larger pool of players. All this led to intensified competition, with nearly 15 bidders per project in the HAM space. Bid premiums nosedived to as low as ~4% from ~16% on average earlier. Instances where even large players bid aggressively increased and one-third of projects were awarded at discounts. Interestingly, mid-sized regional players won ~40% of HAM awards in fiscal 2022, vis--vis 25% in the earlier period that is over fiscals 2016-20.

EPC is witnessing even higher competition with almost 20-30 bidders per project, with bid discounts as low as 15-20%. Smaller players to start participating in National Highway projects, remains to be a key monitorable:



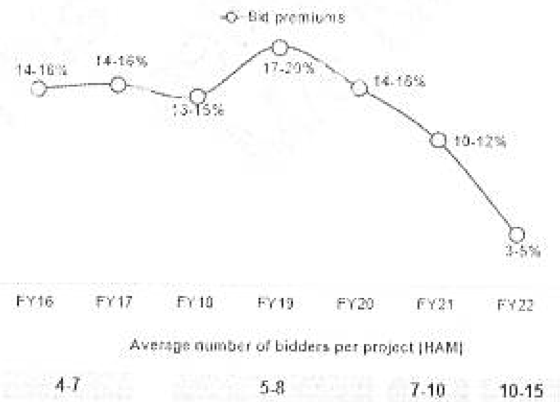
Source: MoRTH, NHAI, CRISIL Research

HAM saw intense competition in fiscal 2022, mid-sized players gained share in awarding

CRISIL Research's analysis of NHAI HAM projects show that though HAM projects were earlier awarded to large developers with strong balance and execution capabilities. With the reduction in bidder eligibility criteria in Oct 2020, we saw entry of mid-sized regional players who were earlier only sub-contractors to these bigger developers enter the NHAI HAM space. The number of bidders per project have also increased from 5-10 bidders to 10-15 bidders per projects.

Mid-sized regional players won ~40% of HAM awards in fiscals 2021 & 2022, vis--vis 25% in the earlier period While ~70% of the projects awarded to mid-sized players in fiscal 2021 have achieved financial closure, timely execution by these players remains a key monitorable given their significant share.

HAM discerned higher number of bidders and reduced premiums



Source: NHAI, Industry, CRISIL Research Roads Projects database

Low-ticket projects making EPC highly competitive

EPC projects being bid out are smaller in terms of both size and cost than HAM projects by almost half. The average length of EPC projects awarded was 22 kms as compared with HAM projects whose average length was 46 kms. Similarly, when comparing costs, average size of EPC projects in terms of cost, was Rs 3750 million as compared with HAM which was more than Rs 7000 million.

For EPC projects, a developer is eligible to bid if its bid capacity is more than the bid value. Bid capacity is calculated based on the highest annual revenue earned through EPC projects in any of the previous five years. Thus, a lower bid value ensures more eligible bidders, increasing the competitive intensity of the project.

Also, many road developers are now focused on bidding for only EPC projects owing to their poor financial health as well as overhang of past issues with regard to delays in land acquisition, clearances, and mismatch in traffic projections.

With the recent reduction in bidder eligibilty EPC have witnessed even more stiff competition with even 30-35 contractors bidding per project.

BOT awarding in fiscals 2021 and 22 with moderate competition

With the changes in the BOT concession agreement in Aug 2020 (covered in detail in chapter: National Highways), NHAI managed to award 2 projects in the state of West Bengal under BOT-toll in fiscal 2021 and one project in fiscal 2022. There were 4-5 bidders per project with the L1 bidding at premiums. We expect competition to remain moderate in the BOT space.

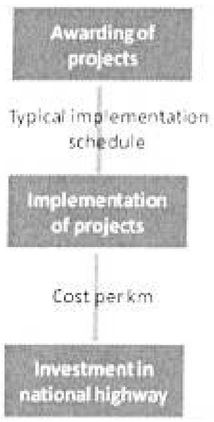
9.0 Our view: Methodology

Methodology

To estimate the number of projects being awarded, CRISIL Research has prepared a list of upcoming projects in various NHDP phases and Bharatmala component-wise, along with the length and location (state) of the project. Projects have been bucketed year-wise, based on their likelihood of being awarded, which, in turn, depends on how attractive the project is in terms of location.

Projects that are more attractive are expected to be awarded first. However, for estimating projects to be awarded this fiscal, tenders released by the NHAI on its website have been factored in, as this will help us arrive at a more accurate figure on phase-wise length. The final numbers arrived at for the next five years have been vetted by the NHAI and developers to determine if the estimate is realistic and achievable.

Steps in estimating NHAI investments:



Source: CRISIL Research

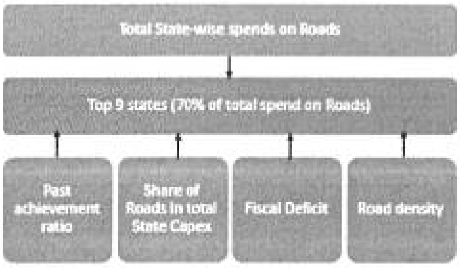
To arrive at the length to be executed over the next five years, we have assumed a typical implementation schedule of 3-4 years from the time of award. The implementation schedule has been calculated based on the projects completed in the recent past and interactions with industry participants.

Finally, for estimating investments required over the next five years, the length to be executed in each NHDP phase has been multiplied by the phase-wise cost per kilometer (taken as average cost per kilometer for recently completed projects). This has been cross-checked with NHAI and developers.

Methodology for estimating state investments

To estimate investments in State Roads, Crisil Research has analyzed budgeted and actual spend on Roads & Bridges in each state. Further, we have deep dived in to the top 9 states that contribute ~70% of the total spend. Our forecasts are based on historical trends in achievement ratios, states ability to spend given their fiscal deficits, road density & share of unsurfaced roads in these states. We also looked at the major road projects in the states, financial health of implementing agencies and private participation.

Steps in estimating State investments:



Source: CRISIL Research

Note: The opinion will be updated by 15 June 2022.

10.0 Hybrid Annuity Model: Summary

Cost overrun during construction can severely impact developer returns

Since the developers revenues in a hybrid annuity model (HAM) project are pre-determined as a proportion of the bid project cost, any cost overrun during construction can severely impact developer returns. This is unlike in the case of a boot-operate-transfer (BOT) toll model where the developer can anticipate higher toll revenues in the future. An analysis of 25 HAM projects shows 10% cost overrun that is calculated to result in ~900 bps decline in developer returns (assuming any cost overrun is funded by the promoter). This, coupled with the fact that developer contribution in a HAM project is quite low, can significantly increase probability of concessionaire default in the event of cost overruns.
It is thus prudent for lenders to fund projects with the condition of high upfront promoter contribution.

Projects awarded at high premiums should be tread carefully

HAM projects are awarded to the player who quotes the lowest bid price, which is the net present value (NPV) of the bid project cost (BPC) and the first year's operation and maintenance (O&M) quote. Hence, a project can be awarded to a player who quotes a high BPC and a very low O&M payment. In such a case, if construction cost falls significantly below BPC, a player can recover his investment during the construction period itself from funds provided by National Highway Authority of India (NHAI), thereby increasing risks of concessionaire default.

Such projects should be identified and funded with lower leverage levels or should be funded taking NHAIs benchmark cost into account.

Lenders cautious approach reduced competition sharply

Competition in HAM had intensified towards the first half of 2016-17, with over nine-ten bidders for each project. Of the 29 HAM projects awarded by NHAI till February 2017, 14 have achieved financial closure while eight others have crossed the 150 days' limit within which financial closure is expected. Financial closure of some projects, mostly those awarded to players without established track record, has been delayed as lenders are concerned with low developer contribution. As a result, HAM projects awarded in March 2017, witnessed lower participation by 5-6 bidders on average per project as compared with 9-10 in August 2016.

Lower gearing, upfront equity contribution to aid financial closure of delayed projects

Projects whose financial closure has been delayed are expected to achieve closure with the condition that the promoter contributes high equity during initial stages of construction. As per our interaction with industry players, lenders are demanding 100% upfront equity contribution from promoters. These projects may also have to settle for lower debt proportion. A few projects where no consensus is reached between the developer and the lender may see termination.

NHAIs concerted efforts to retain HAM as its primary mode of awarding

When the hybrid annuity model was first introduced in June 2015, it was greeted with apprehensions as it was a new, untested model. Lenders had expressed concerns over the following:

- Low authority contribution in the project during initial stages of construction
- Termination payment upon concessionaire default made upon only 40% physical completion
- Low promoter contribution in the project, thereby increasing probability of concessionaire default

In view of these concerns, NHAI made several amendments to the agreement to facilitate smooth off-take of the new model:

- NHAI to now start its contribution upon only 10% physical completion
- Termination payment upon concessionaire default to now be made upon only 30% physical completion

Also, the latest amendment to the Model Concession Agreement (December 2016) has changed the termination payment (for all scenarios) to a lower proportion of bid project cost during the initial construction period from before, thereby encouraging lenders to demand higher upfront equity contribution from promoters, to reduce chances of concessionaire default.

HAM payment structure to ensure comfortable coverage ratios

In November 2015, the annuity payment schedule was modified to increase cash flows in initial years of operations to improve lender comfort during this period. An analysis of 25 HAM projects revealed that all the projects had an average debt service coverage ratio of at least 1 in first five years of operations; two projects had ratio of more than 1.5 in the same time period.

Most projects to provide comfortable returns to investors

Our analysis also indicates that all projects except one will provide project returns above 8% providing reasonable comfort to lenders. 8 projects are expected to provide the developer with a return of upwards of 20%. About eight projects are expected to provide an equity return of less than 10%. However, three of these eight projects are contiguous stretches awarded to the same developer; hence, they can result in a considerable cost savings, providing better returns.

11.0 Hybrid Annuity Model: HAM: Introduction

HAM paves new roads in India

The ministry of road transport and highways (MoRTH) introduced the hybrid annuity model (HAM) model in June 2015. HAM is a new public-private partnership (PPP) framework in which 40% of the project cost is funded by the government while the balance is arranged by the developer through a debt-equity mix. Upon completion of construction, the government will make thirty semi-annual payments to the developer.

The developer is responsible for maintaining the road for fifteen years post construction. The government will make annual operations and maintenance (O&M) payments to the developer which is part of the bidding parameter, and the payment is increased each year taking inflation into account.

Key features of HAM

Bidding parameter	• Bid Price (NPV of Bid project cost* + NPV of total O&M cost)
Concession period	• Construction period+ 15 years post construction
Developer in flows	• 60% of project cost along with interest paid out in 30 semi annual payments post construction •Semi annual O&M payments adjusted for inflation

*Note: *Bid project cost is cost of construction, interest during construction, working capital, and physical contingencies in respect of construction*

HAM now the primary mode of awarding projects

Introduction of HAM

The model concession agreement (MCA) and Request for Proposal (RFP) of the HAM model were first released in June 2015. After an initial pause, the model quickly gained popularity as a result of its inherently lower risk levels as compared with existing PPP frameworks and owing to the governments efforts to expeditiously address stakeholder concerns.

Major milestones in the development of HAM

Source: CRISIL Research

Change in annuity payment schedule

In November 2015, MoRTH released the amended MCA where the major change was the alteration in the annuity payment schedule. In the first MCA (June 2015), annuity payments were more back-ended. The developer received only 11% of his investment in the first six years of operations. However, as per the new schedule, the developer will receive 30% of his investment within the same period.

Developer inflows post completion

	HAM MCA (June 2015)	HAM MCA (Nov 2015)
	Cumulative amount of total investment received	
End of 3 years	2.8%	13.65%
End of 6 years	11.2%	29.98%
End of 9 years	27.03%	49.51%
End of 12 years	54.1%	72.85%
End of 15 years	100%	100%

Source: CRISIL Research

The purpose of this amendment was to improve both developer and lender comfort by increasing cash flows in the first few years of operations when interest outgo is the highest.

Kindly refer to annexure for the semi-annuity schedule.

Re-definition of payment milestones

Lenders had expressed concerns over the HAM model with respect to the low equity contribution from the authority during the initial stages of construction. Promoter contribution in a HAM project is already low, at 12-15% of the project cost and even lower if the actual cost of construction is significantly lower than the bid project cost.

As per the November 2015 MCA, the National Highways Authority of India (NHAI) would provide its first installment of construction support only upon achievement of the first payment milestone, which required 20% physical progress. Also, lenders would receive a termination payment upon concessionaire default only on achieving the second payment milestone, which meant 40% physical progress.

Looking to improve lender comfort on this front, the NHAI in December 2016, changed the payment milestone definition, making disbursement of construction support more front-ended. Lenders would now receive termination payment upon concessionaire default upon only 30% physical completion.

Modification in payment milestone

	HAM MCA (Nov 2016)	HAM MCA (Dec 2016)
	% achievement of physical progress	
I Payment Milestone	20%	10%
II Payment Milestone	40%	30%
III Payment Milestone	60%	50%
IV Payment Milestone	75%	75%
V Payment Milestone	90%	90%

Source: CRISIL Research

This amendment will be applicable to projects awarded from December 2016.

Awarding under HAM started off slower than expected in fiscal 2016, with only ~350 km awarded, mostly due to apprehensions among stakeholders of a new, untested model. However, participation improved significantly towards the end of the fiscal. In fact, up to February 2017, almost 45% (in terms of length) of the projects awarded by the NHAI in fiscal 2017 were under HAM. Also, the number of bidders went up to as high as 9-10 per project in mid-fiscal 2017.

12.0 Hybrid Annuity Model: HAM: Need and Benefits

Dwindling participation in existing PPP models led to development of HAM

The Build-Operate-Transfer (BOT) toll and annuity models were introduced in 2000. By 2008-09, these models gained a lot of popularity with more than 20 players participating in each project as they anticipated higher returns.
However, post 2013, interest in these models waned due to the following reasons:

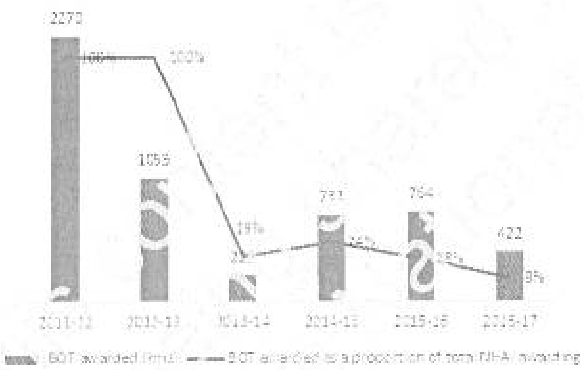
- Delays in acquiring land and clearances led to huge cost and time overruns resulting in several projects being stalled and terminated later.
- Aggressive bidding resulted in players quoting unviable revenue share with the authority.

Of the ~7,600 km awarded by National Highways Authority of India (NHAI) in fiscal 2012 and 2013, ~4,300 km were terminated due to delays or aggressive bidding.

- Even in projects that were completed, toll revenue fell significantly below expectations leading to financial deterioration of road players.

Due to these issues, bankers have become very selective while funding BOT projects. Of the six BOT projects awarded in 2015-16, only three have achieved financial closure.
Since 2013-14, BOT projects have lost out to cash contracts because the latter requires limited upfront capital and involves lower risk. Cash contracts have dominated projects awarded by NHAI as a result of the low appetite of road players for BOT projects.

Drop in takers for BOT Toll projects



Note: Terminated projects have not been included

Source: CRISIL Research

In the last few years, the government has stepped up its allocation to the roads sector, but has simultaneously increased its target for execution disproportionately. While the Ministry of Roads and Transport (MoRTH) had set a target of 8,000 km to be executed by NHAI for fiscal 2017, only about 2,700 km was actually executed. In order to achieve these steep targets, it became essential for the government to develop a new PPP model to improve private participation in the sector.

HAM to limit risk to developers and lenders

To boost private participation in the sector, MoRTH developed a new HAM model which has significantly lower risks than the BOT toll and annuity models. These are explained below:

Comparison between PPP road models

	BOT Toll	BOT Annuity	Hybrid Annuity
Project funding	Entire project cost borne by developer; Viability gap funding capped at 40%	Entire project cost borne by developer	Developer has to arrange for only 60% of the project cost
Traffic risk	Developer assumes traffic risk	Assured annuity payments; traffic risk limited to higher maintenance costs	Assured annuity payments; traffic risk limited to higher maintenance costs
Construction risk	Increase in construction period will reduce operational period	Increase in construction period will reduce no.of annuities received	Developer is assured 30 semi annual payments
Inflation risk	Entire inflation risk during construction and O&M period is borne by the developer	Entire inflation risk during construction and O&M period is borne by the developer	Project cost and annual O&M payment adjusted for inflation
Interest rate risk	Interest rate risk during operational period borne by developer	Interest rate risk during operational period borne by developer	Interest rate risk during operational period borne by authority; interest payments linked to existing bank rate
Termination payment upon concessionaire default during construction	No payment made	No payment made	Payment made upon completion of [illegible] milestone

Source: CRISIL Research

Project funding: With the government providing for 40% of the project cost, the promoter's contribution in a HAM project can be as low as 12-15% of the project cost, the balance is expected to be met through debt.

Traffic risk: In HAM, traffic risk is reduced significantly as the developer is assured of 30 semi-annual payments irrespective of the actual toll collected on the stretch. However, as the developer has to maintain the road, any significant increase in traffic can increase maintenance costs without any compensation for the same.

Construction risk: In the case of the BOT model, any increase in the construction period will reduce the operational period. In the HAM model, the operational period is fixed at 15 years from the date of completion. However, as per the HAM model concession agreement (MCA), if construction is delayed beyond 270 days, the project will be terminated.

Inflation risk: In the HAM model, the project cost is adjusted for inflation at regular intervals to reach the actual project completion cost. Annuity payments to the developer are made on the basis of this adjusted cost thereby compensating the developer for inflation. Annual O&M payments to the developer are also adjusted for inflation every year.

Interest rate risk: The Authority makes semi-annual interest payments to the developer which are linked to the prevailing bank rate. This protects the developer from any unforeseen increase in interest rates during the operational period.

Termination payment upon concessionaire default during construction period: This is a major concern with lenders in the case of BOT projects as no termination payment is made if the concessionaire defaults during the construction period. Bearing this in mind, the HAM allows for some payment if 30% of physical progress is achieved.

Still some concerns remain

Low promoter contribution remains bone of contention

This is the biggest concern that lenders have with the HAM model. As the promoter's contribution in a HAM project can be as low as 12% (even lower if actual cost of construction is significantly lower than the bid project cost), promoters have little skin in the project and hence, can desert it if something goes wrong.
As a result, financial closure of projects involving developers without an established track record has been delayed, while larger, well reputed developers like MEP Infra, Ashoka Buildcon and Sadbhav Infra have been able to tie up funds for their projects. One project which had been awarded to MBL Infra was terminated due to this reason and the project has now been re-awarded to Sadbhav Infra.

Of the 29 HAM projects awarded by NHAI till February 2017, 14 have achieved financial closure while 8 others have crossed the 150 days limit within which financial closure is expected.

Cost overruns can severely impact developer returns amid fixed payments

Since the developers revenues in a HAM project are pre-determined as a proportion of the bid project cost, any cost overrun during construction can severely impact developer returns. This is unlike in the case of a BOT Toll model where the developer could anticipate higher toll revenues in the future. An analysis of 25 HAM projects shows a 10% cost overrun to result in a ~900 bps decline in developer returns. This coupled with the fact that developer contribution in a HAM project is quite low can significantly increase probability of concessionaire default in the event of cost overruns.
It in hence prudent for lenders to fund projects with the condition of higher upfront promoter contribution.
Projects bid at high bid project cost and low O&M quotes should be proceeded with caution

A HAM project is awarded to the player who quotes the lowest bid price. The bid price is the NPV of the bid project cost (BPC) and the first year O&M quote. Hence, a project can be awarded to a player who quotes a high BPC and a very low O&M quote.
In such a case, if construction cost falls significantly below BPC, a player can recover his investment during the construction period itself from construction support provided by NHAI thereby opening risks of concessionaire default.
It is hence recommended that promoter contribution in such projects be increased.

Latest amendment to MCA to aid upfront promoter contribution

Larger equity contribution from the promoters in the early stages of construction will reduce probability of concessionaire default. Also, the latest amendment to the MCA (December 2016) has changed the amount of termination payment (for all scenarios) to a lower proportion of bid project cost during the initial stages of construction thereby encouraging lenders to demand higher upfront contribution from the promoter.
Please refer to annexure to find details on change in termination payment.

13.0 Hybrid Annuity Model: HAM: Project analysis

CRISIL Research carried out an analysis of 25 hybrid annuity model (HAM) projects awarded by the National Highways Authority of India (NHAI) to determine project returns. For this analysis, the following assumptions have been considered:

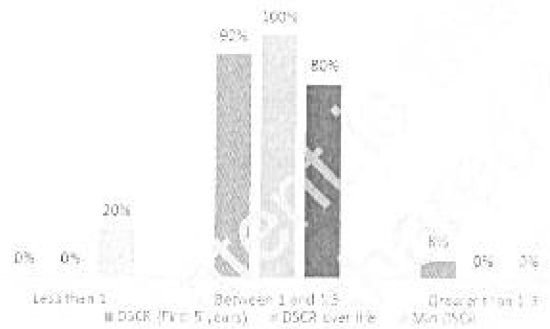
- A debt-equity ratio of 75:25 over the bid project cost
- Cost of debt of 11%
- The actual cost of construction should be equal to the NHAI benchmark cost
- Major maintenance is carried out once during the operational period

HAM payment structure to ensure comfortable coverage ratios

In November 2015, the MoRTH (Ministry of Road Transport and Highways) released the amended MCA (model concession agreement), where the major change was the alteration of the annuity payment schedule. In the first MCA (June 2015), annuity payments were more back-ended - the developer received only 8% of his investment in the first five years of operations. However, as per the new schedule, the developer will receive 25% of his investment within the same time period.

The purpose of this amendment was to improve the comfort for both the developer and lender, by increasing cash flows in the first few years of operations when the interest outgo is the highest.

An analysis of the 25 HAM projects revealed that all the projects had an average debt service coverage ratio (DSCR) of at least 1 in the first five years of operations and 2 projects had a DSCR of more than 1.5 in the same time period.
5 projects had a minimum DSCR of less than 1. However, this is usually in the last few years of operations, when the interest payments from the authority are the lowest.
DSCR spread in 25 HAM projects



Source: CRISIL Research

Coverage ratios to remain healthy even with higher frequency of periodic maintenance

The MCA does not specify the number of times a developer would have to carry out periodic maintenance during the operational period. While most projects are expected to be maintained with only a one-time periodic maintenance, there might be a requirement for the developer to carry out the periodic maintenance twice. Our analysis of the 25 projects reveals that the average DSCR over the life of the project in such a scenario is still maintained at a healthy 1.2, compared with 1.28 in case of only one-time periodic maintenance.

Most projects to provide comfortable returns to investors, room for alteration of debt equity for better comfort exist

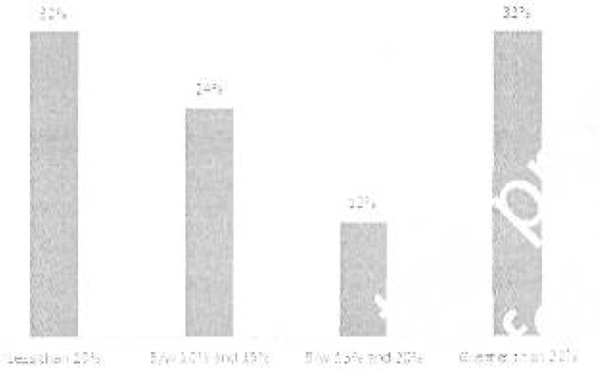
Our analysis also indicates that all projects except one will provide project returns above 8% providing reasonable comfort to lenders.

Project IRR spread in 25 HAM projects

Source: CRISIL Research

Only one project has an IRR of about 5%, as it is believed that the project was bid aggressively - the bid EPC cost is lower than the NHAI's estimated cost. Also, the project has been awarded to a player, which is new at executing national-level PPP projects. The project has not yet achieved financial closure and has crossed the 150-day limit, within which the financial closure is expected and is hence believed to be at a risk of being terminated.

Equity IRR spread in 25 HAM projects



Source: CRISIL Research

A large chunk of the HAM projects analysed are expected to provide the developer with a return of upwards of 20%. These projects with such high expected returns mostly fall in one of the two categories.

- Projects that were awarded when HAM was first introduced and competition was very low, allowing players to bid at a high premium
- Greenfield expressway projects and other projects with higher technical complexity, where competition is lower

About eight projects are expected to provide an equity return of less than 10%. However, three of these eight projects are contiguous stretches awarded to the same developer; hence, they can result in a considerable cost savings, providing better returns. Any cost savings on account of economies of scale have not been taken into account while calculating the returns.

Higher equity contribution to aid financial closure

Of the eight projects that have not achieved the financial closure (despite crossing the 150 -day limit), four are expected to provide the developer with returns greater than 10% at a 75:25 debt equity ratio. Hence, the financial closure of these projects can be achieved by reducing leverage the gearing and increasing promoter contribution.

Cost overruns to highly impact developer returns

As the revenue stream in a HAM project is fixed as a proportion of the bid project cost, any cost overrun can severely impact developer returns. For our sample of 25 projects, a cost overrun of 10% can reduce equity returns by ~900 bps. For this reason, some lenders are insisting on 100% upfront equity contribution to reduce chances of concessionaire default in case of large cost overruns.

14.0 Hybrid Annuity Model: HAM: Competition and Current Status

Competition intensified in first half of fiscal 2017...

The National Highways Authority of India (NHAI) started awarding projects under the hybrid annuity model (HAM) in fiscal 2016. The model took off at a slower-than-expected pace, with only two to three players participating. Only about 350 km was awarded in the fiscal, much lower than the NHAI's initial target, mostly due to stakeholder apprehensions about a new, untested model.

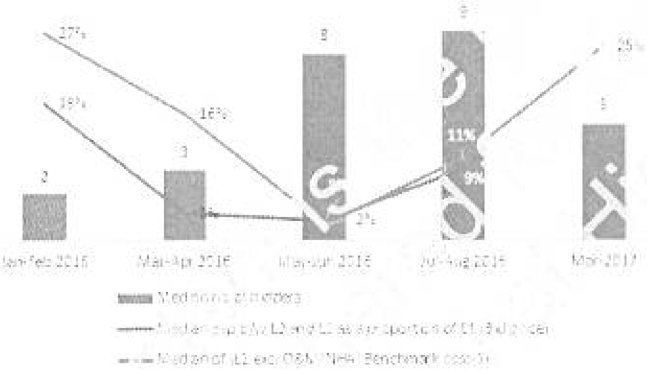
However, participation increased significantly towards the first half of fiscal 2017, with over nine-ten bidders for each project. Many new players such as Agroh Infra, APCO Infratech, and Kalthia Engineering entered the NHAI public-private partnership space.

however, lenders cautious approach has reduced competition sharply

Of the 29 HAM projects awarded by the NHAI till February 2017, 14 have achieved financial closure while eight others have crossed the 150 days' limit within which financial closure is expected. Four others are just a month from crossing the financial closure deadline.

The financial closure of some projects, mostly those awarded to players without an established track record, has been delayed as lenders are concerned with the low developer contribution. The lenders concern over concessionaire default in such a case is much higher.

As a result, HAM projects awarded in March 2017 witnessed lower participation of 5-6 bidders on average per project as compared with 9-10 in August 2016. Competition reduced since first half of fiscal 2017



Note: Data for March 2017 is based on analysis of 8 out of 17 projects awarded by NHAI

Source: CRISIL Research

Lower competition levels to increase NHAI, lender contribution

With competition levels now decreasing, projects are expected to be awarded at a higher premium to the NHAI cost. For example, one project which was first awarded in June 2016 and later terminated has been re-awarded in March 2017 at 13% higher bid price. This will result in higher NHAI outflows. Also, if the debt proportion is maintained, lenders' contribution to the project will also increase in exchange for a higher level of lender comfort.

Higher upfront promoter and authority contribution to aid project funding

Of the 29 HAM projects awarded by the NHAI till February 2017, 14 have achieved financial closure while eight others have crossed the 150 days' limit within which financial closure is expected.

Status of HAM projects awarded up to Feb 2017

	Project stretch	Concessionaire	Financial Closure	Appointed date	Deadline for Financial closure*	Comments
1	Delhi-Meerut Expressway - Pkg III	APCO-Chetnak		✗	Jul-16	
2	Delhi-Meerut Expressway - Pkg I	Welspun			Jul-16	
3	4 laning of Meerut-Bulandshahr	APCO Infratech		✗	Jul-16	
4	4 laning of Rampur-Kathgodam-Pkg I	Sadbhav Infra			Oct-16	
5	4 laning of Rampur-Kathgodam-Pkg II	Sadbhav Infra		✗	Oct-16	
6	4 laning of Chutmalpur-Ganeshpur and Roorkee-Chutmalpur-Gagalheri	MBL Infra	✗	✗	Oct-16	As per company reports, projects are in advanced stages of financial closure
7	4 laning of Gagalheri-Saharanpur-Yamunanagar	MBL Infra	✗	✗	Oct-16	
8	4 laning of stand alone Ring road/ Bypass-Nagpur city Package I	MEP JV Sanjose			Oct-16	
9	4 laning of stand alone Ring road/ Bypass-Nagpur city Package II	MEP JV Sanjose			Oct-16	
10	Construction of 4 Lane Laddowal bypass	Eagle Infra	✗	✗	Nov-16	
11	4 laning of Kagavadar-Una	Agroh Infra		✗	Dec-16	
12	4 laning of Bhavnagar-Talaja	Sadbhav Infra			Dec-16	
13	4 laning of Una-Kodinar	Sadbhav Infra			Dec-16	
14	4 laning of Talaja-Mahuva	MEP JV Sanjose		✗	Dec-16	
15	4 laning of Mahuva to Kagavadar	MEP JV Sanjose		✗	Jan-17	
16	2-laning with paved shoulder of Salasar-Nagaur section	Dinesh Chandra	✗	✗	Jan-17	
17	4 laning of Kodinar to Veraval	Agroh Infra	✗	✗	Feb-17	
18	4/2 laning with paved shoulders Dausa-Lalsot-Kauthun	PNC Infratech		✗	Feb-17	
19	4/6 laning of Kharar to Ludhiana	Ashoka Buildcon			Feb-17	
20	2 laning with formation of 4-lane of proposed Shimla Bypass (Kaithalighat to Shimla section)	Chetak Enterprises	✗	✗	Mar-17	
21	4 Laning of Lucknow-Sultanpur section of NH-56	Dilip Buildcon	✗	✗	Apr-17	
22	4 Laning of Binjhabahal - Telebani	Oriental Structural Engineers	✗	✗	Apr-17	
23	4 Laning from Phagwara to Rupnagar	GR Infra Projects	✗	✗	May-17	
24	4 laning of Tarsod - Fagne	MBL Infrastructure - Agroh Infra	✗	✗	May-17	
25	4 laning of Chikhali - Tarsod	Viswaraj Environmental	✗	✗	May-17	
26	2/4 laning of BRT Tiger Reserve Boundary to Bangalore section	Sadbhav Infra	✗	✗	May-17	Project in advanced stages of financial closure
27	2 Laning with PS of Gadu - Porbander	Kalthia Engineering	✗	✗	Jun-17	
28	4 laning of Tuljapur-Ausa	Dilip Buildcon	✗	✗	Aug-17	
29	6 laning from 401.200 to 6 Km 484 410 of NH-8 (PKG-6)	Atlanta	✗	✗	Aug-17	

*Note: * Deadline for financial closure is 150 days from the date of signing the concession agreement; Projects highlighted are ones which havent achieved financial closure and have crossed the deadline*

Source: CRISIL Research

Amendment to MCA to make promoter and authority contribution more upfront

Financial closure for projects awarded post December 2016 is expected to happen more smoothly following the amendment to the model concession agreement (MCA) in December 2016.

As per the amendment, construction support by the authority will come on 10% physical completion of the project as compared with 20% in the previous MCA. Also, lenders can receive a termination payment upon concessionaire default on only 30% physical progress as compared with 40% in the previous agreement. As per this amendment, the termination payment (for all scenarios) has been changed to a lower proportion of the bid project cost upon the achievement of the first three payment milestones, thereby encouraging lenders to demand higher equity contribution from the promoter in the initial stages of construction.

Please refer to annexure to find details on change in termination payment.

These amendments are targeted at improving lender comfort. Lenders had earlier raised concerns over little equity from both the developer and the authority during the initial stages of construction.

Projects awarded prior to December 2016 where lenders still have concerns over the promoters credibility are also expected to achieve closure with the condition that the promoter contributes higher equity during the initial stages of construction. As per our interaction with industry players, lenders are demanding 100% upfront equity contribution from the promoter.

These projects may also have to settle for a lower debt proportion.

15.0 Hybrid Annuity Model: Annexure

Hybrid annuity model Semi-annuity payment schedule

1	0.17%	2.10%
2	0.28%	2.17%
3	0.40%	2.24%
4	0.52%	2.31%
5	0.63%	2.38%
6	0.80%	2.45%
7	0.97%	2.52%
8	1.13%	2.60%
9	1.30%	2.68%
10	1.47%	2.76%
11	1.67%	2.84%
12	1.87%	2.93%
13	2.07%	3.02%
14	2.27%	3.11%
15	2.47%	3.20%
16	2.75%	3.30%
17	3.00%	3.40%
18	3.28%	3.50%
19	3.58%	3.61%
20	3.92%	3.72%
21	4.27%	3.83%
22	4.67%	3.94%
23	5.08%	4.06%
24	5.55%	4.18%
25	6.07%	4.25%
26	6.62%	4.33%
27	7.23%	4.44%
28	7.90%	4.71%
29	8.67%	4.75%
30	9.42%	4.75%
Total	100.00%	100.00%

Note: Completion cost remaining to be paid on COD refers to the 60% developer contribution

Source: CRISIL Research

Change in termination payment

	Old MCA (Nov 2015)		New MCA (Dec 2016)	
Scenario : Termination upon non-political event prior to COD				
	Physical progress	Termination payment	Physical progress	Termination payment
1st Payment Milestone	20%	**Lower of 90% of debt and 8.1% of BPC**	10%	**Lower of 90% of debt and 1.35% of BPC**
2nd Payment Milestone	40%	Lower of 90% of debt and 16.2% of BPC	30%	Lower of 90% of debt and 9.45% of BPC
3rd Payment Milestone	60%	**Lower of 90% of debt and 24.3% of BPC**	50%	**Lower of 90% of debt and 17.55% of BPC**
4th Payment Milestone	75%	Lower of 90% of debt and 30.38% of BPC	75%	Lower of 90% of debt and 30.38% of BPC
5th Payment Milestone	90%	Lower of 90% of debt and 36.45% of BPC	90%	Lower of 90% of debt and 36.45% of BPC

	Old MCA (Nov 2015)		New MCA (Dec 2016)	
Scenario : Termination upon indirect political event or authority default prior to COD				
	Physical progress	Termination payment	Physical progress	Termination payment
1st Payment Milestone	20%	**Lower of debt and 9% of BPC**	10%	**Lower of debt and 1.5% of BPC**
2nd Payment Milestone	40%	Lower of debt and 18% of BPC	30%	Lower of debt and 10.5% of BPC
3rd Payment Milestone	60%	**Lower of debt and 27% of BPC**	50%	**Lower of debt and 19.5% of BPC**
4th Payment Milestone	75%	Lower of debt and 33.75% of BPC	75%	Lower of debt and 33.75% of BPC
5th Payment Milestone	90%	Lower of debt and 40.5% of BPC	90%	Lower of debt and 40.5% of BPC

	Old MCA (Nov 2015)		New MCA (Dec 2016)	
Scenario : Termination upon concessionaire default prior to COD				
	Physical progress	Termination payment	Physical progress	Termination payment
1st Payment Milestone	20%	NIL	10%	NIL
2nd Payment Milestone	40%	**Lower of 50% debt and 9% of BPC**	30%	**Lower of 50% debt and 5.25% of BPC**
3rd Payment Milestone	60%	**Lower of 60% debt and 16% of BPC**	50%	**Lower of 60% debt and 11.7% of BPC**
4th Payment Milestone	75%	Lower of 70% debt and 24% of BPC	75%	Lower of 70% debt and 24% of BPC
5th Payment Milestone	90%	Lower of 80% debt and 32% of BPC	90%	Lower of 80% debt and 32% of BPC

Note: BPC=Bid project Cost

Source= CRISIL Research

16.0 Toll-Operate-Transfer: Summary

Success of TOT could bring Rs 400bn worth investments until FY19 to NHAI

Development of TOT model need of the hour

The toll-operate-transfer (TOT) is a new PPP model introduced by the Ministry of Road Transport and Highways (MoRTH) for the maintenance of roads. The model involves leasing out of operational national highways for periods as long as 30 years to collect toll revenue in return for one-time upfront payment to the government. The successful implementation of this model is essential to the sector given:

- Weak financial position of road developers resulting in most projects now being executed using public funds thereby putting stress on NHAIs funding position
- Increased awarding on EPC contracts will translate into more projects to be maintained by NHAI thereby utilizing NHAIs bandwidth and funds. Around 6500 kms are being maintained by NHAI today and this number is expected to more than double over the next 5 years.
- Weak participation of O&M players in existing PPP models for maintenance (OMT) due to problems experienced in the past. Only about 6-7 O&M players in the country continue to participate in OMT projects today.

A nascent model even globally, TOT comes with some crucial concerns

The Ministry released the TOT MCA in May 2016 after implementing several recommendations from stakeholders. Still, some concerns remain pertaining to latent defects in the projects that can significantly increase maintenance costs, absence of compensation in case of traffic falling significantly below NHAIs estimates and development of alternate routes. Since these concerns are yet to be addressed, in flows from this model are not expected before the second half of the next fiscal.

The TOT has been adopted only in a handful of projects even globally and this highlights the risk inherit in projects of this nature. The Indiana Toll Road Company in the United States had filed for bankruptcy in 2014 due to actual traffic falling below estimates. Also, in some projects, the gap between the first two bidders was very high underscoring the difficulty in valuation of projects whose revenues depend on traffic movement for long time periods. Valuation of these projects is expected to be even more difficult in a developing country like India where events like commencement of the Dedicated Freight Corridor and implementation of the Goods and Services Tax can significantly impact traffic growth and composition

TOT could target new category of investors along with participation from existing players

O&M players in the country are shying away from existing PPP models for maintenance as a result of problems faced in the past. O&M players were unable to effectively manage traffic risk while periodic payments to be made to NHAI were increased irrespective of traffic growth. Also, players felt they were penalized heavily due to their low bargaining power with the Authority. Hence, interest for OMT fell down drastically.

TOT hence targets a new category of investors who are averse towards construction risk but are interested in making long term investment in the countrys infrastructure. These include sovereign wealth funds, pension and insurance funds. Even INVIT's through their SPV's can directly participate in bidding or bidders can transfer their projects to INVIT's after 2 years of bidding. These investors are expected to tie up with local O&M players to carry out the maintenance activity. We believe this would significantly aid reducing risk for TOT kind of projects.

First 75 projects to bring in Rs 400bn; can support construction of 2800 kms

The first 75 projects that are expected to be offered under this model aggregate a length of 4500 km. CRISIL Research estimates they can fetch the NHAI Rs 380 billion to Rs 420 billion, providing a return on equity between 14% and 16% to the TOT concessionaire.

Considering the average cost of constructing a four-lane highway to be Rs 140 million (excluding land costs), these funds can aid the construction of approximately 2800 km of national highways, which is close to the CRISIL-estimated NHAI construction for fiscal 2017.

17.0 Toll-Operate-Transfer: TOT: Key features

NHAI paves the way for new road maintenance model

Under the newly formulated toll-operate-transfer (TOT) model, the National Highways Authority of India (NHAI) will transfer ownership of operational highways to private entities (the concessionaire) for a fixed period (the concession period). The concessionaire will make a one-time upfront payment (concession fee) to the Authority in exchange for the right to collect toll on the stretch during the period, during which the concessionaire will be responsible for maintaining the road.

Key features of the TOT model

Concession period	30 years
Bidding parameter	Concession fee
Payment schedule	One-time upfront payment to NHAI
Responsibilities of concessionaire	Maintenance and Tolling
Concessionaire revenue	Toll collected

Note: Concession period at 30 years as per the model concession agreement released by the ministry of road transport and highways Source: CRISIL Research

Working of the TOT model

Source: CRISIL Research

The projects to be offered under the TOT model were mostly built using public funds (cash contracts or engineering, procurement and construction contracts). However, as of now, the government also proposes to offer a few annuity projects under the TOT model (please refer to annexure for EPC/annuity projects) wherein the original concessionaire will be responsible for maintaining the road till the end of the concession period while the TOT concessionaire will only be responsible for tolling. At the end of the annuity concession period (called the operations and maintenance or O&M handover date), the TOT concessionaire will take over the maintenance.

However, CRISIL Research expects annuity projects may not be immediately offered under the new model. This is because potential TOT players have expressed concerns that the project may not be maintained up to expected standards by the original concessionaire, thereby making it difficult for the TOT concessionaire to assess maintenance costs.

NHAI plans to offer projects in bundles, with each bundle comprising projects which may be:

- Contiguous to ensure operational efficiency, or
- Diversified across states to reduce region-specific traffic risk.

Ministry targets 75 projects for bidding in fiscal 2018

The ministry of road transport and highways (MoRTH) released the draft of the TOT model concession agreement (MCA) in May 2015. The ministry has been holding discussions with prospective stakeholders on a regular basis to address their concerns over the new model.

Major milestones in TOT

Source: CRISIL Research

In May 2016, the ministry came out with an MCA that contained several important changes from the draft version to increase stakeholder comfort.

The most important changes include:

Termination payment: The draft MCA had no provision for a termination payment upon concessionaire default, which was an area of concern for lenders. Based on stakeholder recommendations, the Authority will now pay 70% of the adjusted bid value in case of concessionaire default, providing some comfort to lenders.

Competing roads: Development of competing roads has always been an issue since it can lead to significant traffic diversion. Even when tripartite agreements have been signed by the NHAI with state governments to not develop alternate routes, there are several instances of these agreements being violated.

A new clause has been added in the MCA directing that if a competing road has been developed, then the concession period will be increased to compensate the loss in revenue due to traffic diversion. Also, the toll fee on the new route has to be 25% higher than on the initial route.

Concession period: The MCA increased the concession period to 30 years from 15-20 years in the draft MCA. However, the actual concession period may vary project-wise.

(Please find full list of these amendments in the annexure).

In August 2016, the Cabinet Committee on Economic Affairs (CCEA) authorised the NHAI to monetise its road assets under the TOT model. Of 104 such projects - aggregating 6,042 kilometres - under the NHAI (projects listed in the annexure), 75 with an aggregate length of 4,400 km have been shortlisted for the first phase of TOT.

Some concerns yet to be worked out

Even with the MCA taking care of many concerns, a few still remain to be addressed before formal bidding commences under the TOT model.

Latent defects

Concern: Our interactions with stakeholders indicate this remains the biggest concern regarding the TOT model. The NHAI will appoint technical consultants to evaluate the project's condition prior to awarding it under TOT. The concessionaire also has the option to do the same. However, major issues with projects can go undetected even in a thorough examination only to surface during the concession period, thereby significantly increasing maintenance costs.
Recommendation: Stakeholders are of the opinion that costs borne by the concessionaire to fix these latent defects should be borne by the Authority as it is not possible to account for these costs in their bids. However, how the Authority and concessionaire decide what comprises the latent defects needs to be addressed.

Limited upside potential with unlimited downside risk

Concern: Variation in traffic is the largest risk under the TOT model since the entire revenue is from toll collected and for a period as long as 30 years. In this scenario, there is no provision to compensate the concessionaire in case actual traffic falls below even the NHAIs estimates. However, as per the MCA, if traffic exceeds 90% of the design capacity in any one year, alternate routes can be built without any compensation.
Recommendation: Stakeholders express that revenue from traffic be reviewed and any significant deviation from initial estimates beyond a particular level be compensated by an increase in the concession period.

Competing roads

Concern: According to the MCA, if the length of the alternate route is more than the original route by more than 20%, then the road is not considered to be a competing road and the concessionaire will not be entitled to any compensation.
Recommendation: Stakeholders believe this remains a major grey area in the MCA as commuters may still prefer to take the longer route if it is more convenient in terms of the number of lanes, quality of the road, etc. Therefore, they believe the condition should change from one project to another.

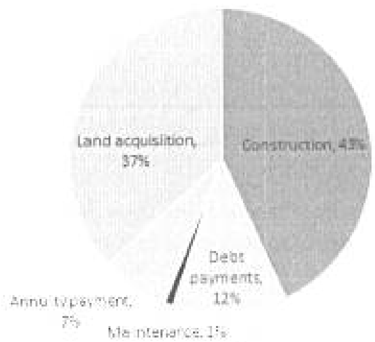
18.0 Toll-Operate-Transfer: TOT: Need and benefits

NHAIs ambitious execution target needs more funds

In last few years, government has stepped up its allocation to the roads sector, but at the same time has disproportionately increased its target for execution. The Ministry of Roads set a target of 8,000 km execution by NHAI for fiscal 2017, while actual execution was only about 2,200 km in the previous year.

At the same time, costs to be borne by NHAI have skyrocketed in recent years as a result of increased land costs and higher execution of publicly funded projects. Expenses are expected to rise further following a new policy on arbitral payments and increasing recourse to the hybrid annuity model (HAM), under which 40% of the project cost is borne by the awarding authority.

NHAI cost break-up (Rs 390 bn) in 2016-17E



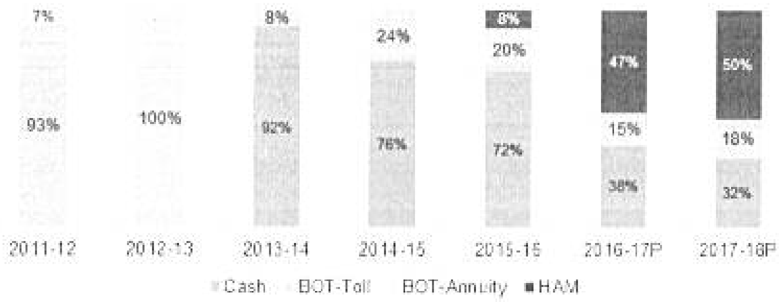
Source: NHAI, CRISIL Research

In view of increased targets and higher costs, the ministry and NHAI have been exploring new ways of funding such as borrowing from institutional investors (LIC and EPFO) and masala bonds. They are now aggressively pursuing the toll-operate-transfer (TOT) model, under which they stand to receive upfront payment for their operational projects.

NHAI to need higher allocation of funds for construction costs in coming years

Post the debacle that engulfed the roads sector between 2011 and 2013, private participation dipped significantly as a result of weak financial position of players and fears of risks surrounding the build-operate-transfer (BOT) model. This is reflected in the awarding break-up, given below.

Significant shift in NHAI awarding



Source: NHAI, CRISIL Research

In the past three years, BOT projects have lost out to EPC (cash) projects as the latter require limited upfront capital and involve lower risk.

To boost private participation, the government introduced HAM in fiscal 2016, wherein 40% of the project cost is to be funded by the government and the remaining by the private developer. This model took off at a rather slower-than-expected pace in fiscal 2016 and only ~350 km were awarded. However, participation of players in these projects improved significantly this year; in the first 3 quarters of this fiscal, almost half of the projects awarded were under HAM.

Following this trend of awarding and higher time taken for financial closure of BOT projects, execution over next two years will be dominated by EPC and HAM projects. Execution of these projects will put stress on NHAIs financial position.

Land cost, arbitrage laws further fuel NHAI funding needs

NHAI will have higher outflows than in the past, as the cost of acquiring land has increased by 2.6 times in the last three years following the new Land Act (RFCTLARR 2013).

Also, government agencies are now mandated to deposit 75% of arbitral awards which are in favour of contractors and further challenged by the agencies. Total outflow for NHAI from this mandate could be up to Rs 60 billion over 2016-17 and 2017-18. As of January 2017, NHAI has already received demand for payment of Rs 24 billion as part of this policy and has released Rs 4.3 billion.

Execution bandwidth a priority for NHAI

There are other existing models for maintenance and tolling of operational projects, namely, the operate-maintain-transfer (OMT) and the toll fee collection model (models discussed in Comparison: Types of maintenance contracts chapter). However, these contracts are for a much shorter period of time and hence require continuous NHAI intervention for re-bidding of the projects. With the TOT model, the concession period is currently expected to be as long as 30 years; this will enable NHAIs bandwidth to concentrate more on project development and up-gradation.

Evolution of PPP models critical for road maintenance

Only 40% of required funds made available for maintenance of NHAI stretches

Maintenance of roads has been on the backburner due to non- availability of funds and bandwidth with NHAI, to effectively manage operations and maintain completed projects. As per our interactions with NHAI, only about 40% of the total required funds for maintenance were made available in 2015-16.

NHAIs focus so far has been on development or up-gradation of projects, as a result of which there is now a compelling need to step up road maintenance in the country.

NHAI's O&M requirement split

Source: NHAI, CRISIL Research

Length under NHAI for maintenance to double in next five years

Currently, NHAI undertakes maintenance of about 6,500 km (see above) of roads through public funds. This number can rise sharply by almost 8,000 km -- as NHAI in the past few years has awarded more projects on cash contract basis where the onus of maintenance upon completion of the defect liability period (period when the road is maintained by the contractor) is on the awarding authority. Hence, NHAI is now focussing on developing PPP maintenance contracts.

19.0 Toll-Operate-Transfer: Comparison: Types of maintenance contracts

Prevailing maintenance contracts inadequate

Most prevalent maintenance models hit a road block

A model similar to toll-operate-transfer (TOT) already exists for the maintenance of roads called the Operate-Maintain-Transfer (OMT). However, under OMT, the concession period is much shorter, from 6 to 9 years and the payment is made to the NHAI over the entire concession period.

Comparison between TOT and OMT models

	TOT	OMT
Concession period	30 years	6-9 years
Payment schedule	One-time upfront payment to NHAI	Yearly payments increased by 10% each year
Type of maintenance	Routine and Periodic	Usually only Routine

Source: CRISIL Research

O&M players inability to manage traffic risk led to failure of OMT

When NHAI first introduced OMT in 2011, many small O&M players participated in these projects. However, the inability of these players to effectively forecast traffic for the duration of the concession period led to a rapid decrease in interest for this model. While players faced several issues with the OMT model, the major issue was that the concession fee was increased by a fixed 10% every year, irrespective of actual traffic movement.

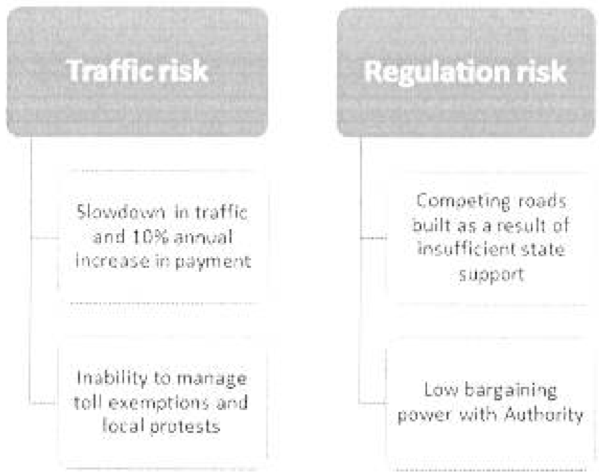
As a result, today only about 6-7 large O&M players continue to participate in OMT projects. These handful of players are unable to cater to the large maintenance requirements in the country.

Major OMT players in the country

Player	No. of projects awarded	Length (lane km)	Estimated project cost (Rs mn)
MEP Infra	5	2550	3400
Prakash Asphaltings	5	2400	4150
Dinesh Chandra Agarwal	2	2200	2600
SMS Infra	2	1600	3000
Patel Infra	1	1050	1850

Source: CRISIL Research

Major issues faced in OMT model



Traffic risk

- Dedicated O&M players lack the ability to efficiently forecast traffic for the duration of the OMT concession period. Also, as per the OMT contract, the concession fee (to be paid by the concessionaire to the NHAI) has to be increased 10% annually. As a result, players got their fingers burnt on these projects as traffic slowed down and concession fees continued to rise.
- Toll exemptions and protests at toll plazas continue to effect toll collections; exemption on an average pan-India is as high as 12% of the toll collection.

Regulation risk

- **Low bargaining power of concessionaire:** OMT model quickly lost its popularity among smaller O&M players as their bargaining power with the NHAI was low. Players felt that conditions laid out were too stringent, while penalties imposed were too high. Increase in costs due to change in scope were reimbursed by the NHAI and usually resulted in disputes.
- **Competing roads:** Alternate routes were developed by state agencies resulting in traffic diversion despite signing of tri-partite agreements. Furthermore, no compensation for these alternate routes was provided to the OMT players.

Toll fee collection contracts only curb toll leakages

Another type of contract widely used by the NHAI in operational projects is the toll fee collection contract. Under this contract, road maintenance is undertaken by the NHAI itself through a separate O&M contractor and the concessionaire is only responsible for toll collection with a fixed share or an upfront fee given to NHAI.

This model only ensures reduction of toll leakages, while maintenance of the road can suffer due to scarcity of funds at a central level. Toll fee collection contracts are short duration contracts, ranging between 1-2 years, thereby requiring regular government intervention and hence, high agency bandwidth utilisation.

TOT can play vital role in maintaining highways

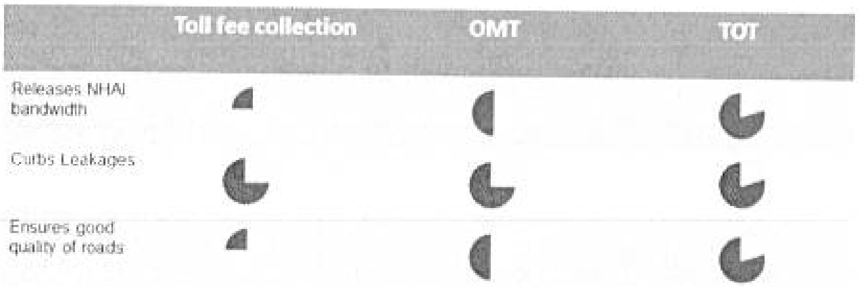
TOT to bring new category of investors into play

As a result of the issues faced by O&M players in the OMT model (mentioned above), their participation in PPP projects dropped significantly and they continued to work as O&M contractors. With a purpose to revive private participation in maintenance projects, the government has decided to roll out TOT model to attract a whole new set of players. The model aims to elicit interest from a new category of investors- institutional investors which include domestic and foreign pension and insurance funds, sovereign funds etc.

TOT model will be suitable for these investors as they do not have the ability to take on construction risk but are interested to make long-term investments in the country's road infrastructure. These players are expected to appoint local O&M players to undertake operation, maintenance and tolling of the road during the concession period, thereby creating good opportunity for O&M players as well.

Advantages of TOT over previous models

Effectiveness of different maintenance/tolling contracts



Note: Shading represents effectiveness in respective parameter

- Releases NHAI bandwidth

As the TOT concession agreement is for long term (up to 30 years) as compared to 6-9 years in OMT and only 1-2 years in toll fee collection contracts, NHAI intervention for re-awarding is required only once in 30 years, thereby significantly releasing its bandwidth. Offtake of TOT models can, hence facilitate NHAI to concentrate on its core responsibilities- upgradation and development of new projects.

- Curbs leakages

In all the aforementioned models, the concessionaires revenue comes solely from the toll collected. Hence, all the three models provide effective solutions to curb toll leakages. However, the TOT model involves a longer concession period, thereby incentivising the concessionaire to invest in technology to ensure better toll collection practices.

- Ensures improved quality of roads

In toll fee collection model, the contractor is not responsible for maintaining the road as maintenance is undertaken by NHAI through another contractor. Hence, maintenance of such projects can be affected due to lack of funds and manpower.

In the case of OMT, while the maintenance responsibility lies with the concessionaire, since the period is usually only 6-9 years, towards the end of the concession period, it is observed that the quality of maintenance works reduces in order to save costs. Furthermore, OMT contracts are formed in a way to avoid periodic maintenance, thereby putting the responsibility of periodic maintenance back on NHAI.

Quality of maintenance work carried out through a TOT contract is expected to be superior since any superficial fix of defects will only pose bigger problems to the concessionaire later during the concession period.

20.0 Toll-Operate-Transfer: TOT : Expected Agency inflows

First 75 projects could fetch NHAI Rs 400 billion

The first 75 projects that are expected to be offered under the toll-operate-transfer (TOT) model aggregate a length of 4500 km. CRISIL Research estimates they can fetch the National Highways Authority of India (NHAI) Rs 380 billion to Rs 420 billion, providing a return on equity between 14% and 16% to the TOT concessionaire.

Considering the average cost of constructing a four-lane highway to be Rs 140 million (excluding land costs), these funds can aid the construction of approximately 2800 km of national highways, which is close to the CRISIL-estimated NHAI construction for fiscal 2017.

However, we believe these funds cannot be raised in a short period and will be spread across one to two years as the TOT model is very fresh and will face some teething troubles.

Dedicated freight corridor can impact TOT inflows

The expected fund inflow of Rs 400 billion is lower than the initial estimate of about Rs 700 billion by the ministry, mostly as we have taken a more conservative estimate for traffic growth. We have considered the anticipated operationalisation of the dedicated freight corridor (DFC), which is expected to impact road freight traffic. About 2,280 km of the DFC of the planned 3,360 km pass through states where the first 75 projects for TOT are located. (Please refer to the Annexure for the geographical spread of TOT projects).
While the actual impact of the DFC on traffic will depend on the specific stretch, we have taken an aggregate traffic volume growth of 4% per year leading to a revenue growth of 7-8% for the next 30 years .

Traffic assumptions to play a major role in TOT valuation

Rs bn	12%	14%	16%
~8%	~470	~420	~380
~10%	~600	~520	~450
~13%	~900	~750	~630

Source: CRISIL Research

Success of TOT to open large investment opportunity in the sector

Since fiscal 2014, the NHAI has been awarding most of its projects on engineering, procurement and construction (EPC) basis and is expected to do so for at least the next two years. Most of these projects have a defect liability period of four years, during which the contractor is responsible for carrying out maintenance. If the TOT model proves to be successful, then post the completion of the defect liability period, these projects are expected to become candidates for the TOT model.

Since fiscal 2014 till December 2016, the NHAI has awarded approximately 11,300 km, of which a major chunk of 8,000 km has been awarded on the EPC mode. These 8,000 km can be offered under the TOT model in the next 5-6 years.

TOT potential

104 NHAI projects aggregating a length of 6500 kms	• Expected to be offered on TOT over the next 2-3 years
8000 kms of EPC projects awarded from 2013-14	• Expected to be offered on TOT in the long term

Source: CRISIL Research

21.0 Toll-Operate-Transfer: TOT : A global perspective

Only a handful of projects monetised globally

The Ministry of Road Transport and Highways (MoRTH) has been setting itself unprecedented targets and, to support these targets, it has been exploring new mechanisms of funding. The toll-operate-transfer (TOT) model can be considered a bold move by the ministry, as this model has been used in a very few projects even globally.

A list of TOT projects implemented globally

Project	Length (miles)	Year of award	Tenure (years)	Bidding Amount (in USD Bn)	Country
Chicago Skyway	7.8	2004	99	1.8	USA
Indiana Toll Road	157	2006	75	3.8	USA
Northwest Parkway, Denver	8	2007	99	0.6	USA
Pocahontas Parkway	8.8	2007	99	0.6	USA
Puerto Rico PR-22 & PR-5	52	2011	40	1.4	USA
Autoroutes Paris-Rhin-Rhône (APRR)	1434	2005	25	14.1	France
Societe des Autoroutes du Nord et de l'Est de la France (Sanef)	1083	2005	25	10.6	France
Autoroutes du Sud de la France (ASF)	1880	2005	25	23.2	France
407 ETR Ontario	67.1	1998	99	3.2	Canada

ource: CRISIL Research

Global examples underscore valuation-linked concerns

Valuation of a TOT project is not easy, since revenue depends on traffic and history has shown us that there is a lot of room for error when it comes to forecasting traffic. Of the few projects that have been offered on this model in other countries, discrepancy in forecasting traffic for long concession periods come out quite clearly.

Indiana Toll Road (ITR)

Macquaire and Ferrovial paid about $3.8 bn to collect toll on the project for 75 years. However, in 2014, the SPV formed for the same, ITR Concession Company LLC, filed for bankruptcy. This was caused majorly by the overestimation of traffic by the authorities and the company. Traffic fell significantly below estimates after the 2008 recession. In the process of aggressive bidding, the winning bid was 35% higher than the second highest bid.

Chicago Skyway

A consortium formed by Cintra, a Spanish company, and the Macquarie Group took over the toll road by presenting a bid that surpassed the second-highest bid by more than $1 bn (the winning bid was $1.8 bn)

India not strictly comparable with foreign projects

Valuation of Indian projects expected to be harder, traffic more prone to deviations

Traffic composition of Indian road traffic is starkly different from that in other countries. A whopping 65% of India's freight travels on road, as compared with only 40% in the case of the United States , and only 22% in the case of China. A higher proportion of freight traffic makes the traffic more cyclical and, hence, more difficult to forecast.

Also, given that India is a developing country, a number of upcoming events - in the form of the implementation of the Goods and Services Tax and the commissioning of new rail lines, especially the Dedicated Freight Corridor, (DFC) - can significantly make traffic projection very difficult for periods as long as 30 years increasing risk levels associated with the TOT model.

Bidding parameter vary between countries

The bidding parameter for TOT in India is the same as that used in projects in the US. Projects in the US were awarded to the bidder, which offered the highest upfront payment.

However, in France, bidders also had to provide an industrial plan for the area around the project. Thus, the bids were not just evaluated on the bidding amount, but also on the qualitative aspects of each bid.

Takeaways from global examples

- **Toll rates:** The concession for the Indiana Toll Road(ITR) prescribes toll rate increases as the greater of 2%,CPI, or per capita thereby ensuring a minimum revision of 2% per year. Most projects considered for TOT in India were awarded prior to 2008 thereby linking toll revision completely to Wholesale Price Index (WPI). Hence, toll revision can even become negative in years with negative WPI.
- **Traffic composition:** In the case of the Indiana Toll Road, about 65% of toll revenue is generated from commercial vehicles and this is considered to be on the higher end. In India, an average 85% of toll revenues is generated from commercial vehicles making traffic more cyclical. In projects with higher commercial traffic - likes of ITR- years in which traffic falls below pre establish benchmarks , a provision is aloowed to waive operators maintenance expenditure for that year.
- **Concession period:** The concession period for projects in the United States and Canada is as long as 99 years as the traffic in these countries is more stable than in a developing country like India where traffic forecast for even 30 years can become very difficult.
- **Debt service coverage ratio (DSCR):** in the case of 407 ETR Ontario project in Canada, rating agencies consider a DSCR of 1.35X and in the case of ITR a DSCR of 1.3X in a downside scenario. As per the project loan agreement of ITR, the financial covenant is a DSCR of at least 1.1x.
- **Gearing:** The Indiana Toll Road has a debt equity ratio of 43:57. Our interactions with interested participants indicate a gearing of 70:30 for projects in India.

22.0 Toll-Operate-Transfer: Annexure: Projects and details

Modifications in TOT MCA from draft MCA

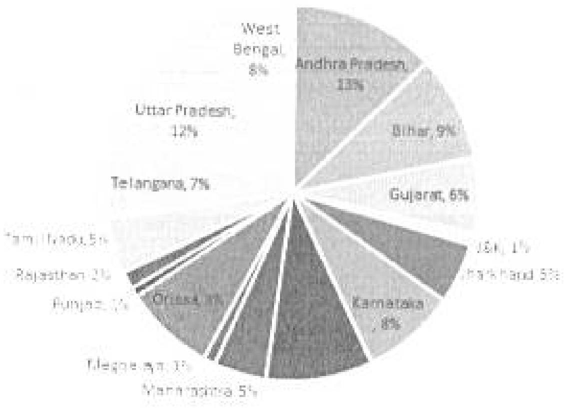
Amendments in MCA (2016) from the draft version (2015)

Concession Period	15-20 years	30 years
Termination payment upon concessionaire default	No payment	Authority will pay 70% of adjusted bid value
Termination payment upon Authority default	The Authority will have to pay debt due and a) 150% of Adjusted Equity **OR** b) proportionate concession fee for the unexpired concession period	Authority will pay 105% of free cash flow for unexpired period
Termination Payment for Force Majeure event - Non political event	90% of debt due less insurance cover	70% of adjusted bid value, less insurance cover
Termination Payment for Force Majeure event - Indirect political event	Payment will be due debt less insurance plus a) 110% of adjusted equity **OR** b)proportionate concession fee for the unexpired concession period	100% Adjusted bid value less insurance cover
Competing roads	No competing road will be built as long as traffic in any year does not exceed 90% of the designed capacity	If competing road is opened to traffic during concession period, the concession period will be extended which shall be equal in duration to the period between the opening of competing road and the end of concession period.
Minimum fee for competing roads	not present	25% higher than fee on original route
Revenue share post augmentation	Additional fee collected over and above target traffic to be shared between Authority and Concessionaire in ratio of 85:15	No revenue shared with the Authority

Source: CRISIL Research

Geographical spread of first 75 projects

State-wise spread of first 75 projects



Note: Above proportion in terms of length of projects

Source: CRISIL Research

History of toll collection of first 75 projects

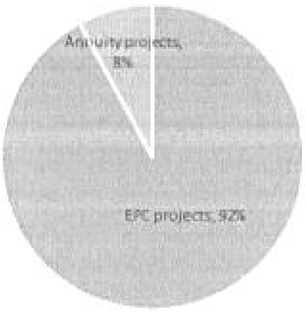
No of years since commencement of toll collection

Note: Above proportion in terms of number of projects

Source: CRISIL Research

Proportion of EPC and annuity projects

Proportion of EPC/annuity projects in first 75 projects



Note: Above proportion in terms of number of projects

Source: CRISIL Research

List of first 104 projects for TOT

4	Maharashtra Border - Belgaum	Karnataka	55.240	457.30	312.60	↔
4	Hirebagewadi- Hattargi	Karnataka	22.000	208.50	182.30	↔
4	Gabbur - Devegiri	Karnataka	64.000	457.00	354.20	↔
4	Devgiri-Hadadi	Karnataka	90.000	572.50	502.50	↔
4	Hadadi- Doddasiddan- ahally	Karnataka	71.000	460.60	405.00	↔
5	Gundugolanu -Siddhantham	Andhra Pradesh	60.371	906.50	764.90	↔
5	Siddhantham- Diwancheruvu	Andhra Pradesh	60.37			↔
5	Diwancheruvu- Tuni (Annuity)	Andhra Pradesh	71.27	763.40	637.80	↔
5	Tuni-Ankapalli	Andhra Pradesh	85.27	991.10	726.70	↔
5	Visakhapatnam Champawat	Andhra Pradesh	46.340	371.20	271.80	↔
5	Champawat- .Srikakulam	Andhra Pradesh	48.000	387.30	271.70	↔
5	Srikakulam- Nadigama	Andhra Pradesh	62.000	478.20	355.10	↔
5	Nandigama- Icchapuram	Andhra Pradesh	66.150	337.60	221.30	↔
5	Icchapuram- Puintola	Andhra Pradesh	67.454	309.30	273.10	↔
5	Puintola- Sunakhala	Orissa	57.500	526.60	420.70	↔
5	Sunakhala -Bhubaneshwar	Orissa	76.685	389.60	398.70	↔
5	Chetia- Bhadrak	Orissa	74.500	457.10	385.20	↔
5	Bhadrak - Balasore	Orissa	62.641	526.60	428.70	↔
2	Dankuni-Palsit	West Bengal	63.749	1064.40	767.30	↔
2	Palsit-Panagarh	West Bengal	67.750	1030.10	814.30	↔
2	Barwa Adda- Gorhar	Jharkhand	78.750	605.60	554.40	↔
2	Gorhar Barachatti	Jharkhand	80.000	733.20	525.00	↔
2	Barachatti- Aurangabad	Bihar	80.000	556.70	390.90	↑
2	Handia-Rajatalab [Handia (Allahabad)-Rajatalab (Varansi)]	Uttar Pradesh	72.389	484.80	433.60	↔
2	Fatehpur - Khokharaj (Rampur- Thariwan- Khokharaj)	Uttar Pradesh	58.000	377.70	331.80	↓
2	Usrania (Thariwan)- Chakeri	Uttar Pradesh	81.210	673.10	591.90	↓
28	Kotwa-Mehsi- Muzaffarpur	Bihar	80.000	327.90	319.10	↔
31	Khagaria - Purnea	Bihar	63.961	193.90	155.50	↔
31	Khagaria - Purnea	Bihar	63.961	86.50	91.50	↔
77	Muzaffarpur-Sonbarsa2 lane with PS	Bihar	65.472	55.20	0.00	↔
8A	Bamanbore - Garamore	Gujarat	71.537	273.30	234.90	↔
8A	Garamore - Samakhiyali	Gujarat	52.497	530.90	546.40	↔
14	Palanpur Khemana Aburoad	Gujarat	45.000	284.50	295.30	↑

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	↓
8B	Porbandar - Bhiladi	Gujarat	51.460	37.60	37.90	↔
8B	Bhiladi - Jetpur	Gujarat	65.100	107.20	132.20	↔
1A	Jammu Bypass - Udhampur	J&K	45.392	303.00	1.10	↔
33	Hazaribagh - Ranchi	Jharkhand	73.790	530.60	354.10	↔
7	AP/ Karnataka Border - Devanhalli	Karnataka	71.450	359.70	331.40	↔
7	Lakhnadon - Mohagaon	Madhya Pradesh	55.930	242.20	236.40	↔
7	Dood-han - Kelapur(Nagpur - Hyderabad)	Maharashtra	30.000	96.40	72.60	↔
69	Nagpur-Betul	Maharashtra	58.060	155.50	0.00	↔
69	Nagpur-Betul	Maharashtra	55.680	114.30	1.90	↔
69	Nagpur-Betul	Maharashtra	58.080	132.40	2.80	↔
40&44	Shilongbypass	Meghalaya	47.060	125.30	64.80	↔
5A	Chandikhol- Paradip	Orissa	76.588	190.80	212.10	↔
14	Aburoad - Palanpur	Rajasthan	31.000	229.50	203.80	↓
11	Reengus- Sikar	Rajasthan	35.597	177.30	80.50	
210	Trichy- Karaikudi	Tamil Nadu	37.380	64.50	58.70	↔
210	Trichy- Karaikudi	Tamil Nadu	34.200	62.50	58.60	↔
45	Tambaram - Tindivaram	Tamil Nadu	46.500	725.20	633.50	↔
45	Tambaram - Tindivaram	Tamil Nadu	46.500	555.40	521.20	↔
7A	Tirunelveli - Tuticorin	Tamil Nadu	47.250	152.40	96.20	↔
7	Chegunta - Bowenpally	Telangana	51.538	506.90	446.70	↔
	Adloor Yellareddy - Chegunta	Telangana	51.538			↔
7	Maharashtra/AP Border - Islam Nagar	Telangana	55.000	221.50	21.23	↔
7	Islam Nagar - Kadal	Telangana	53.010	261.30	232.30	↔
7	Kadtal-Armur	Telangana	30.900	193.40	152.70	↔
7	Kothakota bypass - Kurnool	Telangana	74.622	797.50	684.40	↔
25 & 26	Jhansi - Lalitpur(Annuity Project	Uttar Pradesh	49.700	205.80	74.20	↔
26	Jhansi - Lalitpur (Jhansi - Lakhnadon)	Uttar Pradesh	49.305	129.70	102.30	↔
25	Orai-Bara	Uttar Pradesh	66.813	511.50	525.20	
24 B	Lucknow - Raibrelly	Uttar Pradesh	75.000	276.30	7.00	↓
24	Hapur - Garhmukteshwar	Uttar Pradesh	35.000	475.30	379.70	
24	Garhmukteshwar - Moradabad	Uttar Pradesh	56.250	487.00	390.60	
27	Cable stay Bridge at Naini	Uttar Pradesh	5.410	112.40	32.10	
31	Purnea - Dalkhola	West Bengal	36.300	203.70	181.80	↔
31	Dalkhola - Islampur	West Bengal	51.970	354.70	343.60	↔
31	Sonapur - Ghoshpukur	West Bengal	44.000	319.60	272.80	↔
31C	Salsalabari - Assam-Westbengal borde	West Bengal	26.500	82.90	20.90	↔
41	Kolaghat - Haldia	West Bengal	52.700	452.90	421.60	↔
80	Mokama - Munger	Bihar	60.470	42.00	39.30	↔
1	Amritsar - Wagah	Punjab	35.930	30.30	30.10	↔
347	Multai - Chhindwara up to Chhindwara	Madhya Pradesh	75.552	4.40	0.40	↔
347	Chhindwara (from Ring Road) - Seoni	Madhya Pradesh	61.265	40.90	3.50	↔
547	Saoner - Chindwara Section	Madhya Pradesh	75.460	56.30	0.00	↔
547	Chhindwara - Amarwara	Madhya Pradesh	76.025	33.90	2.50	↔
547	Amarwara - Narsinghpur Section	Madhya Pradesh	70.070	28.40	2.40	↔

Note: Impact of DFC of traffic on a stretch is considered to be positive or negative depending on if the stretch runs parallel (negative) or perpendicular (positive) to the DFC

Source: CRISIL Research

23.0 Thought corner : Ham in a Jam

Construction of at least 800 km highways could be at risk this fiscal, which can clip the average to 9.9-10.4 km/day

Execution trimmed due to pending appointed dates for fiscal 2019

CRISIL Research has lowered its execution forecast in National Highways Authority of India (NHAI) projects for fiscal 2019 to 3,600 3,800 km from earlier anticipated 4,300 km. We estimate around 800 km of execution is at risk this fiscal because many hybrid annuity model (HAM) projects are still awaiting appointed dates seven months after they were awarded.

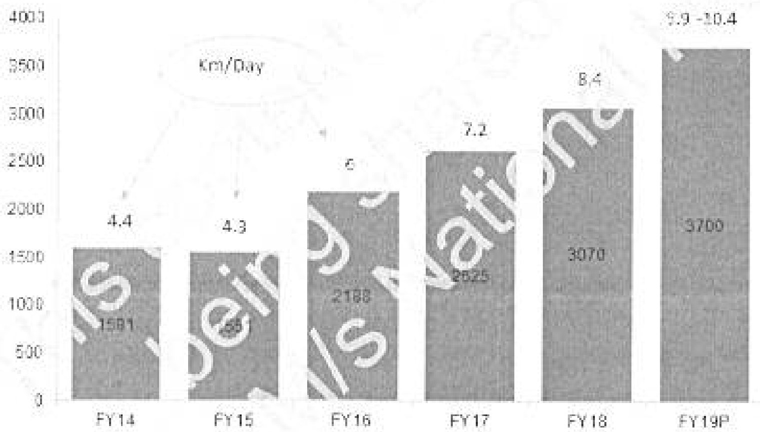
Appointed date is the *de facto* starting date of a project, when the NHAI hands over its contract letter to a developer or concessionaire.

CRISIL Research analysed 40 HAM projects amounting to 1,913 km (over 55% of total HAM awarding that year), awarded by NHAI in fiscal 2018. In all, 3,400 km of HAM projects were awarded last fiscal. Our analysis indicates many have achieved financial closure, but most of them are still awaiting appointed dates on account of delays in land acquisition or regulatory clearances.

Our interactions with stakeholders indicate land acquisition for most of the projects awarded is in the advanced stages, but lenders would begin disbursements only after the mandatory 80% land is in at least the 3G stage. Some projects could receive their appointed dates next month, while some others are yet to achieve financial closure.

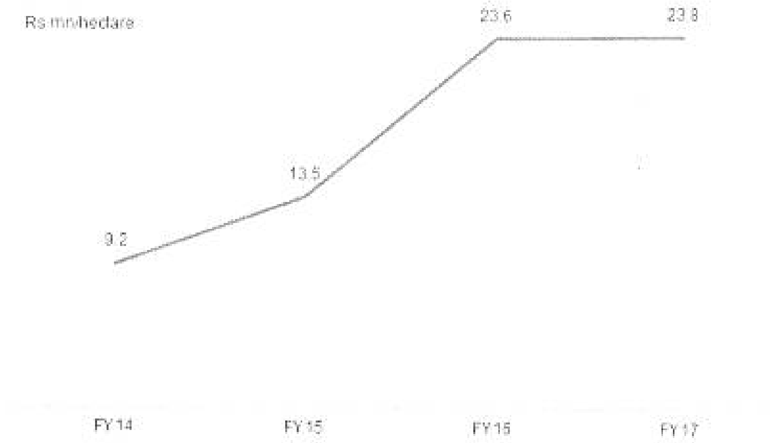
The situation in projects awarded under the engineering, procurement, construction (EPC) model is better than HAM. Typically, land acquisition is higher in EPC than HAM because the NHAI gets additional 150 days buffer on account of time taken by developers for financial closure. A sample of EPC projects awarded last fiscal shows ~54% have started execution.

Execution of NHAI projects



Source: NHAI, CRISIL Research

Cost of land acquisitions by NHAI



Source: NHAI

In the build-operate-transfer (BOT) era, execution began even if the land acquired was less. But this became a key risk and led to big decline in construction activity between fiscals 2012 and 2014.

While execution could decelerate this fiscal, the cautious approach to HAM would benefit in the long term by reducing risks.

Then there have been concerns regarding the balance 20% land to be provided within 180 days of the appointed date. Some projects in the advanced stages of execution are yet to receive the balance right of way, potentially affecting execution. For instance, one large road project, which received the appointed date on February 9, 2017, could execute only 27% by July 2018 against a milestone of 49% because of delays in the shifting of various utilities in the vicinity.

In case 100% land is not provided on time, road developers have two options:

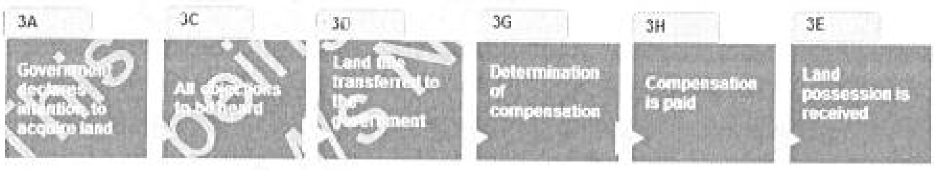
- Await right of way from NHAI and execute projects once received
- De-scope part of the project for which land is not available and adjust the project cost on a pro-rata basis

But the outcome will depend on individual stretches and is finalised based on negotiations with the NHAI.

Typically, NHAI pays annuity for a road stretch based on toll collections. However, in some cases, incomplete construction would mean no toll can be collected.

In both cases, the NHAI will have to pay annuity to the developers, which would put pressure on its financial position. In the past couple of years, the regulator has increasingly depended on market borrowings.

Stages in land acquisition



Source: NHAI, CRISIL Research

Delays, lack of financial closures could be risks to execution

Out of the 1,913 km of HAM projects considered for this analysis, around 390 km are pending financial closure. Of this, around 180 km projects have gone past the 5-month window available for financial closure.

Caution on lending seems to be the main reason for delays in financial closures. Currently, 11 public sector banks, accounting for 18-20% of total banking credit, have been put under the Reserve Bank of Indias Prompt Corrective Action, which prohibits them from lending to risky segments, including under-construction road projects.

Additionally, the short-term liquidity crisis has heightened risk perception towards NBFCs, resulting in an increased cost of funds for them.

Data show financial closures are being achieved at an 80:20 debt to equity ratio, resulting in an equity share of 12% of the total project cost for a developer. And the EPC margin is 10-12%. Given the low equity share, lenders have turned cautious. As an offshoot, this has meant higher equity requirement for HAM developers.

Delays in appointed date to snip execution to 9.9-10.4 km per day

Based on the current status of appointed dates in HAM and EPC projects awarded by the NHAI recently, we believe execution could reach 9.9 to 10.4 km per day this fiscal. This would be lower than the 11.8 km per day estimated, but better than last fiscals 8.4 km per day.

Some banks continue to have apprehensions about HAM. The number of banks interested in lending has halved compared with the times of BOT projects.

The HAM model was created to incentivise bankers by lowering overall project risk so that they could lend more to public-private partnership projects. It includes favourable clauses such as guaranteed partial payment from the NHAI even after a default by concessionaire and the subsequent termination of agreement.

24.0 Impact analysis: Union Budget 2019-20

The investment of Rs 100 lakh crore for infrastructure over the next five years was announced in the speech, implying Rs 20 lakh crore of spending per year. The central government allocation to infrastructure is Rs 4.7 lakh crore for fiscal 2020, including IEBR. Further, continuation of state government allocations of fiscal 2019 in fiscal 2020 would facilitate another Rs 3.5 lakh crore. This would imply a 60% private participation, which may be a key monitorable, considering the limited number of private players and the low risk-appetite of banks, which are the largest lenders. The increase in road and infrastructure cess by Re 1 per litre should aid higher budgetary allocations for railways. Cess allocation for roads has declined.

The overall allocation for the roads sector has increased for fiscal 2020. However, the budgetary support to the National Highways Authority of India (NHAI) has fallen. The IEBR limit for NHAI has been increased to Rs 75,000 crore from Rs 62,000 crore, leading to an increase in borrowings. The NHAIs borrowing has increased significantly at a five-year CAGR of 46% to Rs 1.6 lakh crore in fiscal 2019, due to significant increase in land prices (four-year CAGR at 36% to Rs 2.7 crore per hectare) as well as higher share of engineering, procurement, construction and hybrid annuity model projects in the past few fiscals. Awarding has declined sharply to 2,200 km in fiscal 2019 from 7,400 km in fiscal 2018, amid land-acquisition worries. The risk would remain in fiscal 2020 as well

The budget allocates Rs 80,250 crore for rural-roads construction of 1,25,000 km under PMGSY over the next five years . However, this would be significantly lower compared with 2,18,000 km constructed between fiscals 2015 and 2019

Snapshot of infra investments

Figures in Rs crore	Budget 2018-19			Revised 2018-19			Budget 2019-20			Growth in outlay	
	Budget	IEBR	Total	Budget	IEBR	Total	Budget	IEBR	Total	vs FY19 RE	vs FY19 BE
Ministry of Railways	53,060	93,440	1,46,500	53,060	85,798	1,38,858	65,837	94,071	1,59,908	15%	9%
Ministry of Road Transport and Highways	59,440	62,000	1,21,440	68,564	62,000	1,30,564	72,059	75,000	1,47,059	13%	21%
National Highway Authority of India	29,663			37,021			36,691			-1%	24%
Ministry of Power	2,213	53,469	55,680	2,076	73,189	75,265	4,400	40,407	44,807	-40%	-20%
Ministry of Housing and Urban Affairs	16,415	16,251	32,666	17,010	19,690	36,700	19,544	19,413	38,957	6%	19%
Ministry of Rural Development	5		5	5	14,646	14,651	100	26,170	26,270	79%	NM
Pradhan Mantri Gram Sadak Yojana#	19,000		19,000	15,500		15,500	19,000		19,000	23%	0%
Ministry of Civil Aviation	721	4,601	5,322	4,000	4,875	8,875	25	12,566	12,591*	42%	137%
Ministry of New and Renewable Energy	40	10,317	10,357	40	10,835	10,876	45	12,354	12,399	14%	20%
Ministry of Water Resources	708	6,000	6,708	343	8,102	8,445	391	8,313	8,704	3%	30%
Ministry of Shipping	362	4,830	5,191	186	5,423	5,610	267	5,578	5,845	4%	13%
Total	153,962	250,909	402,871	160,784	284,558	445,344	179,668	295,872	475,540	7%	18%

**Total outlay for Ministry of Civil Aviation in FY20 has increased from 5,591 crores in interim Budget 2020 to Rs 12,591 in this budget*

#PMGSY investments have been considered as revenue expenditure in the Ministry of Rural Development allocations; however, the investments include construction of roads

Railway allocation significantly increased from Rs 2.6 lakh crore of capex incurred between fiscals 2011 and 2015 to close to Rs 6.1 lakh crore over fiscals 2016 and 2020. However, it would still miss the Rs 8.5 lakh crore target set for the same period

The outlay for the Ministry of Civil Aviation increased 42% in fiscal 2020 versus the revised estimate of fiscal 2019. This was due to 23% increase (versus the fiscal 2019 revised estimate) in investments by the Airports Authority of India to Rs 5,125 crore and a new investment of Rs 7,000 crore through IEBR towards Air India Asset Holding Ltd a special purpose vehicle formed by the central government to transfer debt worth Rs 29,464 crore from Air India and its subsidiaries

25.0 Impact analysis: Draft Logistics Policy-2019

The draft national logistics policy announced on February 5, 2019, proposes to lower logistics costs as a percentage of gross national product (GDP) by 300-400 basis points to 10% over the next five fiscals by reducing the share of roads in domestic freight transportation and raising share of railways.

The objective seems ambitious given that the current stock of pliable trucks can cater to 60% of total freight available now. Attempts to reduce road freight movement would lead to lowering road freight rates and make the mode more competitive. Moreover, roads may still be preferred for first-mile and last-mile transportation and movement of non-bulk commodities.

On average, the cost of freight transportation by roadways is Rs 2.50-3.00 per tonne-km, while the cost of waterways is barely a third of that. Railways is twice as expensive as waterways. Lowering dependence on roads for freight would make road construction models with traffic risk less attractive, thereby exerting pressure on public borrowings.

Lowering share of roads would help reduce average logistics cost

Rs / tkm	Roadways	Railways	Waterways
Average freight rate	2.5-3	1.5-2	0.7-1.2

Source: CRISIL Research

Moreover, raising the share of railways means additional funds to build capacities to meet higher traffic. This at a time when the railways is likely to miss its fiscal 2016-20 capex target. Moreover, if rail and waterways have to garner a cumulative share of ~70% of freight movement, both modes, which currently have ~90% dependence on bulk cargo, need to attract non-bulk cargo.

Goals for the next five years

- Lower logistics cost as a percentage of GDP from 13-14% to 10%
- Align the modal mix, which is currently 60% for roads, 31% for railways, and 9% for waterways, with international benchmarks of 25-30%, 50-55%, and 20-25%, respectively
- Reduce dwell time for interstate cargo movement by roads
- Cut wastage incurred from farm to wholesale markets to <5% from 18-20% (for fruits & vegetables) now
- Create a national logistics e-marketplace
- Improve Indias Logistics Performance Index ranking to 25-30 from the current 44

CRISIL Research view

Negative for the roads (especially toll operators), including for existing and upcoming projects

The planned 2500-3000 basis points reduction in the share of road freight traffic to 30-35% appears to be ambitious. However, if achieved, it can have a material impact on the roads sector:

Existing projects: It could lead to a sharp fall in traffic in the concession period for projects having long-term traffic risks such as toll-operate-transfer (TOT) and build-operate-transfer (BOT) assets. This includes projects under investment infrastructure trusts. Typically, the last phase of a concession period tends to be highly profitable, as a large portion of debt is retired by then.

Upcoming projects: A fall in the share of road freight traffic would make BOT-toll projects unfeasible, forcing the National Highways Authority of India (NHAI) to award a higher share of engineering, procurement and construction (EPC) or annuity-based projects. This would lead to increased dependence on public funding, thus constraining overall investment and reducing the share of private investments in the sector.

Positive for railways but infusion of funds will be key monitorable

The planned increase in the share of railway freight traffic from 31% to 50-55% would have a positive impact on the sector. However, railways would need funds to invest in capacities to meet this traffic, which is a monitorable. This is especially since the Railways is likely to miss the Rs 8.5 lakh crore capex target over fiscals 2016 to 2020, as the overall capex during this period is projected close to Rs 6.5 lakh crore.

To increase rails share by ~2000 basis points, it would need railways to procure 148,000 wagons over the next 5 years (after factoring in scrapping) and keeping wagon utilisation level stable. Assuming the cost of a wagon at Rs 23 lakh, the investment needed would be Rs 34,000 crore over the next five years.

Developing connectivity key to increasing the share of waterways

As per the draft national logistics policy, the current share waterways (including coastal and inland waterways) of the total freight movement is 9%. At present, freight movement by inland waterways is largely contributed by the freight movement over National Waterways I (Ganga) and Maharashtra waterways. The government has already undertaken steps like setting up of three multi-modal inland waterway terminals at Varanasi to link waterways with other transport modes.

First-mile and last-mile port connectivity would be crucial to implement the planned increase in the share of waterways freight traffic from 9% to 25-30%. The targeted Rs 8.8 lakh crore investment towards Sagarmala by Fiscal 2035, which includes about 500 port connectivity and modernisation projects would be crucial to implement the planned increase in the share of waterways freight traffic.

Currently, ~80% of the freight moving in railways and waterways is bulk freight. Bulk freight constitutes 50% of total freight movement. If railways and waterways together need to contribute ~70% of total freight movement, the two modes need to attract non-bulk cargo movement. Unless containerisation is promoted, attracting non-bulk cargo would be challenging.

Reducing dwell time for interstate cargo movement by roads an imperative

With increasing emphasis on e-tolling, electronic document flow, rationalisation of checkpoints, and digital verification at all checkpoints, travel time for road interstate cargo movement is expected to reduce further. This would improve the competitiveness of road freight movement. Removal of border check-posts after implementation of Goods and Services Taxes has increased average daily run of trucks by 8-10%.

Lowering losses due to agriculture waste means more investments in storage and transportation

At present, about 18% of fruits and 20% of vegetables harvested are lost due to lack of temperature-controlled storage and reefer vehicles across the supply chain. For example, the post-harvest loss in apples is 18-25%. Lack of storage contributes 9% to this, transportation 5%, and processing and handling the rest.

Create a national logistics e-marketplace to facilitate co-ordination among stakeholders

The proposed national logistics e-marketplace targets improving speed and cost-efficiency. It plans to achieve this through the integration of fragmented logistics markets across ministries, government agencies, partnering government agencies, export promotion councils, and service providers under a single portal. This is expected to improve visibility and co-ordination among various stakeholders in the value chain, enabling seamless end-to-end logistics.

Integrated national logistics action plan would involve logistics verticals of different ministries under one wing. The draft national logistics policy has outlined the objectives to be achieved over the next five years, however, clarity is awaited as to how this it has to be achieved.

26.0 Impact analysis: Interim Budget 2019-20

Infrastructure: May need additional funds

FY19 revised capital outlay (budgetary allocation + internal and extra budgetary resources(IEBR)) for infrastructure has been 11% higher vs FY19 budget estimate (BE) with highest achievement ratios in civil aviation and power segments.

Total capital outlay for infrastructure stood at Rs 4.7 trillion in FY20, a meagre 5% increase v/s FY19 revised estimate (RE) and 16% higher than FY19 BE. Among all infrastructure segments, railways and roads are the biggest beneficiaries for FY20, constituting two-thirds of the investment outlay. However, we believe infrastructure sector may need additional funds. For instance, railways would miss the Rs 8.5 trillion capex target over FY16-20 as the overall capex during this period is projected close to Rs 6.5 trillion. Budgetary support to NHAI has fallen marginally, though increase in IEBR supports outlay growth in FY20 v/s FY19 RE. We expect NHAI execution to grow by 15% to ~4,300 kms in FY20 but marginal fall in budgetary support would imply that it may increase dependence on borrowings.

A sharp decline in FY20 outlay (vs FY19 revised estimate) was witnessed for civil aviation and power segments. Civil aviation outlay dropped sharply by 37% in FY20 v/s FY19 RE primarily on account of removal of budgetary support extended to turnaround of Air India. Power segment outlay declined by 39% in FY20 v/s FY19RE largely due to lower IEBR in Power Grid Corporation of India. Rural development outlay stood at Rs 262 billion, 79% higher than FY19 RE largely on account of increased IEBR in NABARD.

Budgetary allocation for infra sectors

(Figures in Rs crore)	Budget 2018-19			Revised 2018-19			Budget 2019-20			Growth in outlay	
	Budget Support	I.E.B.R	Total	Budget Support	I.E.B.R	Total	Budget Support	I.E.B.R	Total	vs FY19 RE	vs FY19 BE
Ministry of Road Transport and Highways	59,440	62,000	121,440	68,564	62,000	130,564	72,025	75,000	147,025	13%	21%
Ministry of Urban Development	16,415	16,252	32,668	17,010	19,690	36,700	19,544	19,413	38,957	6%	19%
Ministry of Civil Aviation	721	4,601	5,322	4,000	4,875	8,875	25	5,666	5,691	-37%	5%
Ministry of Power	2,211	53,469	55,680	2,076	73,189	75,265	2,582	43,045	45,627	-39%	-18%
Ministry of Railways	53,060	93,440	146,500	53,060	85,790	138,850	64,587	94,071	158,658	14%	8%
Ministry of Shipping	321	4,830	5,151	186	5,423	5,610	267	5,578	5,844	4%	13%
Ministry of Rural Development	5	-	5	5	14,646	14,651	100	26,170	26,270	79%	NM
Ministry of Water Resources	708	6,000	6,708	343	8,102	8,445	399	6,742	7,141	-15%	6%
Ministry of New and Renewable Energy	40	10,317	10,357	40	10,836	10,876	45	12,354	12,399	14%	20%
Pradhan Mantri Gram Sadak Yojana*	19,000		19,000	15,500		15,500	19,000		19,000	23%	0%
Total	151963	250309	402872	160785	284556	445341	178574	287939	466512	5%	16%

Note: PMGSY investments have been considered as revenue expenditure in the Ministry of Rural Development allocations; however, the investments include construction of roads

Source: Budget

27.0 Impact analysis: Union Budget 2018-19

Roads: No major booster announced

Budget announcement

- Total capital expenditure in fiscal 2019 higher than fiscal 2018 RE by 10.25% and BE by 7%
- Cess on petrol and diesel increased, to cover other infrastructure segments too
- Capital outlay for NHAI increased by modest 10% over fiscal 2018 BE and RE
- PMGSY allocation unmoved at fiscal 18 BE level

Our view

- With only 10% increase in NHAIs capital outlay and a stagnant private investment scenario, awarding and execution momentum in NHAI projects will show limited improvement
- Road cess has been increased from Rs 6/L to Rs 8/L, Further, there is increase its scope to cover the entire infrastructure industry
- Fiscal 2018 saw only one bundle of 9 projects being floated under TOT; comparatively larger number of projects can be expected to be awarded in fiscal 2019
- NHAI might raise funds from its operational assets via InvITs, depending on the bidding for the first few TOT bundles

28.0 Overview: Road network in India

Roads network in India

Extensive road network

India has the second largest road network in the world, aggregating 6.2 million km. Roads are the most common mode of transportation and account for about 86% of passenger traffic and close to 67% of freight traffic.

In India, national highways, with a length of close to 136,440 km, constitute a negligible percentage of the road network but carry about 40% of the total road traffic. On the other hand, state roads and major district roads are the secondary system of roads; they carry another 60% of traffic and account for nearly the entire road length.

The road network in India can be divided into the following categories:

Road network in India as in fiscal 2021

Road network	Length (km)	Percentage of total		Connectivity to
		Length	Traffic	
National highway	136,440	0	40	Union capital, state capitals, major ports, foreign highways
State highway	176,818	0	60	Major centres within the states, national highways
Other roads	5,902,539	100		Main roads, rural roads, production centres, markets
Total	6,215,797	100.0	100.0	

Source: MoRTH Annual report 2020-2021, CRISIL Research

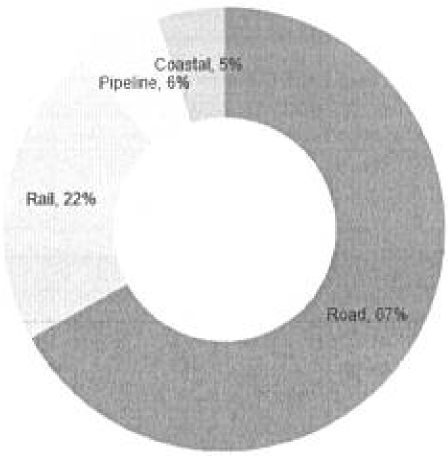
State-wise length of National Highways in India as in fiscal 2021

Source: MoRTH, CRISIL Research

Roads account for 67% of total freight traffic

Road transport is the most frequently used mode of transport for both freight and passengers. For fiscal 2021, it is estimated that ~67% of total freight (in terms of BTKM) will be carried by roads when compared with railways. In 2009-10, roads accounted for approximately 58% of the total freight traffic.

Proportion of freight traffic across modes of transport - Fiscal 2021

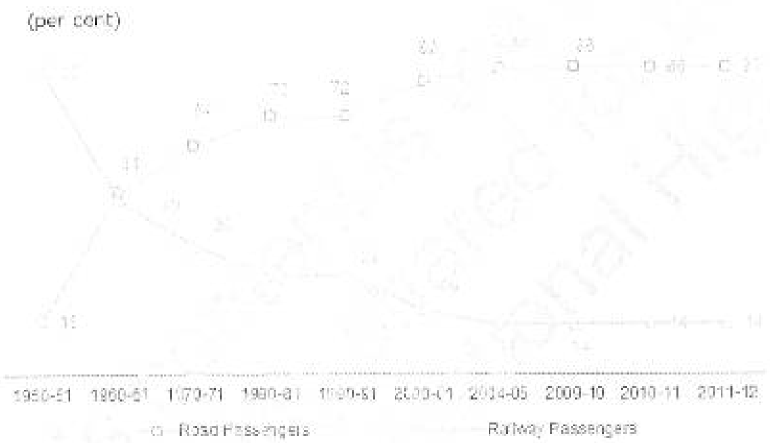


Source: CRISIL Research

Note: For details, kindly refer to CRISIL Research's coverage on Domestic Freight Transportation Services industry

Higher passenger traffic on roads than railways

Passenger traffic - Roads v/s railways



Note: FY12 is the latest available data
Source: Working Group Report on Road Transport for Eleventh Five-Year Plan, Industry

Since 1950-51, passenger traffic for railways has come down from 85% to 14% while passenger traffic for roads has consistently grown from 15% in 1950 -51 to 86% in 2011-12.

Preference for road transport for freight movement is primarily on account of large capacity expansions carried out by fleet operators, flexibility and door-to-door movement. Further, there are many players in road transport while Indian Railways is the only player in railways.

Upgradation of highways from two lane to four lanes

There has been an upgradation in terms of lanes in national highways, which has gone from being one lane and two lanes to four lanes. Single lane roads decreased from 32% in 2014-15 to 21% in 2015-16. Two lane roads increased from 47% to 56%, while four lane roads increased from 12% to 25% during the same period.

Lane-wise break up of national highways

Width of carriageway	2011-12		2012-13		2013-14		2014-15		2015-16	
	(km)	(per cent)	(km)	(per cent)	(km)	(per cent)	(km)	(per cent)	(km)	(per cent)
Four/Six/Eight-lane	17,700	24.7	19,128	24.2	18,372	20.1	21,201	21.9	24,705	24.9
Two-lane	38,536	53.7	40,658	51.4	45,399	49.7	45,701	47.1	55,603	56.1
One-lane	15,536	21.6	19,330	24.4	27,516	30.1	31,089	32.0	20,703	20.9
Total	**71,772**	**100.0**	**79,116**	**100.0**	**91,287**	**100.0**	**97,991**	**101.0**	**101,011**	**102.0**

Note: FY16 is the latest available data

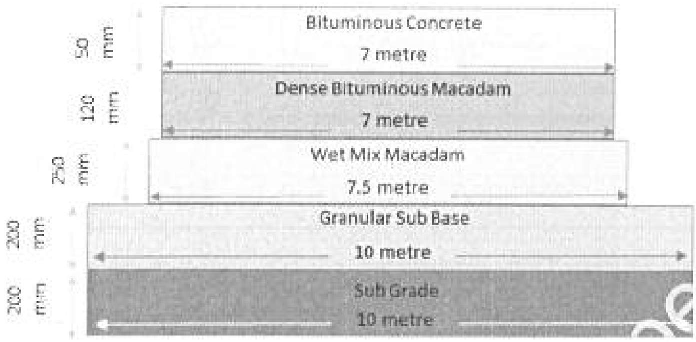
Source: MoRTH

29.0 Road construction Process: Bituminous road

Flexible or bituminous pavement

The bituminous or flexible pavement comprises of five layers after the Earthwork:

1. Sub grade
2. Granular sub-base (GSB)
3. Wet mix macadam (WMM)
4. Dense bituminous macadam (DBM)
5. Bituminous concrete (BC)



Note: Dimensions mentioned are average values for a two lane road, which can vary within a band for different roads

Source: Industry, CRISIL Research

Cost break-up across layers

Components	% of total cost
Bituminous Concrete	12%
Dense Bituminous Macadam	24%
Wet Mix Macadam	13%
Granular Sub Base	12%
Sub Grade	5%
Earthwork , Shoulders & coats	33%

Note: Cost is for two-lane road without structures

Source: CRISIL Research

Earthwork

Earthwork involves removal of vegetation, excavation and disposal of topsoil, uneven stones and rocks. Excavation is done in a manner that the alignment (width and shape) of the road conforms to the planned design. It is carried out with the help of equipments such as Excavators, Tractors, Cranes etc. The depth of this layer may vary from 250 mm to 500 mm.

Sub grade

It forms the bottom layer of a flexible pavement and involves leveling of the ground surface. Materials used in leveling the ground surface are aggregates (soil, rocks and clays), which constitute over 40% of the total cost involved in constructing this road layer. The cost of aggregates is also significantly influenced by the lead distance from the quarry to the project site. In case of elevated roads, compaction of the material also needs to be carried out. Subgrade accounts for about 5% of the total cost incurred in constructing the road. The cost of this layer varies from Rs 200 to 250 per cubic metre. The thickness of this layer is highest at around 500 mm with a width of around 10 m for a two lane road.

Granular sub-base

The GSB layer is laid after the subgrade. It consists of laying and compacting aggregates such as stones, soil, sand, small size metals, etc. This layer is built to provide strength to the road and bear the load of the traffic. The thickness of this layer may vary between 100mm - 250mm depending upon the level of traffic for which the road is designed. The cost of this layer varies from Rs 1,000-1,750 per cubic metre. Out of the total cost involved in this layer, around 90% constitutes aggregate cost, around 3% labour cost and the rest 7% towards machinery. Cost of constructing the GSB layer is 12% of the total cost of constructing a bituminous road.

The cost and composition of the sub grade and GSB layers is similar in both bitumen and cement pavement roads.

Wet mix macadam

WMM layer is laid over the GSB layer. Within this layer, various materials such as stone aggregates, moorums, dust and sand are bound using some water and bitumen. The thickness of this layer varies from 200 mm-300 mm, and costs Rs 1,500-2,000 per cubic metre. The main cost component in this layer is aggregate cost, contributing more than three fourth of the total cost of the layer. Other costs include labour and miscellaneous costs. Cost of constructing this layer is 13% of the total cost of constructing a bituminous road.

Dense Bituminous Macadam

DBM comprises coarse aggregates and bitumen. Presence of bitumen in layers reduces the permeability of roads. It also provides the road some flexibility when subjected to weight. The purpose of this layer is to provide strength to the road and provide coarse surface which can hold the fine aggregates laid on the top layer. The thickness (depth) of the layer varies between 50mm - 200mm but is always greater than or equal to the top layer i.e. Bituminous Concrete.

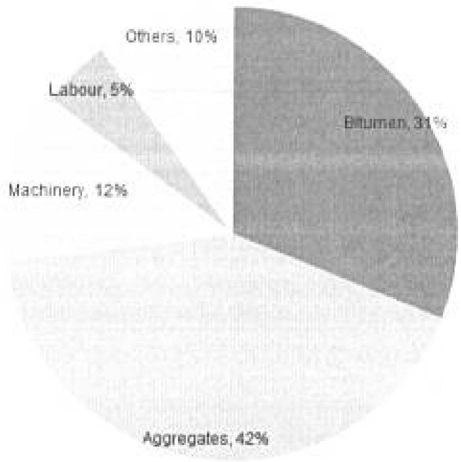
Cost of this layer is around Rs 8,000 per cubic metre. The major component of the cost of this layer is bitumen (68%); followed by aggregates (14%), and others such as machinery, labor, cement and miscellaneous.

Bituminous Concrete

BC is the top-most layer in a flexible pavement. It consists of fine aggregates and bitumen. The thickness of this layer also, varies from 50 to 200 mm, depending upon the design of the pavement. This layer has higher proportion of bitumen as compared to DBM. High cost of bitumen as compared with other inputs makes BC as the most expensive layer of a flexible pavement.

The major component of the cost of this layer is bitumen (61%); followed by aggregates (19%), and others such as machinery, labor, cement and miscellaneous.

Cost break up of bitumen pavement



Source: Industry, CRISIL Research

Cement Pavement is costlier than Bitumen pavement

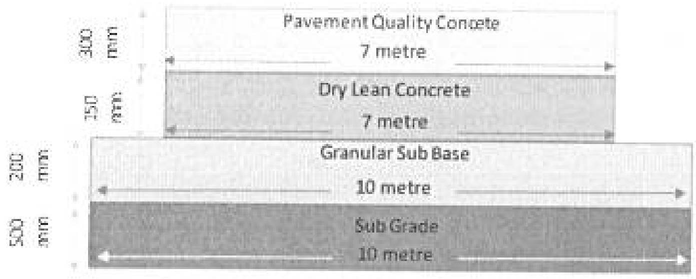
Cost of cement pavement is around 20-25% higher than the cost of bituminous pavement for a two-lane greenfield road (with earthwork) with earthen shoulders.

30.0 Road construction Process: Cement road

Rigid or cement pavement

The rigid or cement pavement is made up of four layers after Earthwork:

1. Sub grade
2. Granular Sub base (GSB)
3. Dry lean concrete (DLC)
4. Pavement quality concrete (PQC)



Note: Dimensions mentioned are average values for a two lane road, which can vary within a band for different roads.

Source: Industry, CRISIL Research

Cost break- up across layers

Components	% of total cost
Pavement Quality Concrete	46%
Dry Lean Concrete	13%
Granular Sub Base	10%
Sub Grade	4%
Earthwork and Shoulders	27%

Note: Cost is for a two-lane road without structures

Source: Industry, CRISIL Research

Earthwork

Earthwork involves removal of vegetation, excavation and disposal of topsoil, uneven stones and rocks. Excavation is done in a manner that the alignment (width and shape) of the road conforms to the planned design. It is carried out with the help of equipments such as Excavators, Tractors, Cranes etc. The depth of this layer may vary from 250 mm to 500 mm.

Sub grade

It forms the bottom layer of a rigid pavement. Materials used in leveling the ground surface are aggregates (soil, rocks and clays), which constitute over 40% of the total cost involved in constructing this road layer. In case of elevated roads, compaction of the material also needs to be carried out. Subgrade accounts for about 4% of the total cost incurred in constructing all the layers. The cost of this layer varies from Rs 200 to 250 per cubic metre. The thickness of this layer is highest at around 500 mm with a width of 10 m.

Granular sub-base

The GSB layer is laid after the subgrade. It consists of laying and compacting aggregates such as stones, soil, sand, small size metals, etc. This layer is built to provide strength to the road and bear the load of the traffic. The thickness of this layer may vary between 100mm - 250mm depending upon the level of traffic for which the road is designed. The cost of this layer varies from Rs 1,000-1,750 per cubic metre. Out of the total cost involved in this layer, 90% constitutes aggregate cost, 3% labour cost and 7% towards machinery. Cost of constructing this layer is 10% of the total cost of construction of a cement road.

The cost and composition of the sub grade and GSB layers is similar in both, bitumen and cement pavement roads.

Dry lean concrete

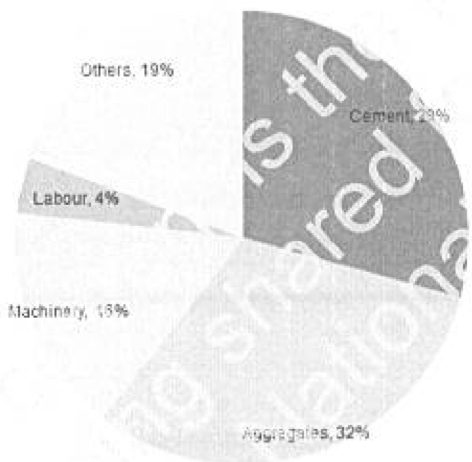
This layer consists of coarse aggregates, fine aggregates, water and cement. The proportion of the ingredients depends upon the design mix used, based on the specifications and design of the stretch. The thickness of the layer varies between 150-300 mm depending on the topography. Generally, a thick polyethene sheet is spread over this layer to avoid the moisture loss. Cost of constructing this layer is 13% of the total cost of construction of a cement road.

The cost of this layer varies from Rs 3,000 to Rs 6,000 per cubic metre. Out of the total cost involved in this layer, cement contributes around 33%. The remaining cost is shared by aggregates (28%), machinery, labour and miscellaneous.

Pavement Quality Concrete

DLC layer is covered by the PQC layer, which forms the top-most layer of a rigid pavement. The thickness of this layer varies from 150mm - 300 mm. This layer is generally thicker than DLC. Cost of developing this layer varies from Rs 4,600 to Rs 7,600 per cubic metre. Cement cost accounts for about 40% of the total cost of a PQC layer followed by labour, aggregates, machinery and miscellaneous. High proportion of cement in the PQC layer makes it costlier than the other layers such as DLC and GSB. As a result, the PQC layer contributes around 46% to the total cost of a rigid pavement.

Cost components of Rigid pavement



Source: Industry, CRISIL Research

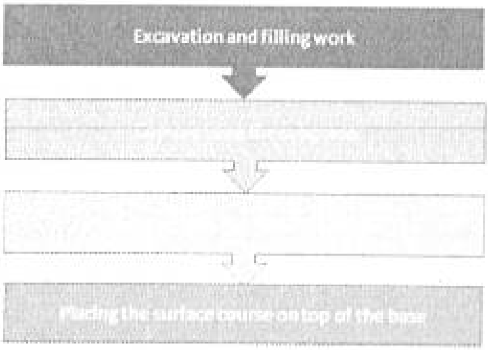
Cement pavement is costlier than Bitumen pavement

Cost of cement pavement is around 20-25% higher than the cost of bituminous pavement for two-lane greenfield road (with earthwork) with earthen shoulders.

31.0 Road construction Process: Construction equipments

Road construction process

Stages in road construction



Source: CRISIL Research

Excavation and filling work

Geographic obstacles need to be cleared to create a continuous right-of-way and levelled surface to ensure better traffic and pedestrian movement. After this, the process of removing the earth and rock commences by digging or blasting. This stage also involves construction of embankments, bridges, and tunnels and removal of vegetation. The depth of this layer may vary from 250 mm to 500 mm. Motor graders, excavators, scrapers etc are used for this process.

Sub grade

It forms the bottom layer of a flexible or rigid pavement and involves levelling of the ground surface by compacting the native soil. Weak soil may be stabilised with additives such as Portland cement and quicklime, or dug out and replaced with imported soil. Soil is stabilised using mobile plants which produce the homogenous mixture. The thickness of this layer is highest at around 500 mm with a width of 10 m.

Sub base

This layer is laid on sub grade to provide strength to the road as it bears the load of the traffic. The process involves laying and compacting aggregates such as stones, soil, sand, small size metals, etc with the help of heavy equipment such as dumpers, road rollers, etc. The thickness of this layer may vary from 100 mm to 250 mm depending upon the level of traffic expected on the stretch.

Base course

After laying the sub base, a base of even-sized gravel is laid, followed by a layer of crushed stone over it. Constituents of this layer and subsequent layers are mixed with cement, limestone, bitumen, tar, etc depending upon the type of road to be constructed. The mix is prepared by mobile batching mixers, silos, etc. This layer provides additional load distribution and contributes to drainage and frost resistance.

Cement pavement (rigid) - It has a layer of mixture consisting of coarse aggregates, fine aggregates, water and cement as a base course. This layer is called ***Dry Lean Concrete (DLC)***. Its thickness varies from 150 mm to 300 mm depending on the topography.

Bitumen pavement (flexible) - It has two layers of base course:

- ***Wet mix macadam (WMM)*** - It consists of stone aggregates, moorums, dust and sand, bound using some water and bitumen. The thickness of this layer varies from 200 mm to 300 mm.
- ***Dense bituminous macadam (DBM)*** - It consists of coarse aggregates and bitumen. More bitumen is used in this layer than in the WMM layer to give it a smooth finish. Its thickness varies from 50 mm to 200 mm.

Surface course

It refers to the topmost layer of the road, which strengthens the pavement structure by spreading out the vehicle load and also protects the pavement from wear and tear. This layer is made up of bound fine aggregates which ensures that the road has a smooth surface.

Cement pavement (rigid) has a surface layer called ***Pavement Quality Concrete (PQC)***, laid over the DLC layer. It consists of fine aggregates mixed with greater proportion of cement than DLC. Its thickness can vary from 150 mm to 300 mm.

Bitumen pavement (flexible) has a surface layer called Bituminous Concrete (BC), laid over DBM and WMM. It consists of fine aggregates mixed with a greater proportion of bitumen than in the DBM and WMM layers. The thickness of this layer can vary from 50 mm to 200 mm.

Construction equipment used in roads

A contractor has the option of meeting his equipment requirements either by buying them or hiring the equipments on a lease or rental basis. Smaller players, on account of lack of funds, often have to meet their requirements by either buying second-hand equipment or by hiring equipment on rental basis from equipment banks.

In this section, we have put together various types of road equipments, along with their main functions that are used in roads construction in India.

Soil stabilisation plants

These plants are used for producing a homogenous mixture of sand, cement and water with aggregates. This mixture is used for preparing sub grade and sub base layers of a road. These plants can be both large and small with capacity ranging from 60 TPH (tonne per hour) to 200 TPH. Generally, these plants are assembled at the construction site and disintegrated when they need to be moved.

Batching plants

These are the mobile plants which are used to produce the base course and surface course for the roads. Broadly, these plants are of two types:

Concrete batching plants: These plants are used to produce a homogeneous mix of aggregates, sand, cement, water and other additives. They are suitable for preparing cement-based macadam and thus, are used while construction of cement roads.

Asphalt mix plants: These plants are used to prepare a bitumen-based homogenous mix of aggregates, sand and fillers such as stone dust. Since these are bitumen-based plants, they have a heating capacity of upto 200 degree Celsius which helps to prepare a good mix.

Crawlers, excavators and tractors

These are mainly used in earth moving and excavation. An excavator is generally used for digging trenches, holes, foundations. It is also used at times for carrying out demolitions and at other times for general grading/landscaping. Excavators are usually employed together with loaders and bulldozers. Excavators typically come in different sizes to meet the requirements of the contractor. The crawler excavator and tractors have common uses. However, excavators are generally used in difficult terrain where a substantial earth-moving process is involved, whereas tractors are more likely to be used in flat terrain regions.

Loaders

Loaders are mainly used for trenching, ditch cleaning, uploading materials into trucks, clearing rubble, and digging. A loader (front loaders), though used for digging, cannot replace the excavating machines as it cannot dig below the level of its wheels. Therefore, loaders are not classified as earthmoving machinery. They can be easily transported as they are tyre-mounted, unlike tracked excavators, which have to be dissembled and reassembled. There is one distinct variant of the loaders family, called backhoe loader. Backhoe loaders can be used for activities such as digging holes/excavating, breaking asphalt, and paving roads.

Tippers / dumpers

These are new generation trucks that carry materials, sand, aggregates, etc and dump them at the desired location. Tippers and dumpers perform the same functions. Usually dumpers have a larger carrying capacity (35-50 tonnes) than tippers that carry weights between 5 to 10 tonnes.

Pavers

A paver is an engineering vehicle used to prepare and lay asphalt on roadways. It heats up the aggregate asphalt mix to 300 degree Celsius, churns and lays it evenly on the road. A roller may or may not be subsequently used to press the hot asphalt mix, resulting in a smooth, even surface.

Road roller

These equipment are used to compact dirt, gravel, concrete, and asphalt in construction of roads and foundations. Road rollers are also used in landfill compaction. The most commonly used rollers are pneumatic rollers, single drum rollers and tandem rollers.

Motor graders

It is a motor-operated grader which has a long inclined vertically adjustable steel blade used to throw earth and other surface material from the side to the centre of a road. Alternatively, they are used to spread the surface material and gravel to create a base for the road. Graders are typically used in road construction to prepare the base course to create a wide flat surface for the asphalt to be placed on. Motor graders can have upto three blades each in the front, rear and middle of the machine. The first blade removes the crowns in the road, the middle blade mixes large pieces of gravel with fines, and the rear blade lays the material so prepared evenly.

Scrapers

It is a kind of grader where one blade has extended reach. They are used in cut-and-fill sites where earth (material) is to be excavated from a different location, crushed and carried to a destination over a short haul. Alternatively, a heavy truck can be used to carry the earth excavated by scrapers. Any other debris left behind by the scraper is then taken away by a front loader.

Lifting Machinery

These cranes are widely used as they can move easily on roads. These equipments are used to lift heavy objects and materials on construction sites. They are available in varying types depending on the height of lifting and the object to be lifted.

Tractor Crane

They are used for lifting and carrying heavy materials on the construction site and they can move about freely because of their compact structure.

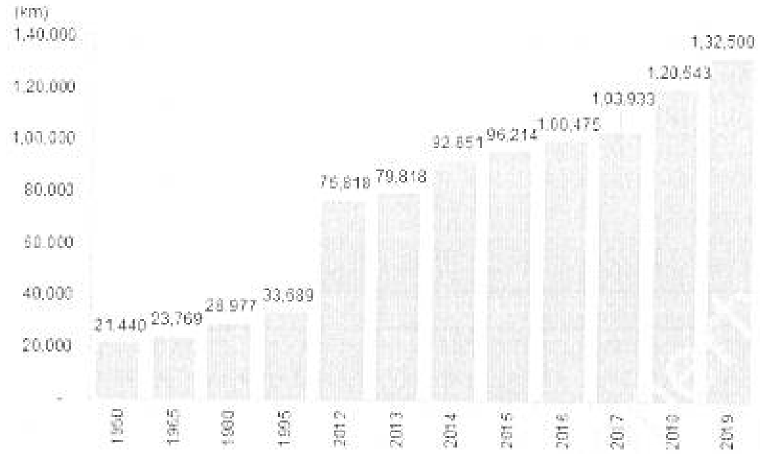
Truck-Mounted Crane

These cranes are mounted on a rubber tire truck to provide better mobility. Outriggers that extend vertically or horizontally are used to level and stabilize the crane during hoisting.These cranes are widely used as they can move easily on the roads.

32.0 Overview: National highways

As of fiscal 2019, National highways constitute around 2% of the country's road network, but carry about 40% of the total road traffic. The National Highways Authority of India (NHAI), the nodal agency under the Ministry of Road Transport & Highways (MoRTH), is responsible for building, maintaining and upgrading NHs. To develop the NH network, the NHAI launched the National Highways Development Project (NHDP) in December 2000, which is not superceded by the Bharatmala Pariyojana where awarding began from fiscal 2018.

National-highway network



Source: Ministry of Road Transport & Highways

National Highways Development Project

The NHDP encompasses building, upgradation, rehabilitation and broadening of existing NHs. The project is executed by the NHAI, in coordination with the public works departments of various states. The NHAI also collaborates with the Border Roads Organisation for the development of certain stretches. The NHDP is being implemented in seven phases.

NHDP projects are awarded to private players either on EPC (cash) or build-operate-transfer (BOT) basis, and now on the newly introduced hybrid annuity model (HAM). NHDP cash contracts are mainly financed through budgetary allocations from the Central Road Fund, negative grants/premium received, and toll revenue. Loans and grants are also received from the World Bank and the Asian Development Bank.

Projects under existing the NHDP phases of 5,000-5,500 km to be awarded completely by fiscal 2021. These residual projects would dominate 50% of investments over the next five years. According to CRISIL estimates, Bharatmala awarding was ~5,500-6,000 km over fiscals 2018 and 2019. Investments under Bharatmala would be slow to pick up and contribute ~30% of total investments. As projects awarded under Bharatmala are 60% EPC and 40% HAM, NHAIs ability to raise funds to execute these projects would be a key monitorable.

Bharatmala Pariyojana

Bharatmala Pariyojana (BMP) is the new umbrella scheme, which supersedes the existing National Highways Development Programme (NHDP). The programme envisages to construct about 65,000 km of highways, under the following categories: National Corridor (North-South, East-West and Golden Quadrilateral), Economic Corridors, Inter corridor roads, Feeder roads, International connectivity, Border roads, Coastal roads, Port connectivity roads and Expressways. This will include existing NHDP programme as well. Some projects awarded in FY18 and YTD FY19 under Bharatmala are actually part of NHDP.

The Government of India had approved Bharatmala Pariyojana Phase-I in October, 2017 with an aggregate length of about 34,800 km (including 10,000 km residual NHDP stretches) at an estimated outlay of Rs. 5,35,000 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. Total of 255 road projects with an aggregate length of about 10,699 km have been approved till October, 2019 under Bharatmala Pariyojana with total Cost of Rs. 2,64,916 crore approximately. Bharatmala Pariyojana Phase-I is targeted for completion by 2021-22.

Components of Bharatmala Pariyojana (Phase -I)

Category	Description	Total Length (Km)	Upgrade Proposed in Phase I (Km)
National Corridor Efficiency Improvement	Lane expansion, De-congestion of existing National corridor	13,100	5,000
Economic Corridors Development	Connecting of economically important production & Consumption centres	26,200	9,000
Inter-corridor and feeder routes development	Inter-connection between economic corridors, first mile & Last mine connectivity	15,500	6,000
Border and International Roads	Connectivity to border areas and boosting trades with neighbouring countries	5,300	2,000
Coastal and port connectivity Roads	Connectivity to coastal areas to enable port-led economic development	4,100	2,000
Expressways	Greenfield expressways	1,900	800
TOTAL		66,100	24,800

Source: NHAI, CRISIL Research

Award of Projects under Bharatmala Pariyojana

Out of the 24,800 km approved under Bharatmala Pariyojana Phase-I, a total of 76 projects of length 4,003 km have been awarded by NHAI, post the approval of Bharatmala Pariyojana in the FY 17-18. Similarly, out of the 10,000 km approved under residual NHDP in Bharatmala Phase-I, a total of 39 projects of length 1,755 km have been awarded post the approval of Bharatmala Pariyojana in FY 17-18.

SR No.	Types of Corridor	No. of Projects	Awarded Length (Km)
1	Economic Corridor	34	1,548
2	Inter Corridor Routes	2	98
3	Feeder routes	3	96
4	National Corridor	23	1,073
5	Border Roads	6	973
6	Port Connectivity Roads	3	90
7	Expressways	5	124
	Bharat Mala Total	76	4,003
	Residual NHDP	39	1,755
	Grand Total	115	5,758

Sourc: NHAI, CRISIL Research

33.0 Overview: State roads

State roads constitute around 20% of the country's total road network, handling about 40% of the total road traffic. State roads comprise state highways (SHs), major district roads (MDRs), other district roads (ODRs) and rural roads - which do not come under the purview of the Pradhan Mantri Gram Sadak Yojana (PMGSY). State roads represent the secondary system of road transportation in the country. They provide linkages with national highways, district headquarters of the state and important towns, tourist centres and minor ports.

Overview

State roads come under the jurisdiction of the respective state governments. However, the Central government may provide financial assistance to state governments through various schemes for the development of the road network.

The responsibility of awarding contracts for road development is entrusted with two state government divisions, namely the public works department (PWD) and road development corporation (RDC). Generally, cash contracts are awarded by the state PWD, while BOT-annuity and BOT-toll contracts are typically awarded by state RDCs.

(Please refer to Data & Statistics section for data on state government capital expenditure on state roads.)

Central assistance

The Central government has set up the Central Road Fund (CRF) to provide financial assistance to state governments for road development and railway safety works within the states.

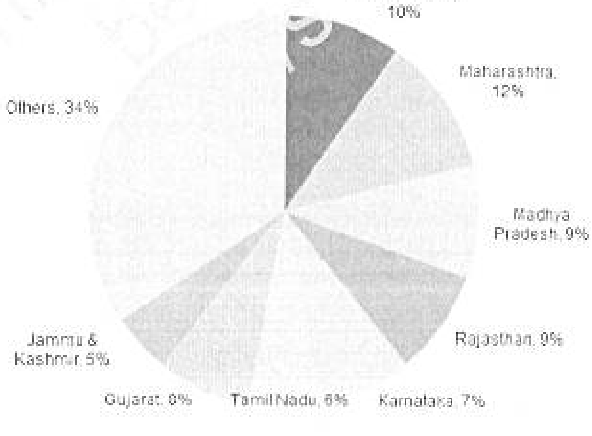
Central Road Fund

The CRF is funded from the cess collected on the sale of petrol and high-speed diesel (HSD). On every litre of petrol and HSD that is sold, a cess of Rs 6 is collected (since 2015-16; previously cess of Rs 2 was collected). The fund provides assistance to states for the development and maintenance of state roads, rural roads, national highways, under- and over-bridges and safety works at unmanned railway crossings. About 11% of the cess collected on HSD and 30% on petrol is allocated towards maintenance of state roads.

Funds allocated for 2014-15, 2015-16 and 2016-17 (revised estimates) were Rs 26.5 billion, Rs. 28.8 billion and Rs 71.8 billion.

About 476 projects, amounting to Rs 98.6 billion, were sanctioned under the scheme in 2017-18, compared with 1093 projects costing Rs 123 billion in 2016-17.

State-wise release of funds under CRF in 2018-19



Source: Lok Sabha questions, CRISIL Research

In Union Budget 2018-19, the road cess was replaced by the road and infrastructure cess. Previously, the road cess used to be split for NH construction, maintenance, railways, Pradhan Mantri Gram Sadak Yojana, etc, based on a fixed formula. So far, there has been no change in the split. However, going forward, the share of cess to the roads sector could reduce given the increase in the overall scope from roads to roads and infrastructure, increasing dependence on borrowings.
Out of the amount collected under CRF for state roads, 10% is reserved for the development of roads under the following schemes:

Inter-State Connectivity (ISC)

Under this scheme, 100% funding (not a loan) is provided by the central government. ISC typically encompasses the development of:

- Inter-state roads
- Roads connecting national highways

Economic Importance (EI)

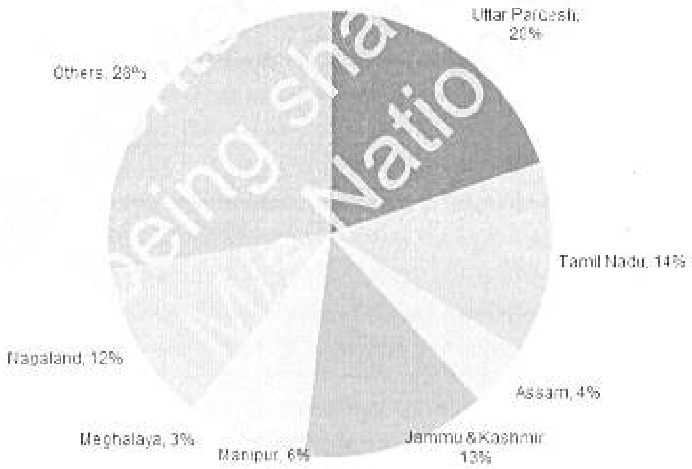
Under this scheme, projects are funded to the extent of 50% by the central government. The state government contributes the rest of the project cost. This scheme is mainly focused on the development of:

- Roads facilitating connectivity to remote industrial and economic areas
- Roads facilitating the development of remote residential areas, such as roads connecting hilly regions to plains

Funds allocated together under ISC and EI in 2014-15, 2015-16 and 2016-17 were Rs 2.39 billion, Rs 3.55 billion and Rs 4.15 billion, respectively. In 2017-18, about 19 projects, amounting to Rs 6.6 billion, were approved under ISC and EI. In 2018-19, about 18 projects, amounting to Rs 4.74 billion, were approved under ISC and EI.

During the year 2018-19 a sum of Rs 500 crore has been earmarked for the state roads under Inter State Connectivity and Economic Importance (ISC&EI) and 34 proposals involving cost of Rs. 447.34 crore have been sanctioned for improvements.

State-wise expenditure under EI and ISC Schemes in 2018-19



Source: Lok Sabha questions, CRISIL Research

34.0 Overview: Rural roads

Rural roads

Pradhan Mantri Gram Sadak Yojana (PMGSY) is a one-time special intervention to provide rural connectivity, by way of a single all-weather road, to the eligible unconnected habitations in the core network with a population of 500 persons and above (Census 2001) in plain areas. The Pradhan Mantri Gram Sadak Yojana (PMGSY) phase 1 was launched in 2000. Under the scheme, the Centre recognised 172,769 habitations as requiring all-weather roads, of which 99% of the eligible and feasible habitations have been connected as of FY21.

Further, the Government launched a new intervention in the scheme namely PMGSY-II in the year 2013-14 for consolidation of total 50,000 km existing Rural Road Network to improve its overall efficiency as a provider of transportation services for people, goods and services. 49,429 kms of rural roads are sanctioned under PMGSY-II as of date, of which, 93% have been completed.

The umbrella scheme involves construction/upgradation of over 800,000 km of rural roads. Since inception to December 2021, 762,937 Km road length has been sanctioned under various interventions/verticals of PMGSY and 6,82,341 Km road length has been completed. The target for fiscal 2021 was 43,856 km, of which 80% has been achieved.

After fiscal 2017, budgetary allocation by the Central government to the scheme has been kept at Rs 190 billion. The actual expenditure has been lower than the allocation. However, the total investment in PMGSY has steadily increased.

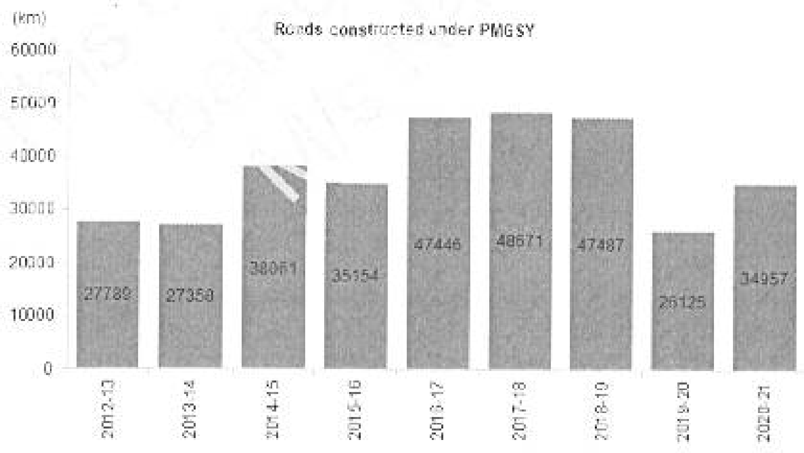
PMGSY-III announced in Budget 2020

Under the PMGSY-III scheme, announced in the Union Budget 2019-20, it is proposed to consolidate 125,000 km road length in states over the next five years. The scheme will also include 'through routes' and 'major rural links' that connect habitations to Gramin Agricultural Markets (GrAMs), higher secondary schools and hospitals.

It will entail an estimated cost of Rs 80,250 crore (Central share Rs. 53,800 crore, states' share Rs 26,450 crore).

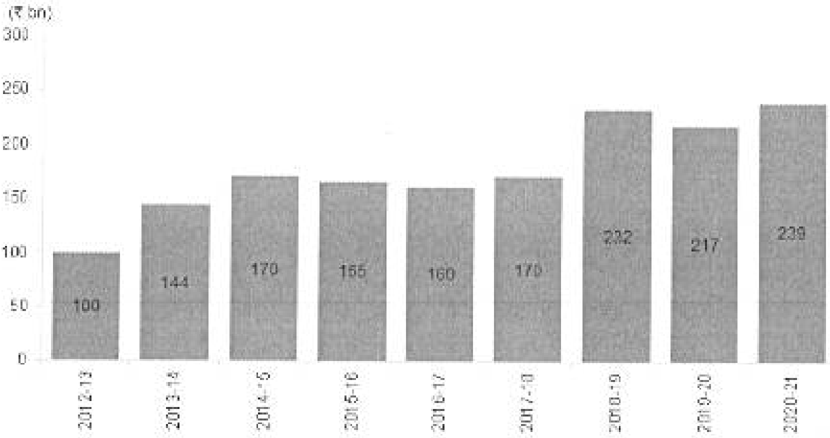
The road length in km to be constructed under PMGSY-III is significantly lower than the 218,000 km constructed under the umbrella scheme between fiscals 2015 and 2019. CRISIL Research expects investments in rural roads to slow down by ~10% over the next five years, due to the lower targets.

PMGSY - Year-wise road length constructed (Km)



Source: Ministry of Rural Development

PMGSY - Year wise expenditure



Source: Ministry of Rural Development

35.0 Risk profile factors

Key risk factors

Risk factor	Impact
Policy Risk	Low Moderate High
Construction Risk	Low Moderate High
Traffic Risk	Low Moderate High
Environmental Risk	Low Moderate High
Input related Risk	Low Moderate High
Interest Rate Risk	Low Moderate High
Competetiveness	Low Moderate High

Source: CRISIL Research

Policy Risk

The concession period for PPP projects in India is 15-20 years. During this period, policies from different governmental agencies are in play. Policy risk is higher during the operations and maintenance (O&M) period as many policies can negatively affect the traffic flow for projects in which a developer takes the traffic risk. Heres an example: because of ban on mining iron ore in Goa and in some parts of Odisha, the road stretches which were dependent on the traffic generated by these mines had to take a hit. GST is another example of such a policy risk. GST brings in the need for formalisation of the entire value chain, which will take time. Until then, road construction players have to shoulder the burden of increased working capital. For some contractors, this could hamper their ability to infuse more money required for project execution.

Construction risk

Road projects (EPC/BOT/HAM) involving construction are long term in nature (two-three years minimum) . All long-term projects are exposed to inherent risks such as construction delays owing to lack of funds, material shortages, unanticipated cost increases, cost overruns, inability to negotiate satisfactory arrangements with joint venture partners, and arbitrations.

Traffic risk

The financial flexibility of an entity which takes up the traffic risk depends substantially on accuracy of traffic estimates. Decrease in actual traffic volume and the forecasted numbers can adversely impact a company financially (cash flow crunch) and operationally. In HAM and BOT annuity models, the traffic risk is taken by the government. However, in BOT toll, operate-maintain-transfer (OMT) and toll-operate-transfer (TOT) models, the traffic risk is taken by the private entity.

Environmental risk

Risk of natural calamities on road infrastructure is uncontrollable. It impacts road infrastructure, sometime rendering it inaccessible. The concession agreements of PPP projects peg the cost on both private party and government authority.

Input-related risk

- Land is one of the most important components for the industry. The land acquisition process is time consuming. Thus, the status of land acquisition during awarding of a project and within a particular period after the project has been awarded is crucial, as a small portion of unacquired land can render investment in the remaining part of the project futile.
- Cost of raw materials such as bitumen depends on the international market for oil. Change in oil prices affects the overall cost of a project.
- The risk of cost escalation or raw material shortage is company specific depending on the companys procurement policies, especially in some states such as Karnataka, where sand availability is an issue and has to be imported.
- Funding for PPP projects awarded under HAM and BOT toll model. Depending on the competitiveness of the bid, policies on the roads sector and the scenario of the banking sector, availability of funding could be limited to some players or some projects.

Interest rate risk

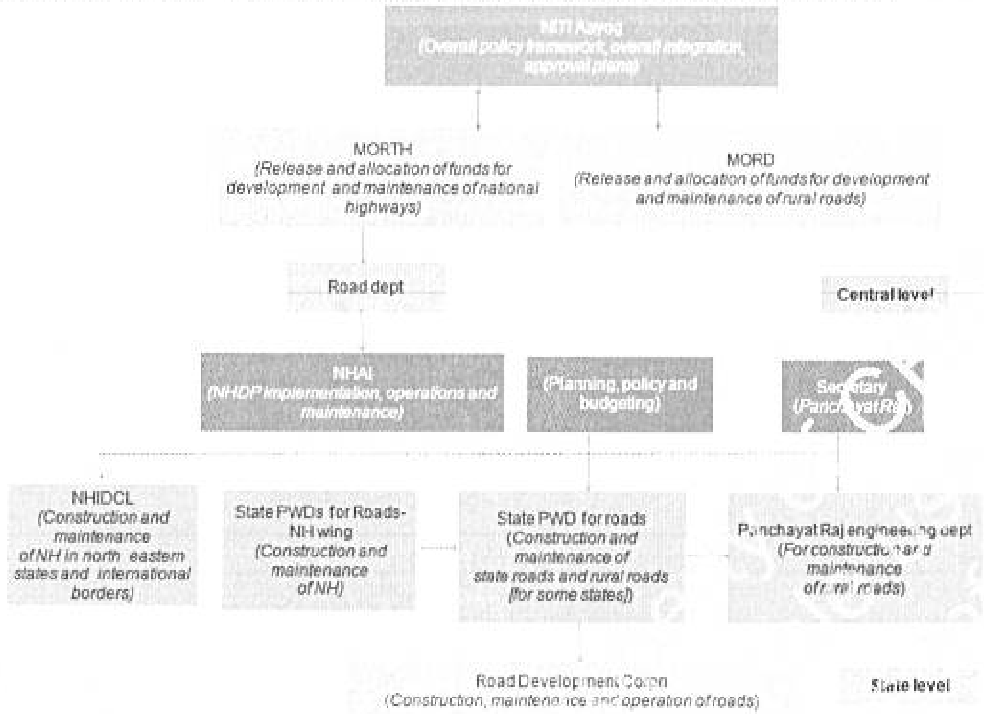
The concession period of a PPP project is as long as 20 years. Thus, one of two parties involved in the agreement has to bear the interest risk on funds borrowed for construction. In case of BOT toll projects, the concessionaire takes the interest rate risk. However, in case of HAM, the government agency makes a payment along with annuity payments, which is linked to the prevalent bank rate, thus reducing interest rate risk by a considerable amount.

Competitiveness

The ability of a bidder to quote a particular margin while bidding for projects depends on the intensity of competition for the project. Apart from construction of road in hilly terrains and interior parts of the country, where resource mobilisation is tough, the developer does not need to possess major technological capabilities. Thus, the entry barrier to the sector is low. However, the ability to bid for a BOT toll or a HAM project is limited to few players as it requires financial capacity along with execution track record. Thus, the level of competition could be different for different project models, with EPC generally attracting the highest intensity as it doesnt require capital infusion from the company.

36.0 Regulatory Framework: Institutional framework

Institutional framework Road sector - Institutional arrangement at the Central and State level



Note:NHIDCL stands for National Highways and Infrastructure Development Corporation Source: CRISIL Research

In January 2015, the NDA government replaced the Planning Commission with NITI (National Institution for Transforming India) Aayog, a multi tiered structure that will provide strategic and technical advice to the Central and state governments. At the Central government level, several line ministries will handle transport planning, coordination and policy setting; overall coordination is by NITI Aayog.

At the Central level, NITI Aayog in consultation with the Ministry of Road Transport and Highways (MoRTH) and the Ministry of Rural Development (MoRD) is responsible for overall policy, programme development and resource planning. MoRTH's duties relate to policies on road transport and development and maintenance of national highways.

National Highway Authority of India (NHAI) is the implementing agency for implementation, operation and maintenance of national highways. NHAI was constituted and operationalised in February 1995; it was given the status of an autonomous corporate body under the control of the road transport ministry. However, the Central government has powers to divest NHAI of its responsibilities.

At the state level, the overall policy, programme development and resource planning is done by the state planning cell in consultation with the Centre (NITI Aayog) and the state ministry of roads.

National Highways and Infrastructure Development Corporation (NHIDCL) was incorporated in July 2014. NHIDCL is a fully owned company of MoRTH. Its mandate is to design, build, operate and maintain national highways and roads in the north-eastern region and other parts of the country that share international boundaries with neighbouring countries.

State public works departments (PWDs) and road development corporations are implementing agencies at the state level implementing, operating and maintaining the state highways, major district roads and rural roads in some states.

MoRD is responsible for policy development as well as monitoring and coordination of rural roads. Apart from state PWDs, the

Panchayati Raj ministry also constructs and maintains rural roads. Allocation for Pradhan Mantri Gramsadak Yojana (PMGSY), which is focussed on rural roads, is provided by MoRD.

The ministries allocate and release funds, for the development of roads, to the respective implementing agencies.

37.0 Regulatory Framework: Policy Framework

Policy framework

Budget 2021

The FY22 capital allocation for MoRTH stood at Rs 1,08,230 crore, which is the highest-ever for the ministry. In FY21, this stood at Rs 81,975 crore. The total allocation, including revenue expenditure, for FY22 stood at Rs 1,18,101 crore, up from Rs 1,01,823 crore in FY21.

Of the total allocation, the National Highways Authority of India (NHAI) will get Rs 57,350 crore, up from Rs 48,050 crore (revised estimate) in FY21. NHAI has also been permitted to borrow Rs 65,000 crore in FY22 the same as FY21.

Impact

The increase in allocation is expected to improve road connectivity across the country, and will have favourable spillover effects on allied sectors such as construction-focused companies as well as boost demand for steel and cement.

Key policy measures for private participation

In order to encourage and facilitate private sector investment and participation in the roads sector, the central government has undertaken certain policy measures and provided certain fiscal incentives within the sector. The most significant policy reforms in recent times are discussed below.

Amendments to Build-Operate-Toll (BOT) Model Concession Agreement (MCA), Aug 2020

Land Acquisition:

1. The Authority shall grant vacant access and Right of Way for minimum **90%** of the construction zone before the Appointed date as opposed to **80%** previously.
2. The **balance 10% land** should be granted within **180 days** of the Appointed date and in the event of delay beyond the said 180 days, the balance RoW would be **removed from the scope of work.** The descoping clause was not present in the earlier agreements. **Automatic descoping** enables the developer to receive PCOD/ COD on the completed stretch and start tolling.
3. The earlier MCA stated that the balance 20% land would need to be provided within 90 days of the Appointed Date and in the event of delay, the authority would pay damages in a sum calculated at the rate of Rs. 50 (Rupees fifty) per day for every 1,000 square metres or part thereof, commencing from the 91st (ninety first) day of the Appointed Date and until such Right of Way is procured.
4. If Appointed Date is not received within the first anniversary of the Date of Signing the Concession Agreement (or extended period), the project would be deemed to be **terminated.** This termination clause was not present in earlier agreements, it was introduced in HAM and is similar in the new BOT agreement.

Traffic Risk:

5. Another major change in the MCA is the provision of assessing the **revenue of a project every five years** instead of 10 years or once in a lifetime of the project. In case of traffic shortfall from the Target traffic, the concession period would be

adjusted accordingly.

6. The new clause states that in the event the Actual Average Traffic has fallen short of the Target Traffic by more than **5%** , then for every 1% shortfall, the remaining concession period will be increased by 1%. But shall not exceed 20% of the concession period.

7. The earlier clause stated that in the event the Actual Traffic has fallen short by more than **2.5%** of the Target Traffic, then for every 1% shortfall, the concession period would be extended by 1.5%.

Additional Clause for Stuck projects:

8. In case the **project has not achieved COD one year post its Scheduled Completion Date** and proceedings have been started against the Concessionaire before the NCLT the project will be mutually foreclosed and the Authority shall pay the concessionaire an amount equal to:
    a. 90% of debt due less Insurance cover and
    b. b. Value of work done

Impact of the policy

- The automatic descoping as well as making 90% land available before the Appointed Date would nullify land acquisition issues that were prevalent in earlier BOT projects. Plus, the clause to terminate the project if Appointed Date is not achieved within a year, would also weed out unviable projects and avoid cost and time overruns.
- Revenue assessment based on Target traffic every 5 years instead of 10 years, makes it more viable for developers to bid for BOT projects and maintain their IRRs.
- The additional clause on stuck projects, especially due to developers default, would also enable NHAI to weed them out and rebid them viably.

Amendments to Engineering, Procurement and Construction (EPC) Model Concession Agreement (MCA)

The key changes made to the EPC MCA are:

- Right of way: Deadline reduced from 240 days to 180 days for approval/ clearances for area under forest or sanctuary.
- If Appointed date is not received within 90 days of signing the agreement, contract may be terminated. Authority will pay contractor damages = 1% of the contract price to contractor for each day of delay
- If project is not completed within 90 days of Schedule completion date, contractor would be ineligible to bid for future projects till such is complete.
- Lower compensation and higher tenure for maintenance obligations of contractor. Defect liability period increased from 4 years to 10 years.
- Increased interest on mobilization advance paid to authority. Earlier recovery of mobilization advance by the authority. Release of retention money against bank guarantees discontinued.

Impact

- Authoritys obligations increased to enable quicker land acquisition
- Developers working capital needs increased; also responsible for timely completion of project

Introduction of the Hybrid Annuity Model (HAM)

The broad contours of the policy are:

- 40 per cent of total project cost to be funded by the government and the remaining by the developer.
- The project cost will be linked to inflation
- The 'Construction Support' is to be disbursed in five equal installments of 8% each and the timing of each such payment shall be linked to percentage of project cost spent by the concessionaire.
- Traffic risk will be borne by the government with developers receiving fixed annuities
- Annuities will be linked to bank rate plus 3%
- 80% of land to be provided prior to appointed date

Impact of the policy

- With land being acquired and other clearances already in place before appointed date, construction risk is expected to be lower.
- Lenders will be assured a steady stream of inflows as traffic risk will entirely be borne by the government.
- The low risk and lower capital requirements is expected to entice private players as well as bankers towards these projects and gradually help increase private participation in the sector

(For more details, please refer to Impact Analysis: Hybrid Annuity Model)

Amendments to Model Concession Agreement (MCA)

Key changes include:

- Back ending of premium payment
- Redefinition of project milestones
- Lenders receive first charge on all rec
- Deemed termination of projects
- Maintenance obligations
- Toll fee notifications

Impact

The amendment to allow premium payment to begin only in the fourth year of completion will give the developers and lenders a great level of comfort as interest payments are high in the first 3 years of operations. The deemed termination of projects will ensure that troubled projects are terminated without delay, thereby avoiding problems that previously existed with prolonged delay of projects. The amendments with regard to toll fees and maintenance of national highways will provide better protection to the users of highways.

(For more details, please refer to Impact Analysis: Amendments to MCA: DBFOT Toll)

Exit policy

On August 26th 2015, the Cabinet Committee on Economic Affairs (CCEA) amended its earlier approval dated 13th May, 2015 to allow 100 per cent equity divestment after two years of completion for all BOT projects, irrespective of year of award. The previous policy allowed such divestments only for projects awarded prior to September 30th, 2009. While the previous policy allowed the funds obtained through such divestments to be used only for completion of the concessionaire/promoter's other pending BOT road projects, the new policy allows the proceeds to be used to complete any highway projects, any power sector projects or also to retire their debt in any other infrastructure projects.

Impact

This move will help closing of stake sale transactions announced in the last one year. Thus, helping free up capital of developers which can be used to repay debt or invest in new projects.

NHAI Fund Infusion

On May 13, 2015, the CCEA permitted NHAI to infuse funds in projects stuck in advanced stages of completion. Below are the broad contours of the policy announced:

- Government to look at one time fund infusion in stalled projects, where 50% work has already been done.
- NHAI to have the first charge on toll revenues

Impact

This policy will improve developers' cash flows through toll collections and also improve their debt servicing ability. However, as NHAI will have the first charge on the receivables, the lenders are hesitant in allowing for such a fund infusion and hence this policy may not have significant impact in the near future.

Premium rescheduling

In March 2014 premium rescheduling was announced for projects with delays or lower than expected traffic were allowed premium rescheduling. This helped players to manage cash flow mismatches especially at a time when loans tenors were significantly lower than project life thus resulting in cash flow issues. It also helped specifically for aggressively bid projects where premium payments amounted for a very large portion of the total cost.

Substitution

In January 2014, the Cabinet Committee on Economic Affairs approved the proposal to facilitate substitution of concessioners in ongoing and completed national highways project. As per the proposal, the existing concessioners are permitted to divest their equity in totality in on-going or completed projects. However, subsequent to the substitution, the leading substituting entity will be required to maintain at least 51 percent equity holding in the project SPV. The decision to permit substitution will be taken by lenders in consent with NHAI.

De-linking of Forest and Environmental clearances

In March 2013, the supreme court approved to de-link forest and environmental clearances. This de-linking of the two clearances is valid only for road widening projects. In a notification in 2011, the Environment and Forest ministry has asked for forest clearances before seeking environmental approval. This led to a lot of road projects to be stalled in the first stage itself. This judgment allows companies to start the road widening work with just environmental clearances without waiting for forest clearances. However, forest clearances will be necessary for stretches that fall in the forested areas.

Relaxation on green nod norms for road widening projects up to 100 km

In June 2013, the Environment Ministry cleared a proposal allowing expansion of highways up to 100 km without environmental clearances. Earlier, environmental approval was not required for road expansion up to 30 km. The relaxation will also be applicable on existing highways which require additional 40 meters of land for widening. This limit was earlier 20 meters.

Repayment of 75% of Arbitration Claims

In August 2016, ministry introduced a policy with regards to payment of 75% of arbitration claims to the concessionaires. According to it, if an arbitration claim has been awarded in favor of a private concessionaire in a lower court/tribunal and the government agency has appealed against it in a higher court/tribunal, then the private player can receive 75% of the claimed amount. It will have to provide to the authorities a Bank Guarantee of an equivalent amount to the government agency.

Impact

This policy will help the private players facing financial problems and having substantial amount of claims pending with NHAI. This is expected to help kick-start stalled projects on account of fund infusion by developer as well as provide some relief to the lenders on account of loan repayment.

38.0 Working capital analysis

Working capital analysis

	FY21	FY20	FY19
Working capital days	-8	78	44
Inventory days	97	143	134
Receivable days	116	128	115
Payable days	220	193	205

Note: Aggregate standalone numbers for Ashoka Buildcon, KNR Constructions, PNC Infra, Dilip Buildcon, Gayatri Projects, Simplex Infrastructure and Sadbhav Engineering have been considered

Source: CRISIL Research

- Working capital in FY21 fell due to a drop in inventory days. In FY20, working capital days were the highest over the previous 3 fiscals as construction activity was halted and projects were postponed.

- Inventory days fell in FY21 as construction activity picked up some momentum.

- Receivables on average have gone down over the past three fiscals due to timely payment from clients and delay in payment of claims from the government. Money is expected to be received after the completion of the project. If the government does not pay on time, companies would suffer revenue loss. Receivables can also be explained in the context of a company transferring its SPV to a subsidiary or doing joint venture for the particular project. FY20 witnessed a slight increase in receivable days.

- Days payable dipped in FY20 before rising again in FY21.

39.0 Company profiles: HCC Ltd.

Overview/Background

Hindustan Construction Company (HCC) was established by industrialist Seth Walchand Hirachand in 1926. The standalone company executes road, power, water, and urban infrastructure projects as an engineering, procurement, and construction (EPC) contractor.

HCC Infrastructure (a wholly owned subsidiary of HCC) undertakes build-operate-transfer (BOT) projects, mainly roads. It functions as a developer-cum-contractor where special purpose vehicles (SPVs) have been created, with HCC being a majority shareholder. HCC Infrastructure executes the projects through another step-subsidiary, HCC Concessions.

HCC's projects are across India and, to an extent, in Bhutan. In May 2010, the company diversified into Europe by acquiring a 66% stake in Steiner AG (Switzerland) through a wholly owned subsidiary, HCC Mauritius Enterprises Ltd. In fiscal 2014, HCC acquired the balance 34% stake in Steiner AG, completing the acquisition. Steiner AG specializes in turnkey construction and offers real estate development services in Europe.

Content

Recent/Key Developments

- In September 2021, the joint venture between Hindustan Construction Company and KEC International Ltd. won the Rs 1122 crore civil contract for Corridor 5 of Chennai Metro Project.
- In May 2021, the company's board approved a debt resolution plan in a bid to reduce its debt worth over Rs 10,000 crore. Under the plan, HCC will transfer up to Rs 4,000 crore worth of liability to subsidiary Prolific Resolution Pvt Ltd. It will also transfer the economic interest, that is, awards of up to Rs 2,749 crore and claims of up to Rs 2,136 crore, to the arm.
- In Sept 2020, the company completed its 100 percent sale of Farakka-Raiganj Highways Limited to Cube Highways and Infrastructure II Pte Ltd. The project's enterprise value is Rs 1508 crores, comprising debt of Rs 905 crore and an equity valuation of Rs 603 crore. The total expected payout of Rs 603 crore to HCC Group includes cash payout of Rs 270 crore which combines equity consideration and contractor payments, Rs 233 crore of holdbacks to be released on the completion of dispute resolution with NHAI, up to Rs 100 crore of earnout is payable in 2023 contingent on traffic projections.
- In Jan 2020, HCC's lenders announced that they were going to carve out about Rs.2,100 crore of debt on the construction firm to a third-party-controlled special purpose vehicle; certain arbitration awards and claims will also move to the SPV and will significantly deleverage the company and address its asset-liability mismatch.
- In Jan 2020, HCC in a joint venture with VCCL bagged Rs. 489 cr civil contract from Delhi Metro for Phase IV project. HCC has 75% stake in the venture.
- As of Jan 2020, the company's default amount stands at Rs 277 crore. HCC began defaulting on loans in April last year. The company has been plagued by non-payment of arbitration awards. Currently, HCC has dues from National Highways Authority of India (NHAI) and other companies of over Rs 4,000 crore in arbitration awards.

Equity Infusion

- In September 2018, the board of directors of the company approved issue of equity shares of the company of face value Re. 1 each by way of a rights issue to the existing shareholders of the company for Rs. 5 billion.
- In March 2018, the ESOP compensation committee approved a grant of 3,00,000 options to the eligible employee(s) under the HCC Employee Stock Option Scheme of the company.

Business Profile

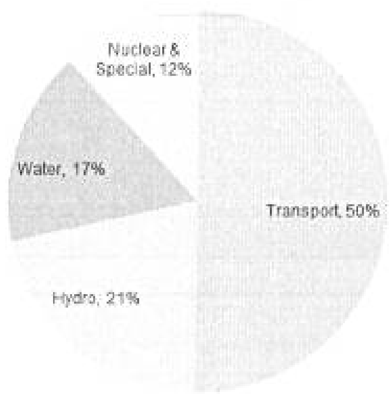
Capital expenditure plans

Capital market information

Other Details

Operational Performance

Total Orderbook size: Rs 17,575 crore as of June 2021



Source: CRISIL Research

Financial performance

In terms of revenue performance of company its FY17 revenue stands at Rs.93.46 against Rs.80.36 Billion , the PAT and Net margin have fallen. HCC several projects came on-stream in the recent past, a large number remain stalled or considerably delayed, which has contributed to construction companies making unproductive capital outlays and facing a severe liquidity crunch. And as the Gearing number for the last two years says that it has fallen.

40.0 Company profiles: NCC Ltd.

Overview/Background

NCC Ltd. was established in 1978, as a partnership firm and converted into a limited company in 1990. The company undertakes civil construction in segments such as buildings, water, roads, irrigation, power, electrical, railways, metals, mining. It also has a presence in the Middle East where it undertakes works in roads, buildings, and water segments. NCCs business divisions include buildings and housing, roads, electrical, water and environment, irrigation, railways, power, metals, mining.

Content

Recent/Key Developments

- In September 2021, BMRCL announced that the company had emerged the lowest bidder to construct all three packages of Bangalore Metros 37 KMs Airport Line (Blue Line), which will link Bengalurus Kempegowda International Airport (KIA) to K.R. Puram.
- NCC has received six new orders totaling to Rs. 1,548 crore (exclusive of GST) in the month of August, 2020. Out of this, one order of Rs. 959 crore pertains to Water Division and second order of Rs. 262 crore pertains to Building Division and balance four orders of Rs. 327 crore pertain to Electrical Division. These orders are received from state government agencies
- Another order by the Delhi Metro Rail Corporation Limited (DMRC) was won by the company for Rs 553 crores spanning over a 6.1 kms stretch.

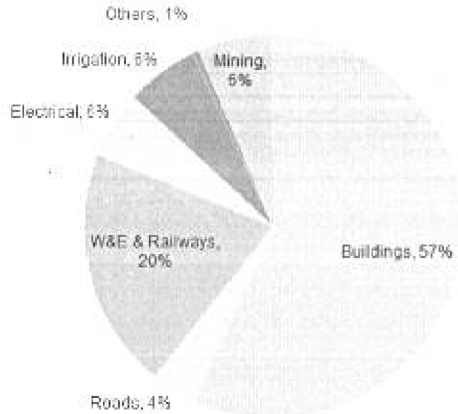
Capital Infusion

- In August 2018, the company allotted 9.2 million convertible warrants to M/s. A V S R Holdings Pvt. Ltd., one of the promoters of the company on preferential basis and received 25% of the total consideration payable towards the aforesaid warrants.

Business Profile
Capital expenditure plans
Capital market information
Other Details

Operational Performance

Order mix as on June 2021, buildings account for Rs 22183 crore



Source: Company reports, CRISIL Research

Financial performance

Financial Data

		2014	2015	2016	2017
Net Sales	Rs. Lakhs	725694	928169	915720	865665
Operating Profit	Rs. Lakhs	74607	96775	100570	69477
Operating Margin	Percentage	10.26	10.41	10.88	7.99
Profit After Tax	Rs. Lakhs	-900	3288	8161	840
Net Profit Margin	Percentage	-0.12	0.35	0.88	0.10
Net Worth	Rs. Lakhs	270614	334542	305871	372213
Total Debt	Rs. Lakhs	391447	338967	320801	257192
Debt-Equity Ratio	Times	1.45	1.01	1.05	0.69
RoCE	Percentage	10.01	12.20	12.52	9.07
Interest coverage	Times	1.29	1.51	1.70	1.64
Asset turnover ratio	Times	0.62	0.76	0.79	0.80
Current ratio	Times	0.99	1.09	1.15	1.26

Source : Crisil Research

Company posted a turnover of Rs.85.16 Billion (inclusive of other income) for the year ended 31st March, 2017 as against Rs.91.57 Billion (inclusive of other income) in FY-2015-16. Operating margin of the company shrink by almost 300 basis points to 7.9% in FY 2016-17 as compared to 10.8% in FY 2015-16. And also in terms of profit earning in FY 2016-17 has decline Rs.(8.9) crore as compared to Rs.32.88 crore in FY 2015-16.

The demonetization announced by the Union Government in November, 2016 and the consequent slowdown in the economy in the second half of the Financial Year have resulted in decrease in the turnover posted and the net profit earned by the Company as compared with the previous year. Your Board is optimistic that the Company will post improved performance in the coming years

41.0 Company profiles: Patel Engineering Ltd.

Overview/Background

Patel Engineering Ltd. (PEL), founded in 1949, is one of the major infrastructure and construction services company in India. PEL contracts and executes projects across various sectors such as roads, water, railways, power, and real estate and has a strong presence in the hydro power and irrigation segments. It has also executed projects in oil refining, steel manufacturing, mining and heavy machine building, and tool plants. It has presence across 11 countries including United States of America, Singapore and Australia. It undertakes engineering, procurement and construction (EPC) contacts for water, railway, and power projects as well as build, operate and transfer (BOT) contracts for some of its road projects. PEL also develops real estate projects through its subsidiaries.

Content

Recent/Key Developments

- In September 2021, the company bagged a work order for 500 MW Teesta-VI hydropower project in Sikkim from Lanco Teesta Hydro Power.
- In Sept 2020, Patel Engineering Limited secured three arbitral awards against North Eastern Electrical Corporation Limited (NEECO) in respect of a project in Meghalaya.

Equity infusion

- In Sep 2019, the company approved Rs 207 cr rights issue. The board has approved an issue of 22.99 cr equity shares of face value Re 1 each on rights basis to the eligible equity shareholders in the ratio of seven shares for every five shares held by them as on September 18, 2019. The company has fixed the issue price at Rs 9/share.

Details of new initiatives

- In August 2018, the company bagged two hydro projects and a tunnel project from Tamil Nadu Generation and Distribution Corporation Ltd (TANGEDCO) and Municipal Corporation of Greater Mumbai (MCGM) respectively for an aggregate value of Rs. 24 billion.

Business Profile

Major subsidiaries

ASI Inc.

It is a civil contracting company involved in construction and rehabilitation of dams, spillways, and water resource projects. ASI has a fully owned subsidiary, HCP Constructors Inc, which is also a water transmission contractor specialising in water and infrastructure projects.

Michigan Engineering Pvt Ltd

It is involved in executing engineering projects such as micro tunneling, pipe ramming and jacking, underwater drilling etc.

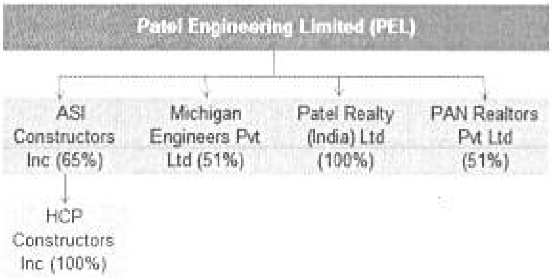
Patel Realty

It is a fully owned subsidiary of PEL, involved in development of commercial and residential projects. It has executed four commercial and eight residential projects. The company has projects spread across Mumbai, Bengaluru, Noida, and Hyderabad. It also has one residential and one commercial project in Mauritius.

PAN Realtors Pvt Ltd

It is a joint venture (between Patel Engineering, Amrapali group and Nirala Developers) to build premium residential apartments. This venture is currently developing a residential project in Noida in National Capital Region.

Major subsidairies of PEL



Source: Crisil Research

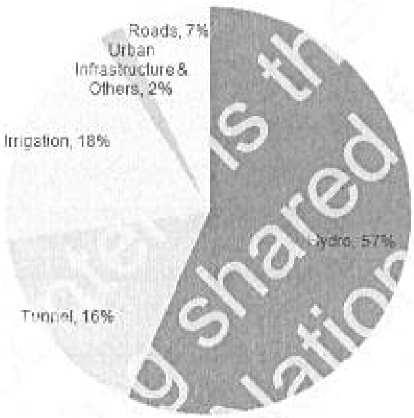
Capital expenditure plans

Capital market information

Other Details

Operational Performance

Total Orderbook size: Rs 14466.83 crore as of March 2021



Source: Company reports, CRISIL Research

Financial performance

The company standalone stands at Rs.27.14 billion in FY 2016-17 against Rs.20.6 Billion which indicates the strong performance took place in the execution activity mainly on the EPC side segment. The company is already L1 with Rs.3,500 crore of work, which is expected to turn into firm orders and now the focus of the Company shall be to double the current order book of Rs.7,415 crore by end of FY 18-19. PBT of the company stood at Rs.107.31 crore in FY 17 as compared to Rs.(39.1) crore in FY 16. PAT of the company for FY 17 was Rs.41.83 crore against a loss of Rs.(29.91) crore in FY 16.

42.0 Company profiles: Madhucon Projects Ltd.

Company overview/background

The Hyderabad-based company undertakes construction and infrastructure projects, such as development of transportation, irrigation, water resources, railways, smart cities, and real estate in India. The Company has built expressways, tunnels, dams, canals, spillways, national highways, flyovers and bridges throughout various states, including Andhra Pradesh,New Delhi, Madhya Pradesh, Assam, Uttar Pradesh, Telangana, Tamil Nadu, Rajasthan, Maharashtra and Bihar. The subsidiaries of the company includes Madhucon Infra Limited, Madhucon Toll Highway Limited, Madurai-Tuticorin Expressways etc.

Content

Key/recent developments

Details of new initiatives

- The company has arbitration claims against the NHAI for four its projects: Barasat-Krishnagar Expressways Limited (DBFOT), Vijayawada-Machilipatnam Expressways Limited (DBFOT-Toll), Ranchi Expressways (DBFOT-Annuity), Madurai-Tuticorin which are still under dispute.

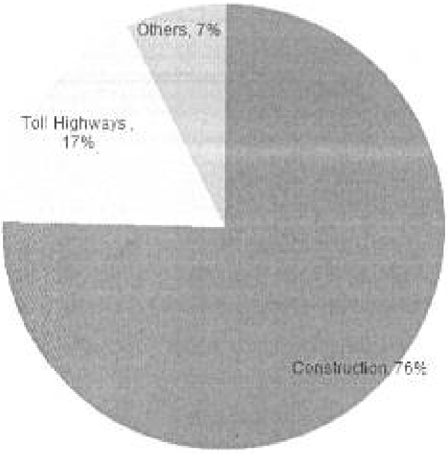
Capital expenditure plans

Operational Performance

- The Company has completed 11,200 lane kms of road projects across India in FY21.
- The Company executed Irrigation projects such as Canals, Dams, Tunnels, Spillways, Pump house and Lift Irrigation Projects having a total value of Rs 3,387.61 Crore are under progress in the State of Andhra Pradesh, Gujarat, Maharashtra, Madhya Pradesh, Uttar Pradesh and Telangana. Out of which work amounting to Rs. 2,035.49 crore was already executed till FY21, while work amounting to Rs. 1,352.12 Crore is the balance outstanding to be executed

Portfolio mix

Revenue mix (fiscal 2021):



Source: CRISIL Research, Company Reports

43.0 Company profiles: Punj Lloyd Ltd

Overview/Background

Punj Lyod Limited (PLL) commenced operations as a pipeline-laying company in 1989, in the engineering, procurement and construction (EPC) segment. The acquisition of Singapore-based Sembawang Engineers and Constructors (SEC) and UK-based Simon Carves Ltd/in 2006-07 helped Punj Lloyd expand its global footprint. PLL has presence in south and Southeast Asia, the Middle East, the Caspian region, Asia-Pacific region and Africa. The company mainly operates in oil and gas, petrochemicals, infrastructure and power. It also operates in defence and tankers, and terminals segments through strategic alliances with ST Kinetics and Technodyne International Ltd respectively.

Content

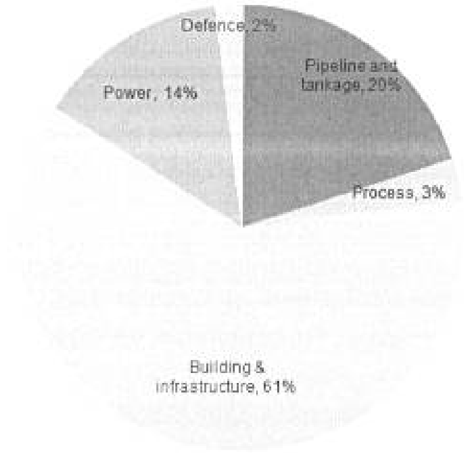
Recent/Key Developments

- As of March 2021, the company's lenders have rejected a resolution plan.
- As of Sept 2020, State Bank of India is seeking to invoke personal gaurantees worth Rs 3000 crore that it claims Punj Llyod's founder Atul Punj provided the Bank for loans taken by his company
- In March 2020, Prudent ARC and a US-based company has bid to take over Punj Lloyd, setting the acquisition process in motion. The US company is reportedly backed by a group of engineering firms.
- In March 2019, the NCLT ordered the commencement of a corporate insolvency resolution process (CIRP) in respect of Punj Lloyd Limited and called upon the creditors of Punj Lloyd Limitedto submit their claims with proof to the interim resolution professional.
- ICICI Bank had taken Punj Llyod to NCLT in 2018 when it defaulted on a Rs 800 crore loan repayment.

Business Profile
Capital expenditure plans
Capital market information
Other Details

Operational Performance

Order Book as on December 2018, (Rs 64.67 bn): latest available data



Note: This is latest available information

Source : CRISIL Research

Financial performance

The consolidated revenue of the company has fallen sharply, if you look at the last four year trend as it was Rs.108.21 Billion in FY 2014 and fallen to Rs.47.93 Billion, as there has been no significant improvement in the execution rate and the toll revenue collection. Operating Margin of the company shows the negative value at (18.42) in FY 2017. As there has been no significant gain in the topline, so the company struggled in terms of gaining profits, as there the profit shows at (8.70) Billion at FY 2017. as the data for last 4 years does not show a good picture in terms of profit achievement.

44.0 Company profiles: Simplex Infrastructure Ltd

Overview/Background

Established in 1924 by HP Lancaster of the UK and taken over by M D Mundhra in 1947, Simplex Infrastructures Ltd is primarily engaged in engineering, procurement and construction (EPC) business.It is a diversified company with presence across construction verticals, namely ground engineering, industrial, building and housing. It also undertakes power, marine port, road, railway, bridge, elevated road and rail corridor, and urban infrastructure airport, metro rail, sewerage and utilities - projects.
It also has exposure in the overseas market, especially in the Middle East, South Asia and parts of Africa.

Content

- Operational Performance

Key Developments

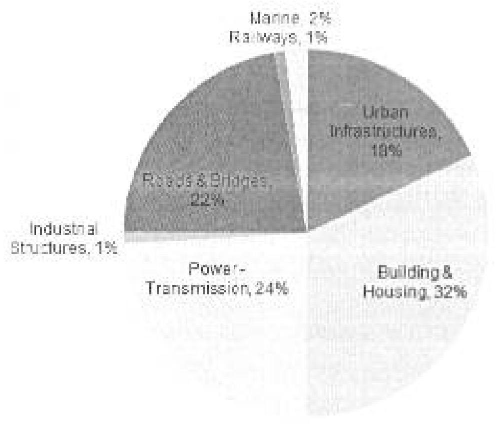
Business Profile
Capital expenditure plans
Capital market information
Other Details
Details of new initiatives

- As of Aug 2020, the Adani Group was in talks with promoters of Simplex Infrastructures to take equity exposure in the latter through a fresh share sale. A couple of private equity investors have also expressed interest in Simplex Infra, which has started defaulting bank loans owing to liquidity squeeze on delay on payment from government agencies
- The resolution plan, being worked upon in consultation with lenders, includes restructuring of the existing loans and capital raising through qualified institutional placement (QIP) or private placement of equity shares. At the end of January the company had outstanding borrowing of Rs 3,600 crore from a United Bank of India-led consortium of 28 lenders.

Capital infusions

- In Jan 2019, the board of directors of the company approved allotment of Rs 6,02,000 equity shares having face value of Rs 2 each to the promoters pursuant to conversion of warrants issued on 15th May 2018 at predetermined price of Rs 554.13 per warrant, having aggregate value of Rs 33,35,86,260

Operational Performance Order Book as on March 2021



Source: CRISIL Research

Financial performance

During the year under review, on standalone basis, revenue from operations were Rs.55.81 Billions as against Rs.58.77 Billions in the previous year. Profit before tax stood at Rs. 1.34 Billions as against Rs. 1.5 Billions in the previous financial year and net profit for the year after tax stood at Rs.1.34 Billions as against Rs.1.05 Billions in previous financial year, registering an increase of 13.4 %. Other Comprehensive income for the year (net of tax) is Rs. -133 Millions as against Rs.247 Millions in the previous year. After considering other comprehensive income, total Comprehensive income stood at Rs.1070 Millions as against Rs.1308 Millions in the previous year.

45.0 Company profiles: Reliance Infrastructure Ltd

Overview/Background

Incorporated in 1929, Reliance Infrastructure Limited is a part of the Reliance Group, with presence in power, roads, construction and cement businesses. It also provides engineering, procurement and construction (EPC) services to develop power and road projects. Besides, its portfolio includes infrastructure BOT (build-operate-and-transfer) projects relating to roads and highways, metros, airports, etc.

Content

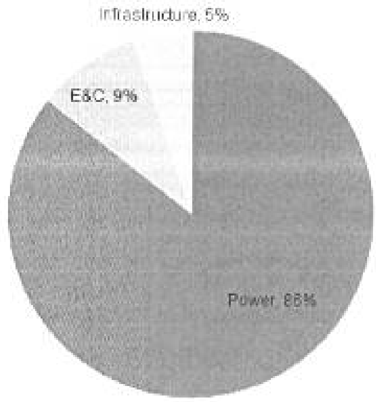
Recent/Key Developments

- In September 2021, the company's board approved raising up to Rs 750 crore by issuing foreign currency convertible bonds (FCCBs) on a private placement basis.
- In September 2021, the company said it would receive Rs 7,100 crore from the Delhi Metro Rail Corporation. The funds would be utilised to repay the debt of Reliance Infrastructure and the company would become debt free.
- In July 2020, while dismissing a revision petition filed by it against an order passed by the lower court, the Punjab and Haryana High Court has imposed a cost of Rs 1 lakh on Reliance Infrastructure Limited in the matter pertaining to the arbitration proceedings of a pending dispute related to the Rajiv Gandhi Thermal Power Plants engineering, procurement and construction contract.
- As of March 2020, Reliance Infra has defaulted in making payments of close to Rs 3315 crore from lenders such as Yes Bank, J&K Bank and SREI Equipment Finance.
- As of Aug 2020, Reliance Infrastructure (RInfra) led Mumbai Metro One Pvt Ltd (MMOPL) has written to the Maharashtra government, saying that it wants to sell the stakes it owns in the company. Metro-1 has been shut for five months owing to the pandemic and had been suffering losses prior to lockdown.

Business Profile
Capital expenditure plans
Capital market information
Other Details

Operational Performance

Revenue mix (fiscal 2021)



Source: Company reports, CRISIL Research

Financial performance

The Companys total income for the year ended March 31, 2017 was Rs.224.67 Billion as compared to Rs.239.37 Billion in the previous financial year. The total income includes earnings from sale of electrical energy of Rs.224.75 Billion as compared to Rs.239.65 crore recorded last year. During the year, interest expenditure increased to Rs.56.50 Billion as compared to Rs.50.26 Billion in the previous year. The company earned a Profit of Rs.6.05 Billion in FY 2017 as compared to Rs.(2.1) Billion in FY 2016, as the company segment performed really well in terms of Revenue & Profitability specially such as Roads and Metro.

46.0 Company profiles: IL&FS Transportation Net. Ltd.

Overview/Background

Established in 2000 as a wholly-owned subsidiary of Infrastructure Leasing & Financial Services Limited (IL&FS), IL&FS Transportation Networks Ltd (ITNL) is a major BOT (build-operate-transfer) road asset owner in India. Through its wholly-owned international subsidiaries, including Elsamex SA and ITNL International Pte. Ltd. (IIPL), the company provides maintenance services, primarily for highways, roads and gas stations across Asia, Europe, Africa and the Americas.

Content

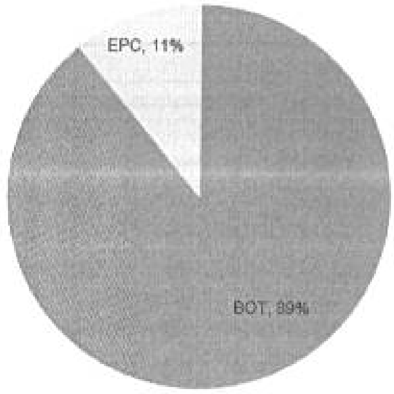
Recent/Key Developments

- In April 2021, the company received a settlement amount of Rs 673 crore for Kiratpur Ner Chowk Expressway (KNCEL) and Rs 20 crore towards claims for Chenani Nashri Tunnelway (CNTL), from the National Highways Authority of India (NHAI).
- In Sept 2020, IL&FS received a nod from SEBI to float an InVIT for 10 of its road assets and help resolve debt of nearly Rs 13,000 crore.
- In Jan 2020, the company announced foreclosure of the Beawer-Gomti Road Concession Agreement with MoRTH.
- In June 2018, IL&FS Transportation Networks first defaulted on a repayment of Rs 450 crore from SIDBI. In Oct 2018, NCLT allowed government to assume control and institute a new board under the chairmanship of Uday Kotak and five other new board members. The group's total outstanding debt was close to Rs 94,215 crores.

Business Profile
Capital expenditure plans
Capital market information
Other Details

Operational Performance

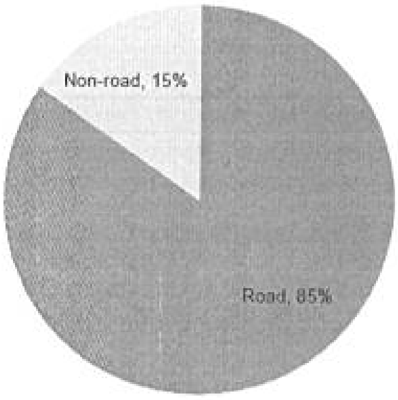
Order mix as on June 2018: As per latest available data



Note: As per the latest available data

Source: CRISIL Research

BOT Portfolio



Note: As per the latest available data

Source : CRISIL Research

Financial performance

During FY 2016-17, the consolidated revenues stood at Rs.64.29 Billion as compared to Rs.71.27 Billion compared to the previous year. The EBIDTA increased to Rs.26.34 Billion in 2016-17 compared to Rs.17.78 Billion in 2015-16, which is 52% escalation due to higher construction margins. Financing cost increased by Rs.512.37 Crore during 2016-17 due to debts availed by project companies to fund construction activities, increase in borrowing for investments in project companies and working capital requirements. The Debt equity ratio as at March 31, 2017 on a consolidated basis stood at 7.33. Profit before tax increased from Rs.72.31 Crore in 2015-16 to Rs.124.89 Crore in 2016-17, a 73% increase over the previous year. Profit after tax attributable to owners of the Company increased by 22% from Rs.0.80 in 2015-16 to Rs.142.73 Crore in 2016-17.

47.0 Company profiles: IVRCL Infrastructures & projects

Overview/Background

IVRCL Infrastructure and Projects Ltd, founded in 1987, is engaged in the business of development and execution of engineering, procurement, construction and commissioning (EPCC) and lump sum turnkey (LSTK) facilities in various Infrastructure projects and provides construction and civil engineering services. Its business units include water and environmental projects, transportation, buildings and industrial structures, power transmission projects, mining, overseas forays, and technical services and solutions.

It operates across verticals such as water and environment, irrigation, transportation, buildings and industrial structures, power and transmission, operations and maintenance, and mining.

IVRCL applied for corporate debt restructuring (CDR) in January 2014 owing to high level of debt and declining profitability. CDR to the tune of about Rs 73.5 billion was approved in June 2014. In November 2015, the company's joint lenders' forum invoked strategic debt restructuring (SDR), which allows lenders to convert debt into equity, effectively acquiring management control of the company. The lenders held around 60.77% of paid-up share capital of the company as of March 2016. The company in June 2018, allotted 6,46,810 equity shares to Bank of Nova Scotia under SDR at a price of Rs 8.765 per share.

Content

Recent/Key Developments

- In September 2021, a consortium of lenders led by IDBI Bank sought expressions of interest for acquiring its Rs 804 crore exposure in a road asset developed by IVRCL.
- In September 2019, the National Company Law Tribunal (NCLT) announced a move to invite Expression of Interest (EoI) for the sale of the company as going concern. The company faced number of petitions for recovery, had to undergo process of insolvency under IBC, 2016, wherein it was ordered to be liquidated.
- In September 2018, the committee of creditors of IVRCL Ltd. approved the shortlisting of expressions of interest from few prospective resolution applicants as part of the resolution process.
- The order book position of the Company stood at Rs. 79.1 billion as on March 31, 2018.

Equity Infusion

- In June 2018, the company made an allotment of 6,46,810 equity shares at a price of Rs. 8.765 each to Bank of Nova Scotia.
- In May 2018. the company made an allotment of 2,29,52,029 equity shares at a price of Rs. 24.39 each and 3,06,15,483 equity shares at a price of Rs. 8.765 each, to the lenders.

Business Profile

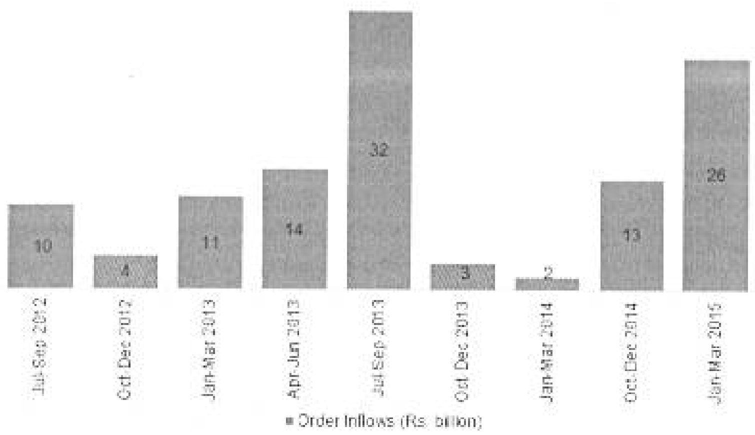
Capital expenditure plans

Capital market information

Other Details

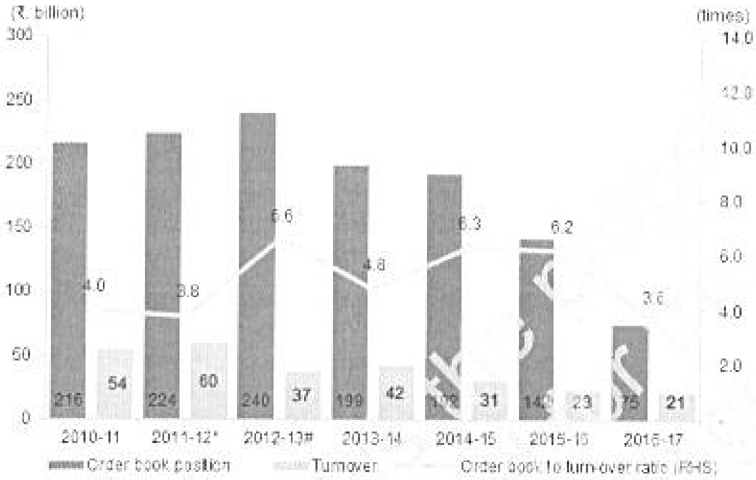
Operational Performance

Order Inflow - Rs.Billion



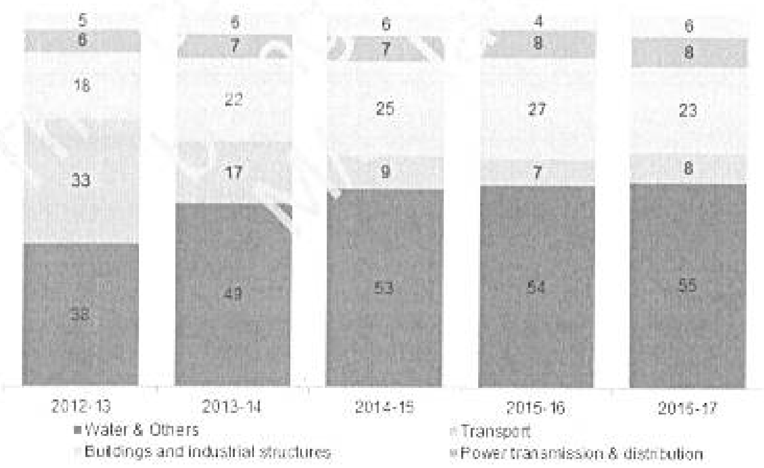
Source : CRISIL Research

Order Book to turnover ratio



Source: CRISIL Research

Order Mix



Source: CRISIL Research

Financial performance

The Company achieved a net turnover of Rs.25.22 billion for the financial year ended March 31, 2017, which is 12.7% lower than the turnover for the previous financial year. The major factor for reduction in turnover due to liquidity crunch in the system and unavailability of additional fund by banks. The Companys operations, execution of projects got adversely affected due to unavailability of liquid fund and resulted in lower turnover.

The Company maintained gross margin of 12.6% in spite of lower income from operations. However, EBITDA level was negative due to higher percentage of administrative cost primarily by way of provision for doubtful debts. The negative net margin (PAT) is reduced to Rs.85,110 million as compared to Rs.1,49,894 million in the previous year primarily because the Company accounted for deferred tax asset in the current financial year.

48.0 Company profiles: GMR Ltd.

Company overview/background

GMR Group was founded in 1978 by Grandhi Mallikarjuna Rao, it is headquartered in Bangalore, and has a presence across airports, energy, transportation, and urban infrastructure development. GMR primarily executes build-operate-transfer (BOT) projects in power, road and airport segments, with minor presence in engineering, processing and construction. GMR Highways Limited is a subsidiary of GMR Group and have 6 operating highways in its portfolio adding to total length of over 2,400 lane kms of roads and highways as of March 2019. The company has 285 kms of annuity based road projects and 216 kms of toll based road projects.

Content

Key/recent developments:

- In April 2021, the demerger of the company's airport vertical, other businesses became operational. Apar from unlocking the true potential of the businesses, it will enable divestment of some non-core assets in of highways
- In Aug 2020, the company announced that the non-airport business of the company- energy, urban infrastructure, EPC services--will be moved to GMR Power and Urban Infra Ltd as a going concern, while GIL will turn into a pure-play airport-owning company
- GMR infrastructure Ltd is also planning to sell stakes in four operational road projects and monetise some of its industrial land holdings by FY2020 and shift the focus to expand its existing airports sector.
- The four highway projects that are on the block to monetise are the Hyderabad-Vijayawada Expressway, Ambala-Chandigarh Expressway, Pochannpalli Expressway and the Chennai Outer Ring Road. The first two are toll projects while the remaining work on the annuity model. The two projects based on annuity have a short span of contract left while there is decent growth in traffic on the toll projects.

Capital expenditure plans

Operational Performance

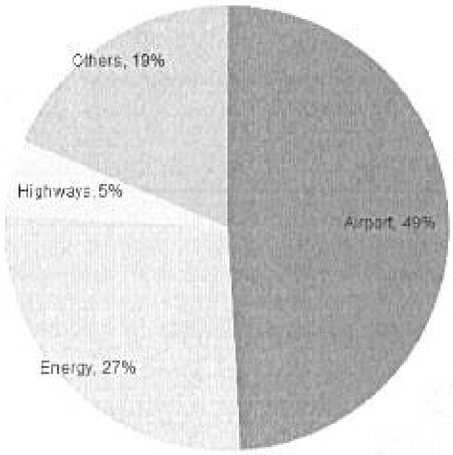
- The company has 29 projects in its portfolio comprising airports, power and roads. Of these, six project are road projects, in which 4 are annuity projects and 2 toll projects.

List of operational GMR projects	Length	Concession Period	Commercial Operations date
BOT Annuity projects			
Tuni Anakapalli	59	17.5 years (from May 2002)	Dec-04
Tambaram Tindivanam	103	20 Years (from Sep 2006)	Mar-09
Pochanpalli	93	17.5 years (from May 2002)	Oct-04
Chennai ORR	30	20 Years (from Jun 2010)	Jun-13
BOT (Toll) projects			
Ambala Chandigarh	35	20 years (from May 2006)	Nov-08
Hyderabad Vijaywada	181	25 years (from April 2010)	Dec-12

Source: Company, CRISIL Research

Portfolio mix

Revenue mix in Q2 FY22



Source: CRISIL Research, Company Report

49.0 Company profiles: Gayatri Projects Ltd.

Company overview/background

Established in 1963, Gayatri Projects Ltd has presence across verticals such as roads, irrigation, mining, railways and industrial projects. It has strong presence in the EPC segment of state and national highway projects and has completed over 6,850 lane km of road construction over the last 25 years. In fiscal 2018, the company demerged its BOT road portfolio into a new entity, Gayatri Highways. Gayatri Highways contains the companys four annuity and three toll highway BOT projects. The company is also developing three power projects under another subsidiary; Gayatri Energy Ventures Pvt Ltd (GEVPL).

The company has diverse geographical presence with operations in 19 states. Odisha (15%) and Uttar Pradesh (25%) are the two largest contributors to the order book followed by Telangana (12%), Maharashtra (12%), Andhra Pradesh (11%) and Jammu & Kashmir (7%)

Content

Key/recent developments

- In October 2021, the company won the arbritration case for Expressway in Hyderabad city. The amount, Rs 49.74 cr would be fully utilized towards reducing debt and improving balance-sheet leverage.
- In July 2021, the company signed a MoU with a foreign investor for exploring fund infusion options to manage its tight liquidity situation arising from cash flow mismatch.
- In June 2021, National Highways Authority of India (NHAI) declared the company a non-performer and prohibited from participating in the ongoing and future bids for the road projects till defects and deficiencies in one of the companys project- Varanasi Sultanpur 4-laning project in Uttar Pradesh were rectified.

Details of new initiatives

- In Nov 2020, company announced that it received Rs 208 crore net of statutory deductions under the GoI scheme of monetisation of 'under litigation arbitral award' against bank guarantees. The company along with its joint venture (JV) partner had been awarded an arbitration claim worth Rs 703 crore including interests for its road project in Nagaland and Gayatri Projects' portion in the same was Rs 264 crore. The company has now received 75% of the claim (including further interest of Rs 27.74 crore for the period from the date of award till the date of payment) after furnishing bank guarantees of similar amount

Capital expenditure plans

Operational Performance

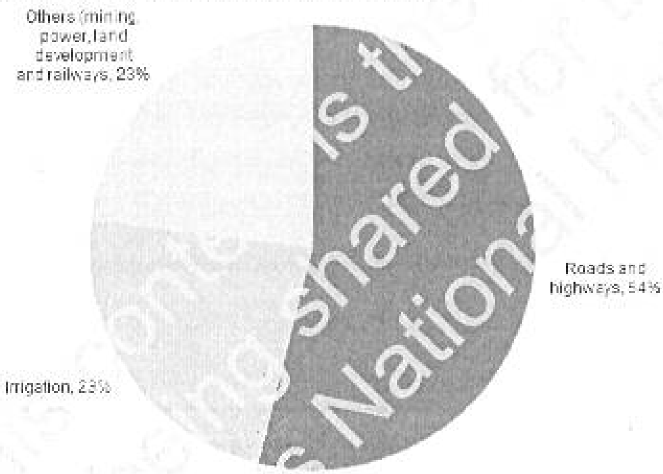
Top work order of the company as of Q2 FY22

Project name	Location	Contract Value (Rs mn)	Balance work as on July 2021 (Rs mn)	Expected Completion of Project
Purvanchal Expressway Package 1	Eastern UP	14,830	2670	Q2 FY22
Purvanchal Expressway Package 2	Eastern UP	12,760	1660	Q2 FY22
Ghaghra Bridge to Varanasi Package 2	Varanasi, UP	7410	860	Q2 FY22
Ghaghra Bridge to Varanasi Package 3	Varanasi, UP	5870	340	Q1 FY22
Sultanpur - Varanasi Package 1	Varanasi, UP	9860	1820	Q3 FY22
Sultanpur - Varanasi Package 2	Varanasi, UP	8060	1240	Q2 FY22
Angul - Sambalpur Road work	Angul, Odisha	12550	6220	Q3 FY22
Cuttack - Angul PKG 1	Cuttak, Odisha	5830	2730	Q4 FY22
Cuttack - Angul PKG 2	Cuttak, Odisha	5290	2800	Q4 FY22
Rajamunda – Barkote	Barkote, Orissa	3940	2940	Q4 FY22
Bihar Road (Patna - Gaya)	Patna, Bihar	9710	3580	Q2 FY22
BSRDC Package 5	Kadirganj, Bihar	1260	710	Q2 FY22
BSRDC Package 6	Kadirganj, Bihar	1510	950	Q2 FY22
BSRDC Package 7	Kadirganj, Bihar	200	100	Q2 FY22
Nagpur - Mumbai Expressway	Shiridi, MH	13120	7270	Q3 FY22
6 Lane Tunnel at Khambataki Ghat	Satara, MH	4930	4150	Q4 FY22
Jammu Ring Road	Jammu	13390	7660	Q4 FY22
Andhra Pradesh / Tamil Nadu Border	Chittoor, AP	2790	680	Q4 FY22
Hyderabad Elevated Corridor	Hyderabad	4250	2860	Q2 FY23
Chintalapudi PKG 1	Pattisema, AP	12400	10090	Q2 FY23
Chintalapudi PKG 2	Jangannagudem AP	6830	4620	Q2 FY22

Source: Company reports, CRISIL Research

Portfolio mix

Segmental Diversification of order book in Q2 FY22:



Source: CRISIL Research, Company Report

50.0 Company profiles: IRB Infrastructure Developers Ltd.

Company overview/background

Incorporated in 1998, IRB Infrastructure Developers Ltd (IRBIDL) is an established road developer with expertise in build-operate-transfer (BOT) toll road projects. With toll roads, construction, and real estate as IRB's business segments, about 68% of its revenue in fiscal 2019 was from the construction business.

IRB undertakes engineering, procurement, and construction (EPC) contracts through its subsidiary, Modern Road Makers Pvt Ltd. It has formed a separate subsidiary, IRB Sindhudurg Airport Pvt Ltd, for greenfield airport projects and carries out real estate activity under Aryan Infrastructure Investments.

The company is currently one of the few established players still participating in road projects under the public private participation model.

Content

Key/recent developments

- In April 2022, the company commenced toll collection on the the Palsit-Dankuni national highway in West Bengal, and will continue to collect toll for the concession period of 17 years
- In April 2022, the company announced that the project of eight lane Vadodara Kim Expressway has been issued a Provisional Certificate by the Competent Authority upon substantial completion of the works. Consequently, the SPV is eligible for receipt of bi-annually Annuity payments from NHAI for the operation period of 15 years
- In October 2021, the company was looking to raise Rs 5347 cr from Spain's infrastructure group Ferrovial S.A. and Singapore state investor GIC
- In April 2021, the comapny received a letter of award for an Rs 828 cr project in the state of Himachal Pradesh from the NHAI. The project involved Rehabilitation and Upgradation to Four Lane configuration and Strengthening the Border of Punjab/Himachal Pradesh of NH 20 (New NH 154) of the section from Pathankot to Mandi in Himachal Pradesh on Hybrid Annuity Mode (HAM).
- In March 2021, the company won two highway projects in West Bengal and Himachal Pradesh. With the entry in West Bengal and Himachal Pradesh, the company spread its footprints to 10 states across India.

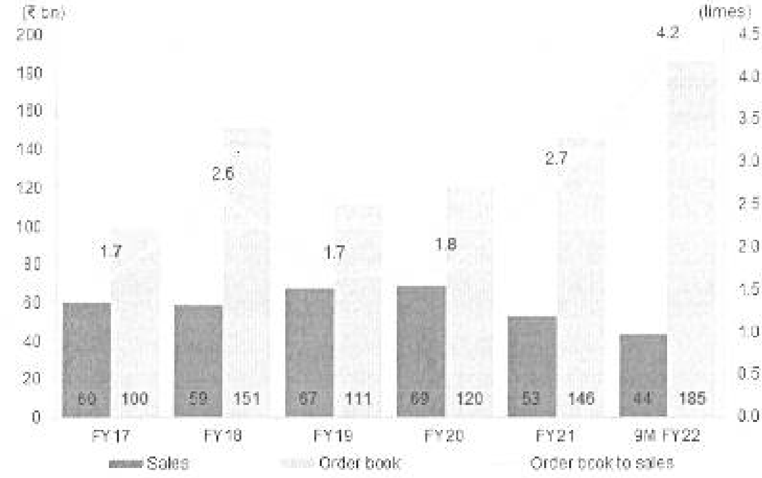
Capital expenditure plans

Operational Performance Status of HAM Project

Name of HAM stretch	Model	State	Project cost (Rs mn)	Concession period (years)	Date of Start
Vadodara – Kim 8 Lane Expressway	NHAI	Gujarat	20,430	15 Years over Construction Period	January 18, 2019
Vadodara - Mumbai 8 Lane Expressway	NHAI	Gujarat	17,020	15 Years over Construction Period	November 9, 2021
Pathankot Mandi	NHAI	Himachal Pradesh	8,280	15 Years over Construction Period	Appointed Date awaited
Chittoor Thachur	NHAI	Tamil Nadu	9,090	15 Years over Construction Period	FC is underway

Source: Company reports, CRISIL Research

Order book to sales trend



Source: Company reports, CRISIL Research

51.0 Company profiles: KNR Constructions Ltd.

Company overview/background

KNR Constructions Ltd (KNRCL) was established in 1995. It is a construction company with expertise in engineering, procurement and construction (EPC) services across roads and highways, irrigation and urban water infrastructure management. Its order book is dominated by road projects (75%), followed by irrigation. The company is an established player in the south, especially in Andhra Pradesh, Karnataka, Kerala, Telangana and Tamil Nadu, which account for 90% of its order book.

Content

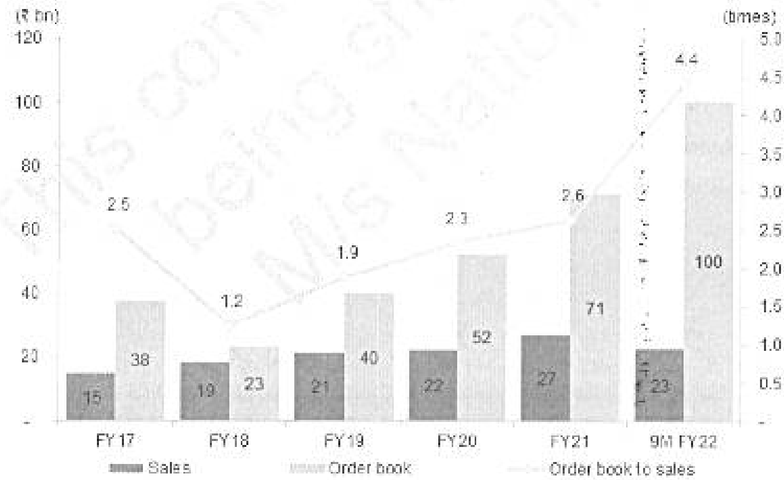
- Key/recent developments
- Operational Performance
- Portfolio mix

Key/recent developments

- In December 2021, the company has transferred its 49% stake in subsidiary company, KNR Shankarampet Projects (SPV) to Cube Highways and Infrastructure III. The transaction is contemplated to be completed in two stages, the first stage of transfer of 49% is under current intimation and the second stage scheduled to be completed after expiry of mandatory lock-in period as per the Concession Agreement subject to various regulatory approvals
- In August 2021, the Board of Directors of the company approved the dilution of its entire stake in three wholly owned subsidiary- KNR Shankarampet Projects, KNR Srirangam Infra, and KNR Tirumala Infra to Cube Highways and Infrastructure III Pte. Ltd and affiliates. The transaction will be based on the share purchase agreements
- In March 2021, the company bagged a Rs 1,100-cr contract for four-laning 48 km on National Highway 75 between BC Road and Periyashanthi (Dharmasthala Cross) proposed by the NHAI.
- In March 2021, the company received letter of acceptance for a road project in Kerala. The project involves six laning Ramanattukara Junction to start of Valanchery bypass section of NH-66 on Hybrid Annuity Mode under Bharatmala Pariyojana in Kerala.

Capital expenditure plans

Operational Performance Order book to sales trend



Source: CRISIL Research

Status of HAM projects:

	Particulars	Trichy to Kallagam	Chittoor to Mallavaram	Ramsanpalle to Mangloor	Magadi to Somwarpeth	Oddanchatram to Madathukulam	Ramanattukara to Valanchery	Valanchery to Kappirikkad	Chittoor to Thatchur
Project Detail	SPV Name	KNR Srirangam Infra	KNR Tirumala Infra	KNR Shankarampet Projects	KNR Somwarpeth Infra	KNR Palani Infra	KNR Ramanattukara Infra	KNR Guruvayur Infra	KNR Ramagiri Infra
	Stake	100%*	100%*	100%*	100%	100%	100%	100%	100%
	Project Type	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity	Hybrid Annuity
	State	Tamil Nadu	Andhra Pradesh	Telangana	Karnataka	Tamil Nadu	Kerala	Kerala	Andhra Pradesh
	Client	NHAI	NHAI	NHAI	KSHIP	NHAI	NHAI	NHAI	NHAI
	No of Lanes	Four	Six	Four	Two	Four	Six	Six	Six
	Length(KM)	29.7	61.1	46.3	166	45.0	39.7	37.4	34.7
Financials	Concession Period	17 Years	17.5 Years	17 Years	9 Years	17 Years	17.5 Years	17.5 Years	17 Years
	Bid Project Cost (Rs. Mn)	10,205	17337	12,540	11445	5203	23675	21,470.30	[illegible]
	Total Project Cost (Rs. Mn)	9,183	14655	10456	11276	7323	21900	19,594.30	0.0
	Grant (Rs. Mn)	4,713	9,326	4,306	7,485	3,045	15,250	9,745	0.0
	Estimated Equity (Rs. Mn)	992	1,965	1,361	1,221	985	2,268	2,002	0.0
	Estimated Debt (Rs. Mn)	3,520	4,128	4,793	2,570	2,173	4,300	8,234	0.0
Progress	Appointed Date	1st March 2019	4th January 2019	2nd May 2019	12th February 2020	5th October 2021	21st January 2022	21st January 2022	CA signed on 12th November 2021
	% Physical Progress	96.7%	59.6%	101.63%	21.90%	47.50%	3.09%	0.00%	0.00%
	Equity Invested (Rs. Mn)	7823	1517	1268	332	519	0.1	0.1	0.1
	Grant Received (Rs. Mn)	3,451	6,812	4,335	2,594	2,151	0.0	0.0	0.0
	Debt Already Drawn (Rs. Mn)	7,590	4,483	7,008	NA	NA	0.0	0.0	0.0

Source: CRISIL Research

52.0 Company profiles: Sadbhav Engineering Ltd.

Company overview/background

Sadbhav Engineering Ltd (SEL) was established by Shri Vishnubhai M Patel. It was incorporated as a private company October, 1988. The company is a leading engineering, procurement and construction (EPC) and infrastructure development company based in Ahmedabad. SEL is present in the roads and highways, irrigation and mining sectors. Through its subsidiary, Sadbhav Infrastructure Project Limited (SIPL), SEL is one of the largest build-operate-transfer players in India with 12 BOT projects of which eleven are fully operational and one is partially operational. operational projects in its portfolio. The company has successfully constructed 9,283 lane kms as of March 2019. SIPL went public in 2015.

Content

Key/recent developments

- In August 2021, the Adani Road Transport Limited (ARTL), a Wholly-owned Subsidiary of Adani Enterprises Limited has signed a definitive agreement with Sadbhav Infrastructure Project Limited (SIPL) to acquire 49% stake in Maharashtra Border Check Post Network Limited (MBCPNL) at an enterprise value of Rs1,680cr.
- In January 2021, the company bagged a Rs 779.73 crore contract from Gujarat Metro Rail Corporation (GMRC). The project includes construction of 11.6 km elevated viaduct from Kadarsha Ni Nal to Dream City deadend including a ramp for depot entry near Dream City and 10 stations for Surat Metro Rail project.
- Most of Sadbhav's Hybrid Annuity Model projects are facing delays by ~9 months attributable to various issues such as elongated monsoons and delinking and/or descoping approvals due to land acquisition issues.
- Three of its HAM projects - Vizag Port road, Bhimasur-Bhuj and Tumkur-Shivamogga Package -III were terminated due to land acquisition issues.

Capital expenditure plans

Equity infusion done/plan

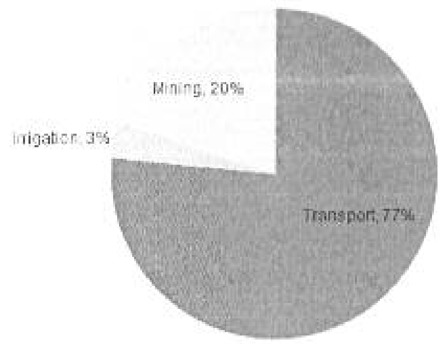
- In March 2021, the company informed the exchanges that the Finance and Investment Committee has approved allotment of 1,600 senior, secured, unrated, unlisted, redeemable, Nonconvertible Debentures (NCDs) to the applicants totally aggregating to Rs16 crore having a face value of Rs 1 lakh each on a Private Placement basis.
- In April 2021, the Finance and Investment Committee of the company approved allotment of 2,500 Senior, Secured, Unrated, Unlisted, Redeemable, Nonconvertible Debentures (NCDs) to the Applicants totally aggregating to Rs25 crore having face value of Rs 1 lakh each on Private Placement basis.

Operational Performance

List of active HAM projects

Source: CRISIL Research

Portfolio mix



Note: This is as per the latest available information

Source: CRISIL Research

53.0 Company profiles: Ashoka Buildcon Ltd.

Company overview/background

Established in 1976, Ashoka Buildcon (ABL) is an infrastructure development company with widespread presence in eleven states. It develops and builds infrastructure facilities on design, build, finance, operate and transfer (DBFOT) basis in the highways sector, and on engineering, procurement and construction (EPC) basis in the highways and power sectors. Ashoka Concessions Ltd. (ACL) was set up in November 2011 as a subsidiary of ABL, which transferred seven BOT projects to the former. SBI Macquarie infused Rs 800 crore through a stake dilution of 34% in ACL, which acts as an exclusive BOT project developer for both ABL and SBI Macquarie. All the HAM projects awarded to ABL have also been housed under ACL.

Content

- Key/recent developments
- Operational Performance
- Portfolio mix

Key/recent developments

- In April 2022, the company entered into a Share Purchase Agreement ("SPA") with National Investment and Infrastructure Fund Limited ("NIIF") and GVR Ashoka Chennai ORR Limited ("CORR") for the sale of 18,90,00,000 equity shares in CORR, constituting 100% of the share capital of CORR, from the Company to NIIF for an aggregate financial consideration of Rs686 crore subject to adjustment of cash and working capital, discharge of sponsor loans, settlement of trade payables and any recoveries made by the Tamil Nadu Road Development Corporation Limited, as agreed under the share purchase agreement

- In March 2022, the company received a letter of award (LoA) from NHAI to develop 6 lane access controlled greenfield highway -Baswantpur to Singondi section of national highway on Hybrid Annuity Mode (HAM) under Bharatmala Pariyojanal. The accepted bid project cost for the project is Rs 1,079 crore and construction period is 912 days from the appointed date

- In April 2021, the company emerged as the lowest (L-1) bidder for Gujarat Rail Infrastructure Development Corporation (G-RIDE) project, which has a quoted value of ~Rs 334 cr.

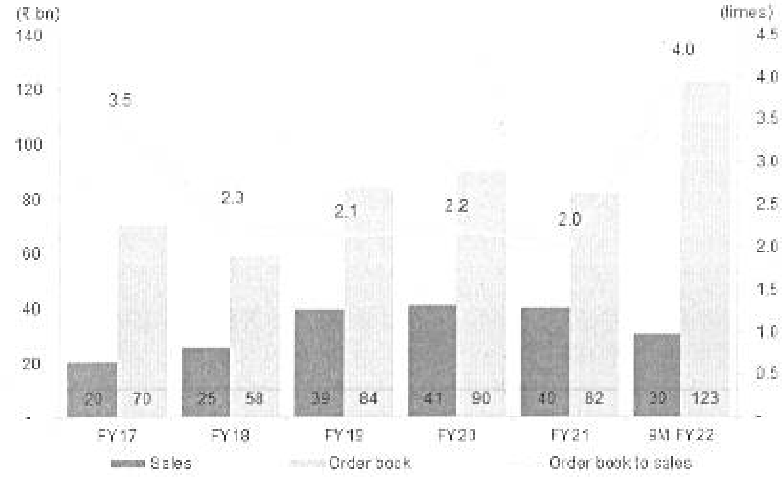
Capital expenditure plans

Operational Performance Status of Road projects

Projects	% Stake (ACL/ABL)	Status	TPC	Estimated Equity (including PIM)	Estimated Debt	Equity Invested (including PIM)*	Total Debt Drawn*
Kharar-Ludhiana	100%	COD(P)	14,500	2,100	6,000	2,106	5,680
Ranastalam-Anandpuram	100%	COD(P)	10,399	1,554	4,150	1,521	3,910
Vadodara Kim	100%	UC	14,831	2,083	6,000	2,052	4,926
Khairatunda-BarwaAdda	100%	UC	7,117	976	2,700	1,083	2,359
Belgaum-Khanapur	100%	UC	7,457	1,082	2,950	781	1,458
Tumkur-Shivamogga–II	100%	UC	10,519	1,340	3,850	905	2,008
Tumkur-Shivamogga–I	100%	UC	7,406	908	2,750	602	1,520
Kandi-Ramsanpalle	100%	UC	7,249	899	2,350	509	390
Tumkur-Shivamogga–IV	100%	UFC	11,266	1,438	4,300	21	-
Tumkur-Shivamogga–III	100%	UFC	7,549	908	2,500	19	-
Total			98,293	13,368	37,550	9,600	22,261

Source: Company reports, CRISIL Research

Order book to sales trend



Source: Company reports, CRISIL Research

54.0 Company profiles: Dilip Buildcon Limited

Company overview/background

Dilip Buildcon is promoted by Mr Dilip Suryavanshi and his family. The company was set up as a proprietorship firm (Dilip Builders) in fiscal 1989, reconstituted as a private limited company in 2006 and then as a public limited company in fiscal 2017. The company, based in Bhopal, undertakes road construction on an engineering, procurement and construction (EPC) basis and road development on a build operate transfer (BOT) basis. It also provides EPC services across bridges, buildings, dams, canals, water supply & mining. The company has presence across 17 states and a strength of 35,365 employees. It owns construction equipment vehicles with a fleet size of 11,673 vehicles as of June 2019. Till date the company has executed over 100 EPC projects and laid 15,000 kms of road since its inception.

In August 2017, Dilip Buildcon had announced 100% stake sale in its 24 road projects (18 operational, 6 under construction HAM as of January 2019) portfolio to the Shrem group for Rs 16,020 mn, out of which it expects to receive Rs 8,140 mn from stake sale of its 18 operational SPVs and balance Rs 7,880 mn towards the 6 under construction HAM projects.

Content

- Key/recent developments
- Operational Performance
- Portfolio mix

Key/recent developments

- In April 2022, the company has been declared as L-1 bidder for the tender floated by the National Highways Authority of India on Hybrid Annuity basis in the state of Jharkhand.The project is for Four Laning of Mehgama-Hansdiha section of NH-133 with a bid project is Rs976 crore and expected completion period is 24 months
- In April 2022, the company has received a provisional completion certificate for Bellary to Byrapura Section in Karnataka
- In April 2021, the company's board of directors approved the issue and allotment of 94.45 lakh equity shares at issue price of Rs 540 per unit including a premium of Rs 530 against the floor price of Rs 568.41 per share aggregating to more than Rs 510 cr.
- In March 2021, the company won a Rs 1,137 cr contract from NHAI in Karnataka under Bharatmala Pariyojana.

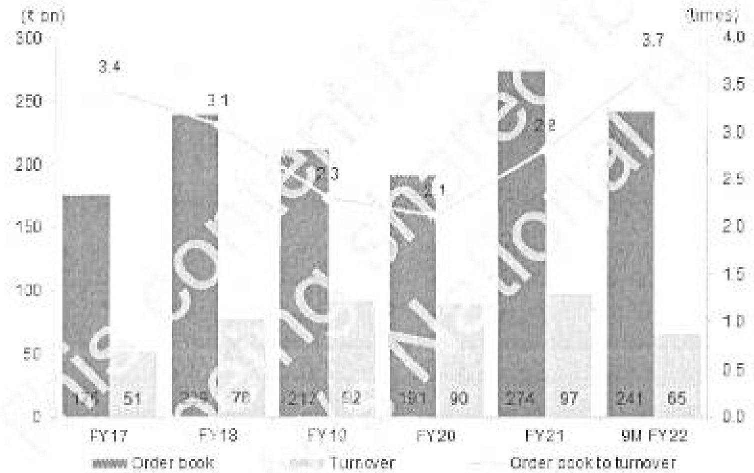
Capital expenditure plans

Operational Performance HAM projects - current status

Project Name	Payment Milestone	Appointed Date	Work done as on Jan 2022
DBL Byrapura Challakere Highways Pvt Ltd	PCOD achieved on 15.12.2020	Dec-2018	100%
DBL Borgaon Watambare Highways Pvt. Ltd.	PCOD achieved on 24.09.2021	Apr-2019	98%
DBL Gorhar Khairatunda Highways Pvt. Ltd.	PCOD achieved on 16.10.2021	Jul-2019	98%
DBL Anandpuram Anakapalli Highways Pvt. Ltd	PCOD achieved on 08.11.2021	Jan-19	89%
DBL Mangalwedha Solapur Highways Pvt. Ltd.	PCOD achieved on 14.12.2021	May-2019	99%
DBL Mangloor Highways Pvt. Ltd.	PCOD achieved on 15.12.2021	Apr-2019	99%
DBL Chandikhole Bhadrak Highways Pvt. Ltd.	3rd PM, 50% Physical Progress	Dec-2018	73%
DBL Rewa Sidhi Highways Pvt. Ltd	4th PM, 75% Physical Progress	Dec-2018	90%
DBL Bangalore Nidagatta Highways Pvt. Ltd	4th PM, 75% Physical Progress	May-2019	90%
DBL Sangli Borgaon Highways Pvt. Ltd	4th PM, 75% Physical Progress	May-2019	80%
DBL Bellary Byrapura Highways Pvt. Ltd	5th PM, 90% Physical Progress	Oct-2019	96%
DBL Nidagatta Mysore Highways Pvt Ltd	4th PM, 75% Physical Progress	Dec-2019	84%
Pathrapali Kathghora Highways Private Limited	2nd PM, 30% Physical Progress	Dec-2020	40%
Dodaballapur- Hoskote Highways Private Limited	2nd PM, 30% Physical Progress	Feb-2021	42%
Repallewada Highways Private Limited	2nd PM, 30% Physical Progress	Mar-2021	36%
Narenpur Purnea Highways Private Limited	1st PM, 10% Physical Progress	Mar-2021	23%
Dhrol Bhadra Highways Private Limited	1st PM, 10% Physical Progress	Oct-2021	10%
Bangalore Malur Highways Private Limited	1st PM, 5% Physical Progress	Sep-2021	7%
Malur Bangarpet Highways Private Limited	1st PM, 5% Physical Progress	Sep-2021	7%
DBL Viluppuram Highways Private Limited	-	Nov-2021	4%
DBL Poondiyankuppam Highways Private Limited	-	Nov-2021	3%
Sannur Bikarnakatte Highways Private Limited	-	Awaited	-
Bangalore Chennai Expressway Phase 2 Package 3	-	Awaited	-

Source: Company reports, CRISIL Research

Trend in order book and turnover



Source: Company reports, CRISIL Research

55.0 Company profiles: Larsen & Toubro Ltd

Company overview/background

Larsen & Toubro Ltd, incorporated in 1946, is the largest engineering and construction company in India. It is a global conglomerate with presence in over 30 countries, engaged in engineering, construction, manufacturing and financial services. The company executes engineering, procurement and construction (EPC) projects across multiple segments, including, roads, power, ship building and ports.

The company has exposure to infrastructure build-operate-transfer (BOT) projects in roads, power transmission and distribution (T&D), ports, metro rail and real estate. Through its subsidiaries, such as L&T Realty and L&T Hydrocarbons, the company has diversified into real estate and hydrocarbons. It also has a presence in financial services and the IT/ITeS sectors through wholly owned subsidiaries, L&T Finance, L&T Infrastructure Finance and L&T InfoTech.

Content

Key/recent developments

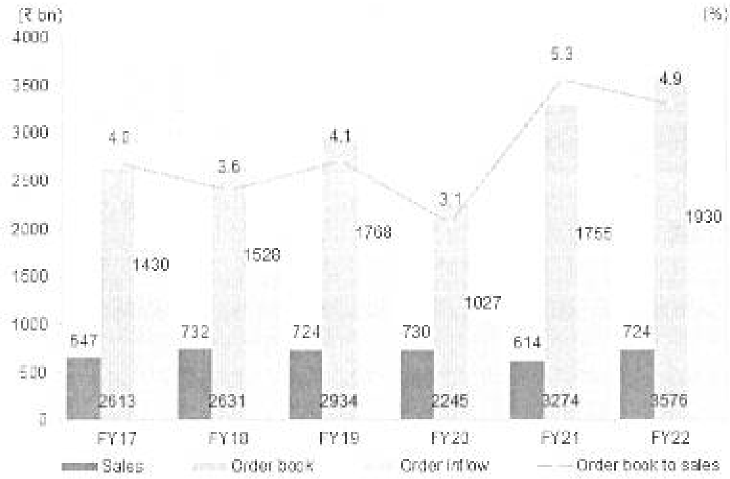
- In April 2022, the companysecured an order from the Tamil Nadu Road Infrastructure Development Corporation to construct the Chennai Peripheral Ring Road EPC-02 Package of Section-II in the Engineering, Procurement and Construction (EPC) mode. The scope of work broadly includes constructing a six-lane greenfield highway of 12.80 kilometres
- In January 2021, the Heavy Civil Infrastructure business of L&T Construction secured a contract from two packages [P4(X) & P4(Y)] of the Mumbai Ahmedabad High Speed Rail Corridor to procure, fabricate, assemble, paint and transport 28 bridges - steel truss superstructures with bearings - to various sites that will cross over roads/ rivers/ railway lines and other structures.

Rgulatory development

- In August 2021, L&T received shareholders' nod to raise up to Rs 4,500 crore through issuance of convertible bonds.

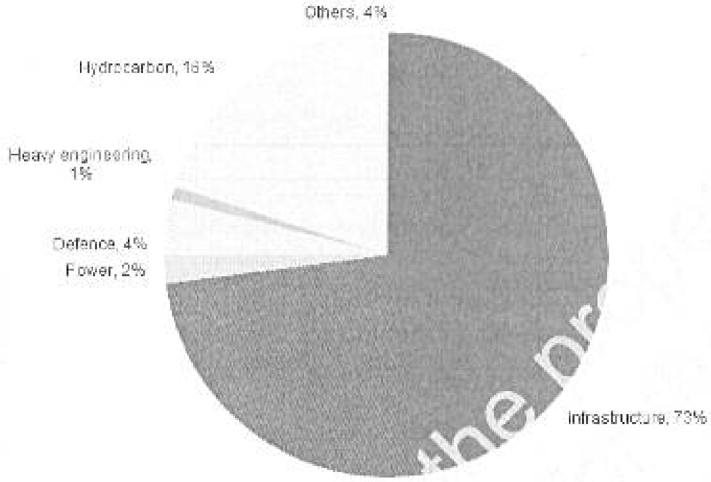
Capital expenditure plans

Operational Performance L&T mix is order book composition as on March 2022



Source: CRISIL Research

Segment revenue (March 2022)



Source: CRISIL Research

56.0 Company profiles: PNC Infratech

Company overview/background

PNC Infratech is an India-based infrastructure construction, development and management company. It executes infrastructure projects, including highways, bridges, flyovers, power transmission lines, airport runways, and industrial area development and has expertise in engineering, procurement and construction (EPC) projects in roads and highways.

Content

Key/recent developments

- In Feb 2022, construction of six lane road of Package-I of Kanpur-Lucknow Expressway of 17.15 kilometre (km) length and Package-II of the same Expressway of length 45.24 km. The company bid a project cost of Rs 1,413 crore for the former and Rs 1,513 crore for the latter. Both the projects have to be constructed in 30 months.
  Besides, the company also emerged as the lowest bidder for four laning of Sonauli-Gorakhpur section of NH-29E in Uttar Pradesh for a length of 79.54 km. The project cost is Rs 1,458 crore and is to be completed in 24 months
- In Feb 2022, the company bagged a new hybrid annuity highway project of Rs 885 crore from NHAI. The Project is of length 32.98 kms, requiring four laning of Mathura Bypass to Gaju Village section
- PNC Infratech has 11 Hybrid Annuity Model projects under its portfolio of which 6 are under construction and two are awaiting appointed date. Apart from this the company received PCOD in February 2020 for the Dausa Lalsot Kathun project while financial closure is in progress for the Jagdishpur Faizabad and Meerut Nazibabad projects.

Capital expenditure plans

Operational Performance

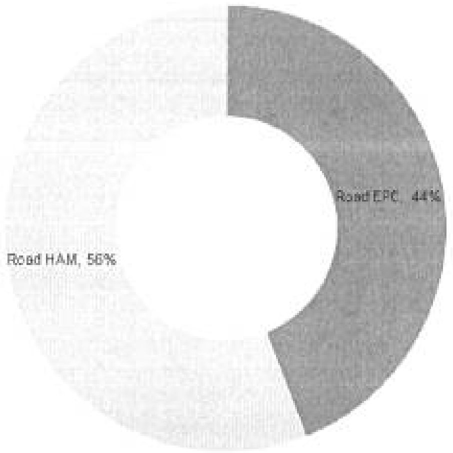
PNC Infratech's HAM portfolio:

Award Date	Length (kms)	Awarded cost (Rs. Mn.)	Project Name	State Name	Project Status Name
30-Jul-2016	83	8,200	Dausa - Lalsot - Kauthun	Rajasthan	Completed
06-Mar-2017	73	14,340	Chitradurga -Davanagere	Karnataka	Under Construction
24-Mar-2017	77	14,100	Jhansi - Khajuraho (Package I)	Uttar Pradesh	Under Construction
24-Mar-2017	85	13,100	Jhansi - Khajuraho (Package II)	Uttar Pradesh	Under Construction
13-Nov-2017	145	20,183	Chakeri - Allahabad	Uttar Pradesh	Under Construction
17-Mar-2018	45	11,970	Aligarh - Kanpur (Package-II : Bhadwas-Kalyanpur)	Uttar Pradesh	Completed
01-Jun-2018	56	10,128	Challakere - Hariyur Section	Karnataka	Under Construction
27-Feb-2020	70	16,020	Unnao - Lalganj Section	Uttar Pradesh	Under Construction
09-Mar-2020	61	20,520	Aligarh - Kanpur (Pacakage V : Mitrasen-Kanpur)	Uttar Pradesh	Under Construction
09-Mar-2020	60	15,300	Jagdishpur-Faizabad Section	Uttar Pradesh	Under Construction
23-Jun-2020	54	14,120	Meerut - Nazibabad	Uttar Pradesh	Under construction

Source: Company reports, CRISIL Research

Portfolio mix

Road EPC projects constitute 44% of the order book, which stood at Rs 14,600 cr as on March 2021



Note: The player profile will be updated by 15 June 2022.

57.0 Peer comparison

Peer comparison

Financial indicators

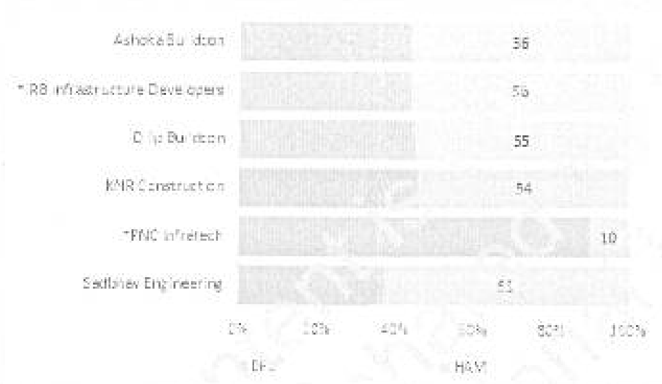
Key Financial Indicators	Unit	Ashoka Buildcon	Dilip Buildcon	IRB Infrastructure Developers*	KNR Construction	PNC Infratech	Sadbhav Engineering
Operating margin	%	14.4	16.0	26.0	19.8	13.7	14.0
Net margin	%	10.7	3.5	12.3	9.0	7.3	2.5
RoCE	%	20.6	16.4	8.3	23.6	20.1	6.0
Current ratio	Times	1.2	1.2	0.6	1.7	2.2	1.5
Interest coverage ratio	Times	8.6	2.6	0.9	12.0	9.7	1.2
Gearing ratio	Times	0.1	0.7	0.6	0.0	0.1	0.6

*Note: - *As of FY22, others as of FY21*

Source: CRISIL Research

Order book is an important indicator of a company's financial capabilities and operational expertise. It shows the number of orders and their value.

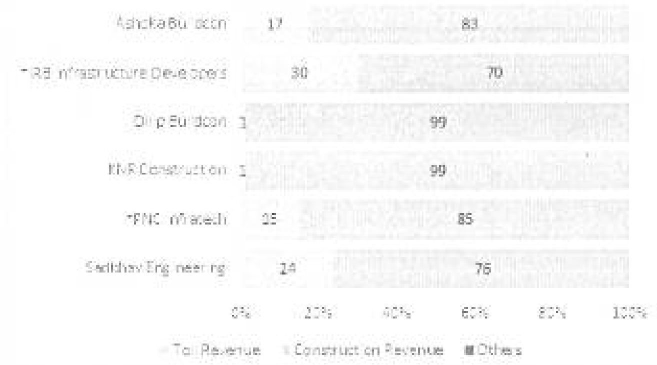
Order book break-up



*Note: *HAM project includes BOT projects for Sadbhav Engineering and IRB Infra. Note: *IRB Infra and PNC Infratech as of fiscal 2022, others as of fiscal 2021*

Source: CRISIL Research

Segmental revenue break-up



*Note: *Data for IRB Infra and PNC Infratech is as of fiscal 2022, others as of fiscal 2021 ii) Consolidated revenue is used*

Source: CRISIL Research

In terms of BOT projects IRB infrastructure developers has higher share of revenue from toll collection. Plus, it has indicated interest in bidding for future BOT proejcts once NHAI is able to revive BOT awarding.

All players have seen a sharp fall in toll revenue collection in the first quarter of fiscal 2021 due to nation-wide lockdown.

58.0 Benchmarks: New project

Operational parameters

Gestation period

The National Highways Authority of India (NHAI) awards projects that can be completed in two-and-a-half to three years. However, depending on the project model, the time between awarding and completion varies.
For engineering-procurement-construction (EPC) projects, construction typically begins within two-three months of awarding. For build-operate-transfer (BOT) projects (toll, annuity, hybrid annuity model or HAM), construction takes longer to start as the developer requires time to source funds and achieve financial closure. The appointed date (date from which construction can begin) can take as long as 10-12 months in some cases, especially for HAM which is a comparatively new public-private partnership (PPP) model. Achieving financial closure takes time on account of lenders apprehension towards lending to the sector.

Key economic size

Bharatmala Pariyojna

Bharatmala Pariyojna (BMP) scheme is an umbrella project of the central government since 2015, that aims to improve efficiency in the roads sector. it is expected to supersede the National Highways Development Project (NHDP) and envisage the construction of 65,000 kms of highways under the following categories: national corridor (north-south, east-west, and golden quadrilateral), economic corridor, inter-corridor roads and feeder roads. As per the ministry, Bharatmala, along with the schemes undertaken, could require a total outlay of Rs 6.9 trillion.

Phase-I of the scheme envisages development of about 24,800 km of national highways/ roads, plus residual 10,000 km of NHDP between fiscal 2018 to 2022. Awarding under BMP has begun from fiscal 2018 and we believe it will stretch at least till fiscal 2025 for Phase-I.

Status of Bharatmala scheme

		2017-18		2018-19		
	Overall target (Km)*	Awarding (km)	Amount (Rs mn)	Awarding (km)	Amount (Rs mn)	**Cost/km (Rs mn)**
Balance road work under NHDP	10,000	3,411	7,21,368	661	1,05,773	194
Bharatmala-Border & International Connectivity Roads	2,000	761	37,651	-	-	49
Bharatmala-Coastal & Port Connectivity Roads	2,000	76	7,406	72	10,247	118
Bharatmala-Economic Corridor	9,000	1,035	2,96,744	379	30,634	231
Bharatmala-Expressways	800	124	89,564	177	60,367	498
Bharatmala-Inter-corridor & Feeder Roads	6,000	236	49,241	267	54,288	206
Bharatmala-National Corridor Efficiency Improvements	5,000	260	49,291	317	49,624	171
Bharatmala others	-	1,489	1,51,848	149	36,915	115
Total	34,800	7,394	14,03,113	2,222	3,48,748	

*Note: *24,800 km of BMP and 10,000 km of residual NHDP to be constructed by fiscal 2022 under phase 1*

Source: NHAI, CRISIL Research

National Highway Development Project

The National Highway Development Project was launched in 2000 to for development of roads in various parts of the country. The project implemented by NHAI, aimed to construct more than 30,000 km of road in seven phases.

The scheme is now replaced by Bharatmala pariyojana scheme. As of June 2019, 5,000-5,500 km of NHDP remains awarded.

NHDP phases

NHDP phases	Stretches	Cost/Km (Rs mn)
I	Golden Quadrilateral (GQ) – which connects Delhi, Kolkata, Mumbai and Chennai	
II	Connects North-South & East-West Corridor, ports connectivity & others	257
III	Connecting state capital, economic important places and tourist places	142
IV	Improved two-lane standards with paved shoulders	144
V	Six-laning of national highways; 6,500-km stretch under GQ is considered	183
VI	Owing to construction of expressways, the cost/km is higher than all other NHDP phases. Expressways have wider routes, cement pavements and higher standard of construction, leading to higher cost/ km	683
VI	Construction of ring roads	192

Source: NHAI, CRISIL Research

Status of NHDP as of FY18

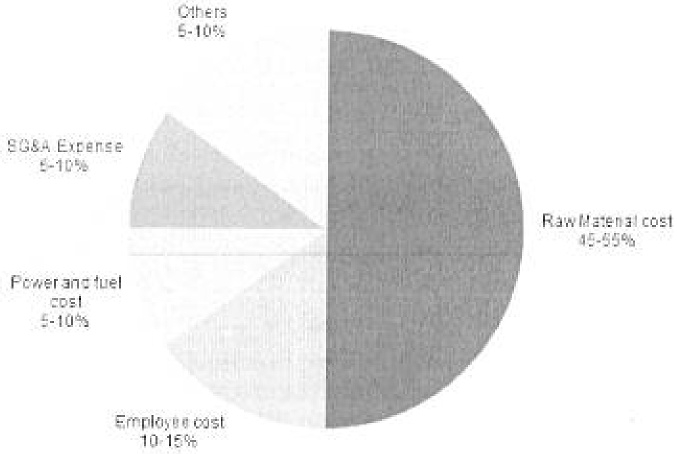
	2015-16		2016-17		2017-18		
	Awarding (Km)	Total Project cost (Rs. Millions)	Awarding (Km)	Total Project cost (Rs. Millions)	Awarding (Km)	Total Project cost (Rs. Millions)	Cost/km (Rs. Millions)
Phase I	-	-	-	-	-	-	-
Phase II	336	111,220	208	31,110	218	53,204	257
Phase III	1067	144,010	486	74,330	730	105,475	142
Phase IV	2533	318,760	2608	325,055	954	234,808	144
Phase V	135	30,970	983	136,590	618	150,287	183
Phase VI	62	25,540	20	14,010	61	51,340	683
Phase VII	62	11,370	32	840	158	36,130	192

Note: i) Numbers mentioned are for phases I-VII of NHDP ii) Cost/km numbers are average for FY16, FY17 and FY18 iii) FY18 nos are based on numbers available is not an exhaustive list

Source: NHAI, CRISIL Research

59.0 Benchmarks: Operating costs

Cost break-up



Note: Cost breakup for bitumen roads

Source: CRISIL Research

Raw materials (bitumen, cement and aggregates material) comprise 45-55% of overall cost. Employee cost (10-15%) includes recruiting & technical assistance fees, and employee wages. 60% of NHAI projects are bitumen based and rest are cement based. State and Rural roads, however, are largely bitumen based.

Payment from NHAI in HAM and EPC projects are adjusted based on price index. Hence, any change in raw material cost will be passed on to the authority for NHAI projects in case of HAM and EPC.

However, for BOT projects, the volatility in raw material prices is a risk for developers as it has to absorbed by them.

60.0 Operational data : Road network

Road network | Targets and achievements of MORTH

Targets and achievements for MORTH

Year	Targets for construction in km	Achievement in km
2011-12	5824	5013
2012-13	6187	5732
2013-14	6330	4260
2014-15	6300	4410
2015-16	10950	6143
2016-17	15000	8231
2017-18	15000	9829
2018-19	16420	10855
2019-20	11000	10237
2020-21	11000	13286

N.A.- Not Available

Source: PIB, CRISIL Research

Road network | Capacity of national highways

Percentage of National Highway in terms of width

Width of carriageway	National Highways length (2010-11)		National Highways length (2011-12)		National Highways length (2012-13)		National Highways length (2015-16)	
	(km)	(per cent)	(km)	(per cent)	(km)	(per cent)	(km)	(per cent)
Four / Six / Eight - lane	16,187	22.8	17,700	24.7	19,128	24.2	24,705	24.5
Two-lane	36,995	52.2	38,536	53.7	40,658	51.4	55,603	55.0
One-lane	17,752	25.0	15,536	21.6	19,330	24.4	20,703	21.0
Total	70,934	100.0	71,772	100.0	79,116	100.0	1,00,475	100.0

Note -2013-14 and 2014-15 data is not available

Source: PIB, CRISIL Research

State-wise road length in relation to area and population

	Total road length (kms)	Road length		Total length of national highways (kms)	Road length	
		Per 100 sq kms of area	Per one lakh of population		Per 100 sq kms of area	Per one lakh of population
STATES						
Andhra Pradesh & Telangana	2,97,939	108.3	352.3	10,170	3.0	9.6
Arunachal Pradesh	30,692	36.7	2,218.1	2,537	3.0	181.6
Assam	3,29,520	420.1	1,056.0	3,845	4.9	12.2
Bihar	2,06,484	219.3	198.4	4,839	5.1	4.6
Chhattisgarh	95,809	70.9	375.1	3,523	2.3	12.0
Goa	16,063	433.9	1,101.3	292.9	7.1	18.0
Gujarat	1,79,144	91.3	296.4	5,456	2.5	8.2
Haryana	48,482	109.7	191.2	2,741	5.9	10.3
Himachal Pradesh	55,759	100.2	812.3	2,643	4.7	38.[illegible]
Jammu & Kashmir	49,716	22.4	396.4	2,601	1.2	20.7
Jharkhand	66,786	83.8	202.5	2,661	3.3	8.0
Karnataka	3,45,515	180.2	565.5	6,931	3.4	10.6
Kerala	2,00,808	516.9	601.1	1,782	4.7	5.4
Madhya Pradesh	2,89,940	94.1	399.2	8,053	1.7	7.2
Maharashtra	6,13,418	199.3	545.9	16,239	2.4	6.6
Manipur	24,776	111.0	867.6	1746.7	7.8	61.1
Meghalaya	21,727	96.9	732.3	1204.4	5.4	40.5
Mizoram	8,108	38.5	739.0	1422.5	6.6	125.9
Nagaland	36,114	217.8	1,825.3	1546.7	6.9	58.1
Odisha	2,88,083	185.0	686.3	5,413	3.1	11.5
Punjab	1,08,379	215.2	390.6	3,228	5.5	10.0
Rajasthan	2,54,279	74.3	370.9	8,972	2.3	11.6
Sikkim	8,243	116.2	1,350.0	463	6.5	75.8
Tamil Nadu	2,61,035	200.7	361.8	5,918	3.8	6.9
Tripura	39,365	375.4	1,071.5	853.8	7.7	21.9
Uttar Pradesh	4,22,412	175.3	211.4	9,017	3.5	4.2
Uttarakhand	61,018	114.1	605.0	2,842	5.1	26.9
West Bengal	3,16,730	356.9	347.0	3,004	3.3	3.2
UNION TERRITORIES						
Andaman & Nicobar Islands	1,495	18.1	392.3	330.7	4.0	87.0
Chandigarh	2,821	2,474.6	267.3	15.3	13.2	1.4
Dadra & Nagar Haveli	1,134	231.0	323.9	31	6.3	9.0
Daman & Diu	496	446.8	203.9	22	19.8	9.0
Delhi	17,625	1,188.5	105.0	78.9	5.4	0.5
Lakshadweep	209	696.7	324.2	0	-	-
Puducherry	3,174	647.8	254.3	64	13.1	5.1
All INDIA (excluding JRY Roads)	47,03,296	143.1	388.4	1,20,543	3.1	8.3

Note: Road lengths are as of March 2018, area and population as per Census 2011

Source: MORTH

Road network | Bharatmala Phase-wise awarding

Bharatmala (BMP) Phase-wise awarding

(Unit: KM)	2018-22 BMP Phase-1 target construction	2017-18 Awarding	2018-19 Awarding	2019-20 Awarding	2020-21 Awarding	2021-22 Awarding
Balance road work under NHDP	10,000	3,411	861	-	-	-
Bharatmala-Border & International Connectivity Roads	2,000	761	-	-	-	-
Bharatmala-Coastal & Port Connectivity Roads	2,000	78	72	-	-	-
Bharatmala-Economic Corridor	9,000	1,035	379	-	-	-
Bharatmala-Expressways	800	124	177	-	-	-
Bharatmala-Inter-corridor & Feeder Roads	6,000	236	267	-	-	-
Bharatmala-National Corridor Efficiency Improvements	5,000	260	317	-	-	-
Bharatmala others	-	1,489	149	-	-	-
Total	34,800	7,394	2,222	3,211	4,818	6,306

Source: National Highways Authority of India

Road network | Addition to National Highway Length (planwise)

Addition to National Highway Length (planwise)

(kms)	Length added	Total length
As on 1.4.1947	-	21,440
Pre First Plan (1947-1951)	815	22,255
First Plan (1951-1956)	-	22,255
Second Plan (1956-1961)	1,514	23,769
Third Plan (1961-1966)	179	23,948
Interregnum period (1966-1969)	52	24,000
Fourth Plan (1969-1974)	4,819	28,819
Fifth Plan (1974-1978)	158	28,977
Interregnum period (1978-1980)	46	29,023
Sixth Plan (1980-1985)	2,687	31,710
Seventh Plan (1985-1990)	1,902	33,612
Interregnum period (1990-1992)	77	33,689
Eighth Plan (1992-1997)	609	34,298
Ninth Plan (1997-2002)		
1997-1998	4,219	38,517
1998-1999	11,068	49,585
1999-2000	2,425	52,010
2000-2001	5,727	57,737
2001-2002	375	58,112
Tenth Plan (2002- 2007)		
2002-2003	-	58,112
2003-2004	7,457	65,569
2004-2005	-	65,569
2005-2006	1,551	67,120
2006-2007	-520	66,590
Eleventh Plan (2007-2012)		
2007-2008	164	66,754
2008-2009	3,794	70,548
2009-2010	386	70,934
2010-2011	n.a	70,934
2011-2012	n.a	71,772
Twelfth Plan (2013-2017)		
2012-13	n.a	79,116
2013-14	n.a	92,851
2014-15	n.a	96,214
2015-16	n.a	1,00,475
2016-17	3,458	1,03,933
2017-18	16,610	1,20,543

n.a. Not Available

Note: Length of National highways denotified during Xth plan in year 2006-07 is 530 km.

Source: National Highways Authority of India, Ministry of Road Transport and Highways (MORTH) & CRISIL Research

Road network | India: Existing road network (National highways, their length)

India: Existing road network (National highways, their length) - As on 2020-21

Name of State / UTs	National Highway No.	Total Length (in km)
Andhra Pradesh	16, 216, 216A, 716, 26, 326, 326A, 30, 40, 140, 340, 340C, 42, 44, 544D, 150A, 65, 165, 516D, 565, 765, 67, 167, 69, 71, 75, 167A, 516E, 167B, 365BB, 365BG, 544DD, 544E, 130CD, 716A, 716B, 516C, 167BG, 544F, 167K, 342, N E7 167BG, 69, 71, 75	7339.95
Arunachal Pradesh	13, 113, 313, 513, 713, 713A, 15, 115, 215, 315, 315A, 415, 515,	2,537.39
Assam	2, 702, 702C, 702D, 6, 306, 8, 208A, 15, 115, 215, 315, 315A, 415, 515, 715, 7 15A, 17, 117, 117A, 217, 27, 127, 127A, 127B, 127C, 127D, 127E, 427, 627, 29, 129, 329, 329A, 37, 715K	3,935.91

Bihar	19, 119, 219, 319, 20, 120, 22, 122, 122A , 322, 722, 922, 27, 227, 227A, 327, 327A, 527, 527A, 527B, 527C, 527D, 727, 727A, 31, 131, 131A , 231, 331, 431, 531, 33, 133, 133B, 333, 333A, 333B, 139, 124C, 227F, 227J, 227L, 727AA, 133E, 122B, 333C, 527E, 327AD, 319A, 131B, 131G	5,420.78
Chandigarh	5	15.28
Chhattisgarh	30, 130, 130A, 130B, 130C, 130D, 930, 43, 343, 45, 49, 149B, 53, 153, 353, 63, 163, 163A, 130CD, 143B,	3,620.45
Delhi	9, 44, 48, 248BB, 148A, 248BB, 709B, 344M, 148AE, 148NA, 344N, 3 44P, NE3	157.1
Goa	748, 66, 366, 566, 748AA, 166S	299.3
Gujarat	27, 927D, 41, 141, 341, 47, 147, 48, 848, 848A, 848B, 51, 151, 251, 351, 53, 753B, 953, 56, 58, 64, 68, 168, 168A, 756, 148M, 751D, 751DD, 351F, 147D, 751, 151A, 148N, 754K, NE1, NE4, 351K, 351G, 151K, 848K, 151AD, 927C, 927K, 351K, 351G, 151K, 848K, 151AD, 927C, 927K	7,744.00
Haryana	703, 5, 105, 7, 907, 9, 709, 709A, 11, 919, 334B, 44, 344, 444A, 48, 148A, 148B, 248A, 52, 152, 352, 352A, 54, 254, 248BB, 152A, 907G, 352R, 352W, 709AD, 334D, 148N, 152D, 148NA, 344N, 344P, NE2, NE5,	3,236.70
Himachal Pradesh	3, 103, 303, 503, 503A, 5, 105, 205, 305, 505, 505A, 705 , 7, 707, 907, 907A, 44, 154, 154A	2,[illegible]96.88
Jammu & Kashmir and Ladakh	1, 301, 501, 701, 3, 44, 244, 144, 144A, 444, 244A, 701A,	2,423.21
Jharkhand	114A, 18, 118, 19, 419, 20, 220, 320, 22, 522, 33, 133, 133A, 133B, 333, 333A, 39, 139, 43 143, 143A, 343, 49, 143H, 143D, 320G, 143AG, 320D, 218, 143B	3,366.76
Karnataka	44, 48, 648, 748, 948, 50, 150, 150A, 52, 160, 65, 66, 766, 766C, 67, 167, 367, 69, 169, 169A, 369, 73, 173, 75, 275, 181, 166E, 548B, 561A, 752K,161A, 544DD, 544E, 548H, 748AA, 367A, 948A, 369E, 373, 275K, 766E, 766EE, NE7	7,412.05
Kerala	544, 744, 66, 766, 966, 966 A, 966 B, 183, 183A, 85, 185	1,781.57
Madhya Pradesh	719, 27, 927A, 30, 34, 934, 135, 135B, 39, 339, 339B, 539, 43, 543, 943, 44, 45, 46, 146, 146B, 346, 47, 347, 347C, 347B, 547, 52, 552, 752B, 752C, 56, 548C, 752G, 161G, 347A, 753L, 147E, 135BB, 135BD, 135BG, 135C, 347BG, 552G, 148N, 148NG	8,940.54
Maharashtra	130D, 930, 543, 44, 47, 347C, 547, 48, 348A, 348, 548, 848, 848A, 50, 150, 52, 53, 353C, 353D, 353E, 753, 753A, 753B, 953, 60, 160, 61, 161, 361, 63, 65, 965, 65, 166, 166A, 548C, 753E, 548E, 752G, 561, 753F, 548A, 166E, 266, 548B, 548CC, 161H, 161G, 361H, 548D, 561A, 965C, 752I, 965G, 752K, 347A, 930D, 361B, 353B, 247, 161A, 361C, 161E, 353I, 753J, 753L, 353J, 353K, 752E, 752H, 753M, 548H, 160A, 160B, 753C, 965D, 753DB, 160D, 348B, 348BB, 763AB, 160C, 165H, 761, 753H, 166D, 652, 465, 647, 461B, 160H, 361F, 965DD, 166F, 166G, 548DD, NE4, 547E	17,930.60
Manipur	2, 102, 202, 102A, 102B, 102C, 29, 129A, 37, 137, 137A	1,750.34
Meghalaya	6, 106, 206, 217, 127B	1,155.60
Mizoram	2, 102B, 302, 502, 502A, 6, 306, 306A, 108	1,422.50
Nagaland	2, 202, 702, 702A, 702B, 702D, 29, 129, 129A, 229, 329A	1,547.68
Odisha	16, 316, 516, 18, 20, 220, 520, 26, 326, 326A, 130C, 143, 49, 149, 53, 153B, 353, 55, 57, 157, 59, 63, 126, 130CD, 316A, 516A, 157A, 126A, 655, 720, 143H, 320D,	5,897.08
Puducherry	32, 332	64
Punjab	3, 503, 503A, 703, 703A, 5, 205, 205A, 7, 9, 44, 344, 344A, 344B, 148B, 52, 152, 54, 154, 154A, 254, 754, 62, 354, 148BB, 105B, 152A, 703B, 354E, 354B, 703AA, NE5, NE5A , 503D, 754A, 754AD, 205K	4,099.12
Rajasthan	709, 11, 919, 21, 23, 123, 25, 125, 325, 27, 927A, 44, 48, 148, 148B, 148D, 248, 248A, 448, 52, 552, 752, 54, 56, 156, 58, 158, 458, 758, 62, 162, 162A, 68, 168, 168A, 964, 311, 921, 70, 925, 925A, 911, 552G, 148N, 754K, 911A, 148C, 968, 148NG	10,350.12
Sikkim	10, 310, 310A, 710, 510, 717A, 717B, 310AG	709.07
Tamil Nadu	16, 716, 32, 132, 332, 532, 36, 136, 336, 536, 38, 138, 40, 42, 44, 544, 544, 944, 48, 648, 948, 66, 75, 77, 79, 81, 181, 381, 83, 183,85, 87, 544H, 179A, 383, 381, 381B, 785, 716, 744A, 948A, 136B,179B, 132B, 179D, 332A, 844, 716B,	6,858.14
Telangana	30, 44, 150, 353C, 61, 161, 63, 163, 563, 65, 365, 365A, 365B, 363, 565, 765, 167, 353B, 161B, 365BB, 365BG, 765D, 161AA, 161BB, 167K	3,973.66
Tripura	8, 108, 108A, 108 B, 208, 208A	853.81

Uttar Pradesh	307, 9, 509, 709A, 19, 219, 519, 719, 21, 123, 24, 27, 2 27A, 727, 727A, 927, 28, 128, 30, 230, 330, 330B, 530, 330A , 730, 730A , 31, 731, 731A, 931, 931A, 34, 334, 334A, 334B, 334C, 534, 734, 234, 35, 135, 135B, 335, 39, 339, 539, 44, 344, 552, 709B, 135BB, 730H, 321, 731AG, 709AD, 319D, 124C, 727B, 727H, 727G, 128B, 128C, 328, 328A, 330D, 530B, 730B, 731K, 727BB, 730S, 730C, 334D, 128A, 135C, 135A, 124D, 321G, 334DD, 727AA, 731B, NE2, NE3, N E6	11,830.88
Uttarakhand	7, 107, 107A, 307, 507, 707, 707A, 9, 109, 109D, 309, 309A, 309B, 30, 34, 134, 334, 334A, 534, 734, 344, 731K	3,105.81
West Bengal	10, 110, 12, 112, 512, 14, 114, 114A, 314, 16, 116, 116B, 17, 317, 317A, 517, 717, 717A, 18, 19, 419, 27, 327, 327B, 31, 131A, 33, 133A, 49, 316A, 116A, 327C, 312, 2 18	3,664.50
A & N Islands	4	330.7
Dadra & Nagar Haveli	848A, NE4	37
Daman & Diu	848B, 251	22.0
Total		1,36,440

Source : MORTH, CRISIL Research

Investments and Funding | Capital expenditure on state roads

Government capital expenditure

(Rs billion)	2009-10 (Budget estimates)	2009-10 (Revised estimates)	2009-10 Accounts	2010-11 (Budget estimates)	2010-11 (Revised estimates)	2010-11 Accounts
Andhra Pradesh	16.7	15.5	12.3	14.5	14.2	10.4
Arunachal Pradesh	2.9	6.4	3.5	1.9	6.3	5.7
Assam	8.0	8.0	6.0	7.0	7.1	4.1
Bihar	25.7	25.8	30.5	35.7	37.2	40.6
Chhattisgarh	10.9	6.8	5.4	9.0	9.5	8.1
Goa	1.9	2.2	2.4	2.2	2.5	2.8
Gujarat	10.2	12.7	13.0	14.7	14.2	13.8
Haryana	15.4	13.0	11.6	10.1	9.6	8.7
Himachal Pradesh	3.5	4.9	5.0	3.9	4.0	4.3
J & K	1.9	1.2	-	1.1	4.7	9.8
Jharkhand	6.3	7.4	-	7.0	8.2	8.2
Karnataka	16.0	15.5	24.2	18.5	23.0	20.6
Kerala	5.3	7.5	8.4	22.0	8.4	14.1
Madhya Pradesh	19.3	18.7	19.6	19.3	21.2	19.8
Maharashtra	13.7	29.8	30.8	16.3	24.4	23.6
Manipur	0.8	3.3	3.0	2.4	3.1	2.8
Meghalaya	2.3	1.6	1.6	2.0	2.0	2.3
Mizoram	0.9	1.1	1.1	0.7	1.8	1.5
Nagaland	1.7	2.7	2.4	2.1	2.6	3.2
Orissa	8.8	9.5	9.2	12.4	11.6	12.9
Punjab	5.0	5.6	5.4	5.4	5.0	5.7
Rajasthan	5.1	4.7	4.3	5.5	5.8	5.5
Sikkim	1.5	1.6	1.0	2.0	2.1	1.0
Tamil Nadu	31.1	27.3	26.9	34.0	30.5	30.4
Telangana	-	-	-	-	-	-
Tripura	2.2	3.4	3.0	2.8	2.7	2.2
Uttarakhand	6.3	8.6	7.9	6.4	9.0	8.7
Uttar Pradesh	46.0	49.4	41.2	39.3	44.5	46.1
West Bengal	4.5	6.1	6.2	7.6	7.3	5.7
NCR	14.7	19.5	19.3	16.3	16.0	13.9
Puducherry	1.3	0.5	0.6	1.4	0.8	0.9
Total	289.6	320.3	306.8	323.4	339.6	345.7

(Rs billion)	2011-12 (Budget estimates)	2011-12 (Revised estimates)	2011-12 Accounts	2012-13 (Budget estimates)	2012-13 (Revised estimates)	2012-13 (Accounts)
Andhra Pradesh	18.9	18.8	12.0	27.7	27.2	21.1
Arunachal Pradesh	3.9	7.7	7.2	2.1	7.5	4.4
Assam	10.0	10.0	5.8	11.7	11.7	7.1
Bihar	38.8	41.0	40.6	38.1	41.4	32.9
Chhattisgarh	13.8	12.6	6.6	26.8	18.5	12.7
Goa	2.5	2.8	3.0	2.5	2.7	2.0
Gujarat	18.2	18.4	17.9	20.9	24.7	24.4
Haryana	12.1	10.6	9.3	11.9	14.3	12.2
Himachal Pradesh	5.4	6.5	6.6	7.3	6.9	6.9
J & K	4.1	3.1	10.7	1.8	1.6	5.4

Jharkhand	16.9	7.9	8.0	16.4	16.4	15.0
Karnataka	25.9	30.2	38.7	29.8	35.5	45.5
Kerala	12.5	20.6	16.6	26.9	34.0	20.0
Madhya Pradesh	18.5	16.9	17.0	23.4	18.7	20.7
Maharashtra	28.1	27.4	27.6	30.9	28.7	28.6
Manipur	2.9	3.0	2.9	2.1	2.0	1.8
Meghalaya	3.1	3.1	3.2	3.4	3.4	4.0
Mizoram	1.1	1.7	1.3	3.2	3.7	1.0
Nagaland	2.3	3.2	3.5	2.7	5.7	3.4
Orissa	14.6	12.3	12.4	16.6	14.4	15.2
Punjab	6.2	4.8	3.9	4.2	13.9	2.1
Rajasthan	6.7	11.7	10.8	13.7	13.9	14.1
Sikkim	2.2	2.6	1.4	3.3	3.5	3.1
Tamil Nadu	35.4	30.0	34.4	40.5	40.4	33.5
Telangana	-	-	-	-	-	-
Tripura	1.3	2.5	2.3	1.9	3.1	2.9
Uttarakhand	9.5	8.2	8.1	7.9	9.3	8.7
Uttar Pradesh	47.6	53.3	45.7	49.9	56.5	64.3
West Bengal	8.5	7.6	6.7	12.7	16.5	13.6
NCR	10.0	9.3	9.2	14.5	14.5	9.3
Puducherry	1.9	0.8	0.8	1.0	0.8	0.7
Total	**382.8**	**388.5**	**373.9**	**455.9**	**491.4**	**436.6**

(Rs billion)	2013-14 (Accounts)	2014-15 (Budget estimates)	2015-16 (Budget estimates)	2014-15 (Accounts)	2015-16 (Revised estimates)	2016-17 (Budget estimates)
Andhra Pradesh	26.9	13.4	18.3	21.5	22.6	20.1
Arunachal Pradesh	6.5	9.6	5.6	6.0	7.9	1.4
Assam	7.3	19.0	17.7	8.8	23.2	22.4
Bihar	40.8	52.9	48.5	41.8	46.4	56.5
Chhattisgarh	18.0	32.7	45.2	25.8	30.3	56.3
Goa	2.3	3.0	3.5	2.3	3.5	4.4
Gujarat	26.0	26.0	27.5	25.2	21.4	25.7
Haryana	17.4	18.0	17.2	13.3	20.7	27.2
Himachal Pradesh	6.9	8.6	11.3	8.4	12.5	12.3
J & K	3.9	8.5	9.1	4.5	12.2	10.5
Jharkhand	18.8	24.5	29.9	24.4	31.9	39.9
Karnataka	52.1	41.0	39.3	50.5	54.8	53.3
Kerala	14.0	13.5	23.7	14.6	22.0	22.2
Madhya Pradesh	22.0	26.1	37.1	28.5	36.5	43.0
Maharashtra	41.3	34.4	36.2	34.1	47.2	45.0
Manipur	2.5	2.2	2.7	2.2	3.6	2.8
Meghalaya	4.5	5.5	5.8	5.0	5.8	4.9
Mizoram	0.9	1.9	1.7	1.8	2.1	2.5
Nagaland	3.1	3.0	1.3	2.7	2.6	1.3
Orissa	20.8	46.2	56.3	43.1	71.9	57.7
Punjab	3.0	10.7	14.2	9.3	11.6	11.0
Rajasthan	22.3	37.7	30.4	27.1	31.4	42.6
Sikkim	2.9	3.7	2.6	2.4	2.9	2.0
Tamil Nadu	39.8	50.3	69.1	44.2	55.2	70.6
Telangana	–	21.4	42.8	11.4	23.0	30.3
Tripura	3.2	5.9	6.6	5.4	7.0	5.2
Uttarakhand	10.3	14.6	9.6	14.8	13.6	16.9
Uttar Pradesh	98.6	145.2	147.5	139.1	156.4	187.0
West Bengal	14.7	20.8	21.0	12.6	34.2	23.6
Total	**533.2**	**699.7**	**781.7**	**631.4**	**822.1**	**898.6**

(Rs billion)	2016-17	2017-18	2017-18	2017-18	2018-19	2018-19

(Rs billion)	2016-17 (Accounts)	2017-18 (Budget estimates)	2017-18 (Revised estimates)	2017-18 (Accounts)	2018-19 (Budget estimates)	2018-19 (Revised estimates)
Andhra pradesh	20.9	19.1	16.9	3.7	19.5	10.9
Arunachal pradesh	3.8	6.3	16.3	11.6	8.3	36.6
Assam	15.3	23.5	25.6	21.0	29.8	62.0
Bihar	53.3	55.1	58.8	53.7	54.7	57.0
Chattisgarh	34.1	61.3	44.6	46.8	51.5	40.4
Goa	3.4	5.3	5.2	3.4	6.1	5.8
Gujarat	22.0	29.8	31.6	27.7	32.2	32.5
Haryana	14.8	19.5	18.7	15.8	18.8	18.6
Himachal pradesh	14.6	15.1	16.4	15.3	17.0	19.1
J&K	8.3	12.5	11.3	11.0	8.6	10.8
Jharkhand	42.9	50.0	50.1	50.4	40.0	40.0
Karnataka	73.1	59.9	73.1	69.6	72.0	87.9
Kerala	28.2	22.1	3.2	2.6	14.3	9.0
Madhya pradesh	34.7	55.4	58.3	63.9	59.2	57.3
Maharashtra	33.3	84.0	50.7	61.2	82.5	105.1
Manipur	4.6	6.0	6.8	6.8	6.2	6.2
Meghalaya	5.7	7.0	7.0	7.0	6.2	6.2
Mizoram	3.7	4.3	6.2	6.2	3.2	3.2
Nagaland	1.7	1.1	2.8	1.4	1.5	1.4
Odisha	65.3	63.6	66.9	68.2	67.3	77.9
Punjab	13.4	8.5	11.7	6.7	10.4	9.1
Rajasthan	24.0	47.8	47.0	45.4	52.6	42.7
Sikkim	2.6	3.7	6.6	6.6	5.7	5.7
Tamil nadu	57.5	86.2	74.0	68.0	88.1	79.0
Telangana	22.6	20.5	18.4	21.7	25.2	21.5
Tripura	8.6	6.2	5.4	2.7	3.9	1.4
Uttarakhand	13.0	13.0	13.5	14.0	13.2	12.3
Uttar Pradesh	223.6	149.8	156.0	76.4	194.3	198.0
West Bengal	18.9	26.8	39.4	35.2	35.5	43.5
Total	**867.8**	**963.4**	**912.3**	**823.8**	**1,029.4**	**1,100.9**

(Rs billion)	2019-20 (Budget estimates)
Andhra pradesh	22.2
Arunachal pradesh	20.0
Assam	51.0
Bihar	55.4
Chattisgarh	45.4
Goa	6.3
Gujarat	38.5
Haryana	20.0
Himachal pradesh	17.8
J&K	11.1
Jharkhand	47.0
Karnataka	80.0
Kerala	15.1
Madhya pradesh	71.1
Maharashtra	64.5
Manipur	6.2
Meghalaya	6.2
Mizoram	3.2
Nagaland	1.4
Odisha	63.6
Punjab	11.1

Rajasthan	35.0
Sikkim	5.7
Tamil nadu	107.0
Telangana	0.2
Tripura	1.4
Uttarakhand	11.5
Uttar Pradesh	242.6
West Bengal	38.5
Total	**1,099.1**

Note: Top 9 states account for more than 70% of State road investments

Source: State budget documents

Investments and Funding | Revenues from cess on petrol and diesel

Revenues from cess on petrol and diesel

(Rs billion)	2014-15	2015-16	2016-17	2017-18	2018-19	FY20RE	FY21BE
Central Road Infra Fund (Receipts)	258	432	519	585	629	1,224	1,261

Note: RE :- Revised Estimates, BE :- Budget estimates

Source: Budget documents, MORTH

Investments and Funding | NHAI - Financial Structure

NHAI - Financial Structure (Rs.Bn)

Year	Cess Fund	Ploughing back of funds deposited by NHAI in CFI	IEBR
2014-15	96	54	33
2015-16	165	65	280
2016-17	74	75	331
2017-18	154	85	605
2018-19	180	96	620
2019-20	161	106	750
2020-21RE	239	115	650
2021-22BE	347	128	650

Note: RE: Revised Estimates; BE: Budget Estimates

Source : Budget document, CRISIL Research

Investments and Funding | Investment in Roads and Highways

Investment in Roads and Highways (2014-15 to 2023-27)

(Rs billion)	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2023-27P
National highways	409	654	882	1,089	1,154	1,409	1,410	1,648	9,566
State roads	743	887	1,055	957	1,204	1,248	1,235	1,454	9,636
Rural roads	170	183	179	170	234	215	226	273	1,150
Total	**1,322**	**1,724**	**2,116**	**2,216**	**2,592**	**2,872**	**2,871**	**3,375**	**21,506**

P: Projected

Source: CRISIL Research

Player financials | Standalone

Companies with exposure to roads sector: Margins and RoCE (Standalone)

Company	Year Ending	Operating profit margins (per cent)	Net Profit Margins (per cent)	RoCE (per cent)	Gearing
Ahluwalia Contracts (India) Ltd	Mar-11	9.2	4.2	30.5	0.5
	Mar-12	1.5	(2.8)	(2.5)	0.8
	Mar-13	(1.7)	(5.5)	(9.3)	1.2
	Mar-14	2.9	2.3	13.1	1.1
	Mar-15	10.9	5.8	21.5	0.5
	Mar-16	12.9	6.8	29.4	0.3
	Mar-17	12.2	6.1	28.1	0.2
	Mar-18	13.3	7.0	30.4	-
	Mar-19	12.5	6.7	24.3	0.1
	Mar-20	8.0	3.4	15.5	0.1
	Mar-21	7.8	3.9	16.3	0.0
ARSS Infrastructure Projects Ltd	Mar-11	22.5	9.0	22.9	2.1
	Mar-12	13.9	(2.5)	9.3	2.7
	Mar-13	13.2	(8.5)	4.4	4.0
	Mar-14	22.7	0.2	8.7	4.5
	Mar-15	21.6	1.0	6.4	4.7
	Mar-16	30.3	0.8	7.8	5.1
	Mar-17	(17.0)	(39.2)	(12.7)	46.0
	Mar-18	20.6	(9.3)	(2.5)	39.8
	Mar-19	11.0	(2.4)	0.7	54.4
	Mar-20	(6.2)	2.7	0.9	42.1
	Mar-21	(16.1)	(19.2)	(3.0)	(120.0)
Ashoka Buildcon Limited	Mar-11	14.9	7.6	17.2	0.5
	Mar-12	14.7	7.8	17.4	0.4
	Mar-13	12.5	6.2	16.7	0.3
	Mar-14	13.1	6.6	16.5	0.2
	Mar-15	12.9	7.2	19.0	0.4
	Mar-16	13.7	6.7	14.3	0.3
	Mar-17	12.9	8.8	13.2	0.1
	Mar-18	12.8	9.7	16.2	0.1
	Mar-19	13.9	7.5	16.9	0.4
	Mar-20	15.3	9.8	20.4	0.2
	Mar-21	14.4	10.7	18.3	0.1
B L Kashyap and Sons Ltd	Mar-11	7.4	3.2	13.6	0.9
	Mar-12	3.8	0.1	8.3	1.0
	Mar-13	5.9	0.6	9.6	0.9
	Mar-14	(3.5)	(6.7)	(4.4)	1.2
	Mar-15	1.9	(6.5)	0.2	1.4
	Mar-16	8.1	0.1	7.7	1.5
	Mar-17	9.6	1.4	9.8	1.4
	Mar-18	10.3	5.2	13.0	1.0
	Mar-19	8.1	1.9	6.9	0.8
	Mar-20	2.3	(3.9)	1.5	0.8
	Mar-21	8.7	0.3	8.9	0.8
Consolidated Construction Consortium Ltd	Mar-11	23.0	7.2	13.9	0.7
	Mar-12	8.9	0.4	7.5	1.0
	Mar-13	2.7	(7.6)	0.8	1.3

	Mar-14	(22.8)	(25.4)	(16.8)	2.7
	Mar-15	(18.4)	(23.8)	(2.5)	6.6
	Mar-16	(10.2)	(44.1)	(3.4)	11.3
	Mar-17	(0.7)	(23.3)	(0.1)	24.2
	Mar-18	(0.6)	(18.6)	2.7	(26.5)
	Mar-19	1.0	(16.3)	2.7	(9.1)
	Mar-20	(19.2)	(41.5)	(3.8)	(4.7)
	Mar-21	(18.3)	(51.3)	(2.3)	(4.9)
Dilip Buildcon Limited-(Infac)	Mar-11	20.9	8.4	29.2	2.0
	Mar-12	22.0	9.3	35.4	2.3
	Mar-13	25.3	10.9	38.0	1.7
	Mar-14	20.8	10.9	28.6	1.7
	Mar-15	22.1	5.3	17.6	2.5
	Mar-16	20.3	5.5	34.6	2.4
	Mar-17	20.4	7.2	17.6	1.4
	Mar-18	18.2	6.1	20.9	1.2
	Mar-19	17.8	6.4	19.6	1.1
	Mar-20	17.6	4.7	17.3	0.9
Era Infra Engineering Ltd	Mar-11	19.5	6.6	15.2	1.7
	Mar-12	19.5	1.5	14.2	2.1
	Mar-13	19.8	3.7	12.9	2.4
	Mar-14	8.3	(19.1)	(1.1)	4.2
	Mar-15	11.3	(47.8)	(1.7)	7.9
	Mar-16	(31.2)	(110.0)	(7.8)	(15.7)
Gammon India Ltd	Mar-11	5.3	2.2	12.7	1.1
	Mar-12	9.5	1.6	12.2	1.4
	Mar-13	2.5	(8.9)	0.8	2.2
	Dec-13	(6.4)	(24.0)	(12.5)	4.7
	Sep-14	(2.1)	2.3	13.6	4.9
	Mar-16	16.9	1.7	12.7	2.2
	Mar-17	(14.7)	(231.9)	(18.4)	6.0
	Mar-18	30.5	(826.4)	(34.7)	(3.6)
	Mar-19	40.2	(862.3)	(77.6)	(1.5)
	Mar-20	(93.7)	(1,558.2)	(79.5)	(1.2)
	Mar-21	(76.9)	(1,356.6)	808.9	(1.0)
Gayatri Projects Ltd	Mar-11	13.8	3.6	14.9	2.8
	Mar-12	15.9	2.4	14.3	2.4
	Mar-13	14.9	2.3	13.8	2.3
	Mar-14	15.5	2.7	11.1	2.3
	Mar-15	10.9	1.3	9.7	2.6
	Mar-16	15.3	3.3	11.2	2.3
	Mar-17	16.2	3.5	13.1	2.8
	Mar-18	17.1	6.2	16.2	1.7
	Mar-19	15.9	6.1	16.9	1.4
	Mar-20	12.6	(11.3)	(2.3)	2.1
	Mar-21	11.6	1.5	13.7	2.0
Hindustan Construction Company Ltd	Mar-11	13.5	0.8	9.0	2.4
	Mar-12	10.9	(5.5)	4.1	3.5
	Mar-13	9.6	(3.6)	5.8	4.0
	Mar-14	15.4	2.0	11.8	3.8
	Mar-15	18.8	1.8	12.4	3.6
	Mar-16	16.9	2.0	12.5	2.8
	Mar-17	17.1	1.4	12.5	1.6
	Mar-18	14.0	1.7	11.9	1.3
	Mar-19	12.2	(44.9)	(41.4)	2.6
	Mar-20	12.7	(4.6)	15.5	2.9
	Mar-21	11.7	(21.9)	(0.3)	5.5
Hindustan Dorr-Oliver Ltd	Mar-11	9.9	5.7	27.1	0.8

	Jun-12	0.5	(4.2)	1.0	1.8
	Mar-13	(26.6)	(50.3)	(37.2)	7.6
	Mar-14	(22.1)	(39.0)	(10.7)	(20.4)
	Mar-15	(104.2)	(221.1)	(180.6)	(1.0)
	Mar-16	(7.6)	(96.8)	(11.7)	(1.2)
	Mar-17	(142.3)	(559.6)	(242.7)	(1.0)
IL&FS Engineering and Construction Company Ltd	Mar-11	(6.2)	0.2	5.9	4.2
	Sep-12	0.5	(6.8)	3.2	10.1
	Mar-14	2.2	(4.7)	6.5	196.4
	Mar-15	7.9	(0.2)	12.8	14.6
	Mar-16	1.4	(10.2)	5.5	(171.2)
	Mar-17	9.7	0.3	17.2	23.6
	Mar-18	8.4	0.4	15.2	25.0
	Mar-19	(6.6)	(164.3)	(219.4)	(1.4)
	Mar-20	1.1	(72.2)	(104.1)	(1.2)
	Mar-21	(66.5)	(65.8)	(312.3)	(1.0)
IL&FS Transportation Networks Ltd	Mar-11	34.1	17.8	18.4	1.1
	Mar-12	21.2	8.1	16.3	1.5
	Mar-13	19.9	8.0	16.0	1.9
	Mar-14	18.4	7.7	13.4	2.0
	Mar-15	16.1	9.2	12.2	2.5
	Mar-16	7.4	(2.4)	9.6	3.6
	Mar-17	12.9	6.8	12.3	4.1
	Mar-18	15.7	8.1	11.9	4.5
	Mar-19	(856.8)	(9,453.8)	119.3	(0.1)
	Mar-20	(229.0)	(796.7)	(146.5)	(1.0)
IRB Infrastructure Developers Ltd.	Mar-11	15.5	31.3	5.6	0.9
	Mar-12	11.1	13.3	9.5	1.2
	Mar-13	10.6	9.2	13.0	1.1
	Mar-14	10.3	13.0	15.2	1.3
	Mar-15	10.3	6.1	9.9	1.2
	Mar-16	8.5	10.6	12.6	1.2
	Mar-17	11.0	8.0	10.4	1.5
	Mar-18	11.0	15.3	9.4	2.2
	Mar-19	13.3	9.7	9.5	1.7
	Mar-20	13.1	7.0	6.5	3.1
	Mar-21	13.6	6.9	5.4	3.5
ITD Cementation India Ltd	Dec-10	9.7	0.9	10.9	1.5
	Dec-11	10.8	1.6	12.1	1.7
	Dec-12	12.3	1.8	12.5	1.7
	Dec-13	9.9	0.6	11.5	1.7
	Dec-14	5.3	1.2	12.3	1.2
	Dec-15	6.1	(2.3)	2.4	1.0
	Dec-16	9.8	1.7	20.1	0.6
	Dec-17	9.0	3.9	20.9	0.8
	Mar-19	13.1	3.6	17.2	0.2
	Mar-20	11.7	2.1	10.8	0.3
	Mar-21	8.9	0.7	9.1	0.3
IVRCL Limited	Mar-11	5.6	2.8	13.1	1.1
	Jun-12	8.5	0.3	9.6	1.2
	Mar-13	8.5	(2.8)	7.5	1.3
	Mar-14	(0.9)	(17.2)	(2.9)	2.8
	Mar-15	3.0	(22.5)	(0.6)	4.2
	Mar-16	(17.6)	(46.8)	(6.4)	11.5
	Mar-17	(14.5)	(6.6)	(7.9)	13.9
	Mar-18	(40.5)	(155.1)	(21.3)	(3.9)
	Mar-19	(19.6)	(243.4)	(8.3)	(2.2)
	Mar-20	(142.4)	(537.6)	(23.0)	(1.5)

J. Kumar Infraprojects Ltd	Mar-11	14.3	7.9	29.5	0.4
	Mar-12	16.0	7.3	23.8	0.4
	Mar-13	15.6	7.6	22.4	0.5
	Mar-14	17.1	7.1	19.3	1.0
	Mar-15	18.0	7.1	17.6	0.7
	Mar-16	17.0	7.0	14.4	0.3
	Mar-17	16.9	7.4	12.6	0.3
	Mar-18	15.7	6.7	13.3	0.4
	Mar-19	15.7	6.4	16.3	0.4
	Mar-20	14.4	6.2	13.1	0.4
	Mar-21	12.3	2.5	7.9	0.3
JMC Projects (India) Ltd	Mar-11	8.7	2.6	16.7	0.6
	Mar-12	7.4	2.5	19.4	0.8
	Mar-13	4.9	0.7	11.0	1.0
	Mar-14	5.3	0.9	11.9	1.1
	Mar-15	7.2	1.0	13.0	1.7
	Mar-16	9.3	1.7	14.2	1.2
	Mar-17	9.5	2.6	13.3	0.9
	Mar-18	11.3	3.8	16.0	1.0
	Mar-19	11.1	4.3	18.1	0.8
	Mar-20	11.8	2.1	14.6	0.9
	Mar-21	10.1	1.9	13.5	0.8
	Mar-22	9.0	(2.9)	(2.4)	1.1
Kaushalya Infrastructure Development Corporation Ltd	Mar-11	11.2	3.2	8.1	0.5
	Mar-12	11.2	3.0	8.5	0.4
	Mar-13	19.4	(7.7)	3.3	0.5
	Mar-14	(74.5)	(100.5)	(5.3)	0.6
	Mar-15	1.7	(120.4)	(0.6)	0.7
	Mar-16	(6,301.9)	(8,418.3)	(46.6)	2.2
	Mar-17	(1,493.5)	(1,282.8)	(4.5)	2.6
	Mar-18	(84.7)	(146.8)	(1.1)	2.5
	Mar-19	(344.9)	3,767.0	19.7	0.8
	Mar-20	(2,299.2)	(3,023.7)	(6.4)	1.0
	Mar-21	(18.0)	0.1	5.9	0.9
KNR Constructions Ltd	Mar-11	16.8	7.6	22.7	0.2
	Mar-12	18.4	7.2	20.1	0.1
	Mar-13	16.8	7.8	16.1	0.2
	Mar-14	15.8	7.5	15.0	0.2
	Mar-15	16.8	7.0	11.5	0.2
	Mar-16	17.8	18.3	25.5	0.2
	Mar-17	15.5	10.4	20.4	0.2
	Mar-18	20.4	14.1	21.1	0.2
	Mar-19	20.3	12.3	19.0	0.2
	Mar-20	22.0	10.0	18.4	0.1
	Mar-21	20.2	9.0	22.1	0.0
Larsen & Toubro Ltd	Mar-11	12.7	9.0	24.2	0.3
	Mar-12	11.7	8.4	21.2	0.4
	Mar-13	10.6	9.5	20.7	0.3
	Mar-14	11.5	9.7	20.1	0.3
	Mar-15	11.8	8.7	16.9	0.4
	Mar-16	9.8	7.6	15.0	0.3
	Mar-17	10.2	8.2	14.9	0.2
	Mar-18	9.6	7.2	15.0	0.2
	Mar-19	8.8	9.1	19.3	0.2
	Mar-20	8.5	8.0	13.4	0.5
	Mar-21	9.3	15.4	21.9	0.4
	Mar-22	9.3	7.8	13.8	0.30
Madhucon Projects Ltd	Mar-11	10.3	1.9	9.6	1.23

	Mar-12	10.7	2.0	11.7	1.08
	Mar-13	17.3	3.2	10.9	0.97
	Mar-14	22.0	3.7	13.5	0.8
	Mar-15	17.6	3.5	13.6	0.9
	Mar-16	20.6	3.1	10.0	0.7
	Mar-17	19.5	2.3	9.4	0.8
	Mar-18	15.0	2.0	5.7	0.8
	Mar-19	3.4	2.7	1.1	0.9
	Mar-20	(1.9)	(39.4)	(17.8)	1.2
	Mar-21	(16.2)	(5.6)	0.9	1.3
Man Infraconstruction Ltd	Mar-11	16.3	12.8	20.3	-
	Mar-12	18.1	17.6	18.8	-
	Mar-13	8.4	11.8	10.6	0.0
	Mar-14	0.8	10.1	7.1	0.0
	Mar-15	9.1	26.0	12.3	0.0
	Mar-16	6.7	20.3	10.7	-
	Mar-17	10.4	41.5	13.9	-
	Mar-18	15.1	38.2	14.2	-
	Mar-19	29.3	65.2	17.6	0.0
	Mar-20	0.1	64.2	10.4	-
	Mar-21	3.1	77.3	12.2	-
MBL Infrastructures Ltd	Mar-11	12.9	6.1	26.7	0.8
	Mar-12	12.7	5.7	24.3	1.0
	Mar-13	10.0	4.1	16.8	1.2
	Mar-14	10.4	4.3	18.5	1.1
	Mar-15	11.9	3.9	17.5	1.1
	Mar-16	10.2	3.7	15.3	1.2
	Mar-17	0.8	(2.9)	2.0	2.1
	Mar-18	7.4	(5.8)	10.2	1.3
	Mar-19	28.4	(153.4)	(10.4)	1.3
	Mar-20	24.2	212.9	21.0	0.8
	Mar-21	(33.4)	63.8	6.6	0.7
	Mar-22	15.2	85.6	4.3	0.6
Mukand Engineers Ltd	Mar-11	18.7	8.6	18.4	0.7
	Mar-12	13.6	5.1	11.5	0.9
	Mar-13	11.3	4.8	11.6	0.8
	Mar-14	8.6	2.1	8.6	0.8
	Mar-15	5.5	0.5	7.2	0.7
	Mar-16	0.8	(6.0)	(0.0)	0.9
	Mar-17	3.2	(2.0)	5.1	1.1
	Mar-18	(5.5)	(14.3)	(2.1)	1.5
	Mar-19	(19.7)	(41.8)	(10.7)	4.9
	Mar-20	(41.6)	(72.6)	(18.4)	(7.0)
	Mar-21	(82.1)	(138.8)	(24.6)	(2.4)
NCC Ltd	Mar-11	10.0	3.3	11.9	1.0
	Mar-12	7.8	0.7	9.1	0.9
	Mar-13	8.5	1.1	10.6	0.9
	Mar-14	6.6	0.7	10.4	1.0
	Mar-15	7.6	1.2	14.0	0.6
	Mar-16	9.4	3.0	16.2	0.6
	Mar-17	9.0	3.0	13.3	0.5
	Mar-18	11.5	3.7	14.1	0.3
	Mar-19	11.9	4.7	19.7	0.4
	Mar-20	13.1	4.5	14.9	0.4
	Mar-21	11.9	3.5	12.2	0.3
	Mar-22	10.4	4.9	15.3	0.2
Patel Engineering Ltd	Mar-11	16.6	2.7	12.3	1.6
	Mar-12	12.9	2.3	10.9	1.6

	Mar-13	14.4	1.6	12.6	1.9
	Mar-14	14.3	4.6	12.0	2.2
	Mar-15	18.0	2.9	11.6	2.4
	Mar-16	14.5	(1.1)	9.5	2.8
	Mar-17	18.1	1.4	11.2	2.1
	Mar-18	22.4	2.9	12.6	1.1
	Mar-19	13.9	4.0	9.6	1.0
	Mar-20	6.0	1.5	8.9	0.8
	Mar-21	9.6	(8.1)	3.5	0.8
	Mar-22	15.1	1.7	10.5	0.8
PBA Infrastructure Ltd	Mar-11	18.6	3.5	13.4	2.4
	Mar-12	13.3	4.1	14.6	1.7
	Mar-13	15.3	0.6	10.6	1.6
	Mar-14	13.1	(0.9)	9.9	1.9
	Mar-15	14.1	(11.3)	6.3	2.8
	Mar-16	18.4	(24.6)	4.8	5.0
	Mar-17	11.1	(33.1)	1.4	6.7
	Mar-18	4.4	(35.0)	1.3	129.6
	Mar-19	3.1	7.2	2.2	41.5
	Mar-20	0.8	7.7	0.4	32.0
	Mar-21	20.0	9.1	0.4	38.3
Petron Engineering Construction Ltd	Mar-11	13.6	5.6	35.5	0.2
	Mar-12	12.1	4.8	29.9	0.8
	Mar-13	6.7	0.0	9.4	1.3
	Mar-14	12.2	1.0	10.6	1.0
	Mar-15	9.9	0.0	14.9	1.1
	Mar-16	9.1	1.0	12.2	0.8
	Mar-17	2.9	(4.3)	1.4	0.6
	Mar-18	(56.9)	(75.4)	(134.6)	10.1
	Mar-19	3.9	(12.1)	(0.7)	(199.8)
Pnc Infratech Limited	Mar-11	11.5	6.3	28.2	0.3
	Mar-12	12.3	6.3	22.0	0.6
	Mar-13	12.4	6.0	17.3	0.4
	Mar-14	13.6	6.0	14.6	0.4
	Mar-15	14.3	6.5	19.5	0.5
	Mar-16	13.4	12.1	22.3	0.0
	Mar-17	13.4	11.9	14.5	0.1
	Mar-18	17.4	14.0	16.3	0.1
	Mar-19	15.5	11.1	19.3	0.2
	Mar-20	16.4	9.9	25.3	0.1
	Mar-21	14.2	7.7	19.3	0.1
Pratibha Industries Ltd	Mar-11	14.3	5.6	20.3	0.9
	Mar-12	14.5	5.5	18.0	1.5
	Mar-13	16.9	5.8	14.8	1.9
	Mar-14	16.4	2.3	9.4	2.8
	Mar-15	14.3	2.5	9.8	3.2
	Mar-16	20.8	1.7	13.7	4.7
	Mar-17	(22.6)	(77.5)	(10.1)	12.9
	Mar-18	(157.2)	(240.7)	(78.7)	(2.5)
	Mar-19	(80.0)	(502.7)	(102.7)	(1.2)
Punj Lloyd Ltd	Mar-11	7.2	(0.3)	3.6	0.9
	Mar-12	13.0	1.0	8.3	1.1
	Mar-13	10.2	0.2	8.2	1.3
	Mar-14	11.8	0.1	8.6	1.4
	Mar-15	(1.5)	(10.8)	2.4	1.6
	Mar-16	(16.4)	(44.7)	(7.2)	3.1
	Mar-17	(3.7)	(22.3)	0.5	32.0
	Mar-18	1.1	7.7	1.4	41.9
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Ramky Infrastructure Ltd	Mar-11	10.7	5.2	21.6	0.8
	Mar-12	10.4	2.5	15.2	1.0
	Mar-13	8.9	2.0	12.7	1.1
	Mar-14	(23.0)	(24.6)	(22.1)	2.4
	Mar-15	(28.3)	(35.8)	(20.6)	7.5
	Mar-16	(0.7)	0.8	19.3	7.3
	Mar-17	7.8	3.7	22.0	4.7
	Mar-18	0.4	4.7	18.1	2.6
	Mar-19	9.5	2.8	12.6	2.2
	Mar-20	4.0	0.2	7.9	1.6
	Mar-21	6.8	5.9	11.2	1.2
Sadbhav Engineering Ltd	Mar-11	11.6	5.3	24.6	0.6
	Mar-12	11.2	5.3	24.1	0.6
	Mar-13	8.7	4.1	13.7	0.9
	Mar-14	9.5	4.5	12.6	1.1
	Mar-15	10.6	2.9	11.8	0.8
	Mar-16	10.6	4.1	12.7	0.8
	Mar-17	10.9	5.7	11.3	1.1
	Mar-18	12.1	5.3	12.2	0.8
	Mar-19	12.4	5.2	12.0	0.8
	Mar-20	12.7	3.8	9.1	0.6
	Mar-21	14.0	2.5	6.0	0.6
Simplex Infrastructures Ltd	Mar-11	8.5	2.5	13.7	1.5
	Mar-12	7.7	1.5	12.7	1.8
	Mar-13	8.1	0.9	9.9	2.1
	Mar-14	9.6	1.0	10.1	2.1
	Mar-15	10.0	0.6	9.4	2.3
	Mar-16	10.9	1.8	12.1	2.4
	Mar-17	11.1	2.1	12.7	2.2
	Mar-18	11.1	2.0	12.1	2.2
	Mar-19	9.9	2.0	11.7	1.9
	Mar-20	6.7	(8.1)	0.8	2.2
	Mar-21	0.6	(22.8)	(1.0)	3.6
Simplex Projects Ltd	Mar-11	12.0	5.7	15.2	1.6
	Mar-12	11.9	0.5	8.3	1.6
	Mar-13	12.5	0.8	8.0	1.8
	Mar-14	9.2	0.7	7.6	2.0
	Mar-15	6.4	(6.6)	3.8	2.5
	Mar-16	2.9	(20.2)	(1.0)	5.0
	Mar-17	9.4	0.8	5.6	5.4
	Mar-18	6.4	0.7	0.9	4.8
	Mar-19	6.2	0.8	0.5	5.2
	Mar-20	8.2	0.5	0.4	5.7
	Mar-21	6.9	0.1	0.2	9.0
SPML Infra Ltd	Mar-11	9.9	2.4	14.6	1.0
	Mar-12	11.1	0.3	12.1	1.1
	Mar-13	5.7	1.1	15.5	1.1
	Mar-14	(3.6)	0.5	15.7	1.2
	Mar-15	10.2	0.8	17.6	1.3
	Mar-16	11.8	0.9	17.9	1.5
	Mar-17	5.1	0.1	16.6	2.4
	Mar-18	13.7	3.2	14.6	2.9
	Mar-19	10.4	3.5	13.0	3.5
	Mar-20	6.6	0.3	7.9	3.8
	Mar-21	7.0	(17.4)	(2.1)	6.6
Unity Infraprojects Ltd	Mar-11	13.6	5.5	19.3	1.3
	Mar-12	13.8	5.2	23.5	1.2
	Mar-13	13.6	4.5	19.8	1.4
	Mar-14	[illegible]	[illegible]	[illegible]	[illegible]

	Mar-14	10.4	0.3	14.0	2.3
	Mar-15	(10.8)	(44.7)	(2.1)	4.2
	Mar-16	(91.0)	(251.3)	(8.7)	36.4
	Mar-17	(309.6)	(445.2)	(35.0)	(2.7)
Va Tech Wabag Limited	Mar-11	11.4	6.9	28.1	-
	Mar-12	11.5	7.5	26.6	0.2
	Mar-13	13.1	8.5	25.9	0.1
	Mar-14	11.9	7.7	23.3	0.1
	Mar-15	12.1	7.2	21.5	0.1
	Mar-16	10.7	7.5	22.4	0.3
	Mar-17	12.2	4.2	15.7	0.1
	Mar-18	10.3	6.3	17.2	0.3
	Mar-19	6.7	5.9	14.2	0.5
	Mar-20	10.1	3.4	15.4	0.5
	Mar-21	8.1	4.0	11.7	0.3
	Mar-22	9.0	4.3	11.9	0.3
Valecha Engineering Ltd	Mar-11	7.4	2.7	11.3	0.8
	Mar-12	9.5	3.1	11.4	0.9
	Mar-13	10.0	2.6	11.7	0.9
	Mar-14	11.4	2.8	11.0	1.0
	Mar-15	1.9	(6.3)	(2.5)	1.4
	Mar-16	(15.2)	(25.9)	(21.0)	3.4
	Mar-17	(2.0)	(14.0)	2.5	7.6
	Mar-18	(10.9)	(17.6)	5.1	20.6
	Mar-19	(1.9)	0.6	0.5	16.2
	Mar-20	(0.0)	0.8	0.5	14.5
Welspun Enterprises Ltd	Mar-11	2.2	(14.0)	1.0	0.5
	Mar-12	6.8	0.7	3.6	0.4
	Mar-13	(13.9)	2.0	3.5	0.4
	Mar-14	(11.6)	(28.6)	(9.7)	0.3
	Mar-15	(20.7)	5.2	3.5	0.1
	Mar-16	(22.8)	22.2	3.1	0.0
	Mar-17	(6.5)	13.5	4.0	0.1
	Mar-18	7.2	11.0	10.5	-
	Mar-19	10.5	8.8	13.9	0.1
	Mar-20	11.7	9.1	11.7	0.2
	Mar-21	12.1	7.6	7.7	0.3
	Mar-22	11.0	7.1	6.7	0.3

Source: CRISIL Research

Player financials | Consolidated

Companies with exposure to roads sector: Margins and RoCE (Consolidated)

Company	Year Ending	Operating profit margins (per cent)	Net Profit Margins (per cent)	RoCE (per cent)	Gearing
Ahluwalia Contracts (India) Ltd -(Consolidated)	Mar-11	9.4	4.1	29.2	0.6
	Mar-12	1.6	-3.1	-3.5	0.9
	Mar-13	-1.8	-5.0	-7.1	1.4
	Mar-14	2.6	2.3	13.4	1.1
	Mar-15	10.8	5.8	21.5	0.5
	Mar-16	12.5	6.8	29.5	0.3
	Mar-17	12.4	6.0	28.2	0.2
	Mar-18	13.2	7.0	32.8	0.0
	Mar-19	12.3	6.7	24.4	0.1
	Mar-20	8.1	3.4	15.5	0.1
	Mar-21	7.8	3.9	16.7	0.0
Ashoka Buildcon Limited-(Consolidated)	Mar-11	20.9	17.2	16.4	1.3

	Mar-12	21.9	7.7	10.8	1.6
	Mar-13	20.2	2.4	7.4	1.9
	Mar-14	22.4	2.5	6.7	1.9
	Mar-15	22.5	-0.1	6.6	2.1
	Mar-16	34.2	-6.9	10.1	2.1
	Mar-17	30.7	-4.3	10.8	2.3
	Mar-18	30.0	-3.4	15.6	12.5
	Mar-19	25.9	-0.9	17.9	15.7
	Mar-20	27.5	3.3	20.2	11.9
	Mar-21	27.8	5.9	18.9	6.1
B L Kashyap and Sons Ltd -(Consolidated)	Mar-11	7.9	3.1	10.7	1.1
	Mar-12	6.4	-0.3	10.0	1.2
	Mar-13	7.7	0.5	9.5	1.2
	Mar-14	-2.4	-6.3	-3.9	1.5
	Mar-15	2.3	-7.1	-0.4	1.9
	Mar-16	8.1	-0.7	6.5	2.0
	Mar-17	5.8	0.5	7.3	1.7
	Mar-18	8.9	2.0	9.5	1.2
	Mar-19	7.5	-0.8	4.7	1.1
	Mar-20	2.6	-7.7	-0.5	1.1
	Mar-21	8.2	-7.7	6.5	1.4
Consolidated Construction Consortium Ltd -(Consolidated)	Mar-11	7.5	2.2	13.8	0.7
	Mar-12	5.1	-0.6	7.0	1.1
	Mar-13	1.0	-4.5	-0.2	1.5
	Mar-14	-23.8	-27.3	-12.1	3.3
	Mar-15	-19.6	-27.3	-4.0	9.2
	Mar-16	-9.6	-49.3	-3.6	20.9
	Mar-17	-1.4	-27.1	-0.9	63.7
	Mar-18	-1.3	-15.9	2.8	-19.1
	Mar-19	0.7	-15.6	2.3	-8.8
	Mar-20	-17.6	-45.6	-4.4	-4.7
	Mar-21	-22.1	-50.5	-1.3	-5.1
Era Infra Engineering Ltd -(Consolidated)	Mar-11	19.4	5.9	14.2	1.9
	Mar-12	19.7	1.2	13.2	2.6
	Mar-13	19.8	2.4	10.5	3.3
	Mar-14	8.3	-20.9	-0.9	8.3
	Mar-15	11.8	-50.3	-1.4	13.8
	Mar-16	-31.7	-111.0	-6.0	-15.2
Gammon India Ltd -(Consolidated)	Mar-11	6.4	1.3	10.0	4.6
	Mar-12	10.7	-1.5	6.9	8.1
	Mar-13	6.7	-12.5	-0.2	14.6
	Dec-13	2.5	-16.9	-2.6	47.1
	Sep-14	6.3	-20.3	-0.5	-109.5
	Mar-16	18.1	-11.1	5.7	-67.3
	Mar-17	2.3	-71.4	-2.8	-11.8
	Mar-18	52.3	-229.0	-25.4	-2.4
	Mar-19	-14.5	-131.6	-32.7	-1.5
	Mar-20	33.4	-728.2	6.5	-1.2
	Mar-21	-37.3	-1457.7	-35.3	-1.0
Gayatri Projects Ltd -(Consolidated)	Mar-11	19.5	1.6	5.4	3.5
	Mar-12	18.2	-0.6	5.7	6.4
	Mar-13	22.6	-1.3	4.8	6.9
	Mar-14	26.1	-5.0	2.4	9.8
	Mar-15	21.3	-3.5	3.4	5.8
	Mar-16	12.8	-2.7	5.0	-12.5
	Mar-17	16.2	0.0	11.3	4.5
	Mar-18	17.0	-1.0	10.2	2.3
	Mar-19	15.9	4.6	14.8	1.9
	Mar-20	11.3	-1.7	9.3	2.2
	Mar-21	11.3	1.1	11.7	2.2
Hindustan Construction Company Ltd -(Consolidated)	Mar-11	9.3	-1.5	7.1	6.1
	Mar-12	5.9	-7.2	0.8	9.1
	Mar-13	5.5	-6.2	2.7	14.0
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

	Mar-14	9.7	-3.7	6.5	15.2
	Mar-15	12.2	-2.1	8.9	19.7
	Mar-16	12.0	-6.4	8.1	-15.0
	Mar-17	8.4	-9.9	5.5	-13.4
	Mar-18	7.5	-9.7	5.5	-5.5
	Mar-19	7.4	-3.4	-0.8	-4.1
	Mar-20	9.2	2.1	37.4	-4.8
	Mar-21	4.7	-7.4	4.2	-3.3
Hindustan Dorr-Oliver Ltd -(Consolidated)	Mar-11	8.5	3.9	22.3	1.5
	Jun-12	-2.1	-7.7	-5.6	8.3
	Mar-13	-10.4	-28.2	-38.1	-9.5
	Mar-14	-15.8	-36.1	-8.8	-16.1
	Mar-15	-97.9	-212.0	-138.5	-1.2
	Mar-16	-14.0	-77.6	-25.3	-1.2
IL&FS Engineering and Construction Company Ltd -(Consolidated)	Mar-11	-4.6	0.1	6.1	4.2
	Sep-12	-0.2	-7.3	2.4	9.5
	Mar-14	3.4	-3.5	6.9	48.7
	Mar-15	6.7	-1.1	11.4	14.3
	Mar-16	-9.4	-20.5	-6.1	-8.5
	Mar-17	8.2	-2.5	16.6	-11.2
	Mar-18	6.3	0.8	17.0	-15.0
	Mar-19	-7.1	-164.9	-204.1	-1.5
	Mar-20	1.1	-72.0	-105.2	-1.2
	Mar-21	-46.7	-75.5	-330.7	-1.0
IL&FS Transportation Networks Ltd -(Consolidated)	Mar-11	25.6	11.5	18.5	2.6
	Mar-12	22.3	10.3	14.9	4.2
	Mar-13	22.1	8.9	12.3	4.3
	Mar-14	22.3	7.7	9.7	5.0
	Mar-15	22.2	7.1	8.9	5.5
	Mar-16	24.4	1.1	9.2	5.8
	Mar-17	35.7	1.9	10.0	7.0
	Mar-18	27.5	0.9	10.2	7.4
IRB Infrastructure Developers Ltd -(Consolidated)	Mar-11	44.7	18.9	16.3	1.8
	Mar-12	43.8	15.8	14.0	2.4
	Mar-13	44.5	15.0	12.0	2.7
	Mar-14	47.1	12.3	10.5	3.2
	Mar-15	57.6	13.6	10.1	3.0
	Mar-16	52.0	12.5	10.4	3.3
	Mar-17	52.3	12.2	12.0	2.7
	Mar-18	47.3	16.2	12.5	2.4
	Mar-19	42.9	12.7	11.3	2.6
	Mar-20	43.5	10.5	17.3	1.4
	Mar-21	47.5	2.2	7.7	2.7
ITD Cementation India Ltd -(Consolidated)	Dec-10	10.6	0.7	13.3	1.6
	Dec-11	10.3	1.4	14.3	1.7
	Dec-12	11.3	1.4	13.4	2.0
	Dec-13	10.8	0.8	13.1	1.5
	Dec-14	4.2	0.9	12.9	1.3
	Dec-15	6.7	-2.1	4.3	1.2
	Dec-16	9.8	1.7	19.1	0.6
	Dec-17	8.4	3.5	21.2	0.8
	Mar-19	10.6	2.6	16.7	0.5
	Mar-20	9.0	1.5	12.5	0.5
	Mar-21	7.9	0.6	11.0	0.4
IVRCL Ltd -(Consolidated)	Mar-11	11.3	0.3	8.2	1.3
	Jun-12	8.7	-2.2	5.4	2.1
	Mar-13	8.4	-6.4	2.7	2.5
	Mar-14	6.0	-18.3	-1.5	4.2
	Mar-15	0.9	-42.0	-5.6	11.4
	Mar-16	-10.6	-51.5	-4.0	-41.5
	Mar-17	-10.0	-33.3	-6.3	-12.3
	Mar-18	-10.2	-121.5	-12.4	-5.4
	Mar-19	-3.5	-165.1	-7.5	-2.6
	Mar-20	-28.8	-211.7	-14.7	-1.7

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JMC Projects (India) Ltd -(Consolidated)	Mar-11	8.4	2.6	15.5	0.8
	Mar-12	7.1	2.2	16.0	1.3
	Mar-13	4.5	0.3	6.5	2.5
	Mar-14	6.0	-0.4	5.3	3.8
	Mar-15	8.5	-1.2	7.0	5.4
	Mar-16	12.0	-2.6	7.9	3.3
	Mar-17	12.6	-1.7	9.4	3.3
	Mar-18	14.0	0.9	13.2	3.6
	Mar-19	13.9	2.2	16.4	3.0
	Mar-20	14.2	0.0	14.1	3.2
	Mar-21	12.5	-0.7	13.3	3.4
	Mar-22	8.1	0.3	25.6	-1.8
Kaushalya Infrastructure Development Corporation Ltd-(Consolidated)	Mar-11	11.1	2.1	8.1	0.6
	Mar-12	11.1	3.0	8.5	0.4
	Mar-13	19.5	-7.6	3.3	0.5
	Mar-14	-71.8	-99.9	-5.4	0.6
	Mar-15	2.1	-119.5	-0.6	0.7
	Mar-16	-7181.5	-7285.5	-46.4	2.2
	Mar-17	-1416.4	-1179.8	-4.4	2.7
	Mar-18	-113.6	-147.1	-1.2	2.3
	Mar-19	66.7	66.0	20.9	0.7
	Mar-20	-3189.3	-3400.1	-9.0	0.8
	Mar-21	-30.0	28.1	3.4	0.6
KNR Constructions Ltd -(Consolidated)	Mar-11	14.8	5.8	24.6	0.2
	Mar-12	16.5	5.4	19.1	0.1
	Mar-13	15.4	6.5	13.7	0.3
	Mar-14	15.1	7.0	9.7	0.6
	Mar-15	15.8	6.2	5.1	0.9
	Mar-16	15.0	9.6	12.3	0.9
	Mar-17	16.3	6.0	11.9	0.8
	Mar-18	22.0	11.1	16.6	0.7
	Mar-19	24.0	11.5	18.1	0.6
	Mar-20	25.8	10.4	17.6	0.5
	Mar-21	24.4	13.1	23.2	0.4
Larsen & Toubro Ltd -(Consolidated)	Mar-11	16.6	8.7	16.1	1.5
	Mar-12	16.1	7.4	13.6	1.7
	Mar-13	16.2	7.1	13.4	2.0
	Mar-14	16.7	5.7	12.6	2.2
	Mar-15	15.4	5.4	10.9	2.2
	Mar-16	15.1	4.6	10.6	2.5
	Mar-17	15.2	5.9	12.2	2.3
	Mar-18	15.7	6.7	12.3	2.2
	Mar-19	15.6	7.6	13.3	2.3
	Mar-20	16.2	7.5	12.5	2.2
	Mar-21	15.9	9.5	15.0	1.7
	Mar-22	13.8	6.6	11.5	1.5
Madhucon Projects Ltd.-(Consolidated)	Mar-11	14.0	-22.6	0.4	4.0
	Mar-12	9.6	-69.5	-1.9	14.9
	Mar-13	31.9	-23.4	1.0	78.2
	Mar-14	22.6	-13.2	4.2	-45.4
	Mar-15	32.1	-0.1	9.8	-49.2
	Mar-16	35.3	1.0	12.7	-64.1
	Mar-17	19.7	-42.8	1.9	-9.4
	Mar-18	-4.8	-101.3	-3.2	-3.8
	Mar-19	6.1	-41.5	-2.8	-3.3
	Mar-20	6.4	-154.6	-118.7	-1.2
	Mar-21	-4.0	-28.8	-2.6	-1.4
Man Infraconstruction Ltd -(Consolidated)	Mar-11	16.1	10.6	19.2	0.0
	Mar-12	18.6	11.7	17.7	0.1
	Mar-13	8.7	11.0	11.0	0.0
	Mar-14	2.9	7.4	6.1	0.2
	Mar-15	11.0	17.5	11.9	0.2
	Mar-16	14.6	5.1	7.4	0.6

	Mar-17	24.5	14.5	15.8	0.4
	Mar-18	30.7	16.8	19.7	0.6
	Mar-19	27.1	11.6	11.8	0.6
	Mar-20	-0.9	-4.6	2.1	0.6
	Mar-21	22.6	7.8	9.8	0.7
MBL Infrastructures Ltd -(Consolidated)	Mar-11	13.7	5.2	25.8	1.0
	Mar-12	13.5	5.7	22.8	1.3
	Mar-13	10.8	4.2	14.0	1.7
	Mar-14	11.0	4.4	14.8	1.7
	Mar-15	12.5	4.0	13.7	1.7
	Mar-16	11.3	3.7	12.4	1.9
	Mar-17	1.2	-2.9	1.8	2.8
	Mar-18	11.4	-48.4	-0.1	2.6
	Mar-19	24.8	-159.5	-8.8	3.3
	Mar-20	-25.5	124.7	23.0	-24.8
	Mar-21	-7.5	21.2	1.4	42.2
	Mar-22	-25.3	0.1	-1.5	14.2
NCC Ltd -(Consolidated)	Mar-11	12.0	2.6	10.3	1.8
	Mar-12	14.0	0.9	9.5	2.1
	Mar-13	12.1	0.7	9.5	1.7
	Mar-14	10.3	-0.1	10.0	1.4
	Mar-15	10.4	0.4	12.2	1.0
	Mar-16	10.9	0.9	12.5	1.0
	Mar-17	8.0	0.1	9.1	0.7
	Mar-18	10.7	1.6	11.1	0.5
	Mar-19	12.5	4.4	18.7	0.6
	Mar-20	12.7	3.5	13.8	0.4
	Mar-21	11.6	3.5	12.3	0.4
	Mar-22	9.2	4.4	15.2	0.2
Patel Engineering Ltd -(Consolidated)	Mar-11	15.5	2.9	12.7	1.8
	Mar-12	12.7	1.9	10.5	1.9
	Mar-13	14.1	1.8	11.6	2.1
	Mar-14	13.8	3.3	10.2	2.4
	Mar-15	14.9	2.0	9.0	2.7
	Mar-16	11.1	-4.9	5.4	3.0
	Mar-17	11.1	-2.6	7.1	2.4
	Mar-18	23.5	4.6	11.3	1.4
	Mar-19	16.0	6.5	11.4	1.2
	Mar-20	7.1	0.3	6.4	0.9
	Mar-21	12.3	-14.6	0.8	0.9
	Mar-22	15.6	2.1	11.3	0.9
PNC Infratech Limited-(Consolidated)	Mar-11	11.5	6.3	28.2	0.3
	Mar-12	12.3	6.3	20.4	0.8
	Mar-13	12.4	6.9	13.4	1.0
	Mar-14	14.4	3.6	9.9	1.4
	Mar-15	15.4	4.9	10.7	2.0
	Mar-16	21.4	7.0	15.9	1.2
	Mar-17	23.6	5.8	13.6	1.4
	Mar-18	28.8	10.9	15.7	1.2
	Mar-19	24.4	10.3	16.2	1.4
	Mar-20	21.6	10.7	19.2	1.4
	Mar-21	24.5	8.6	19.1	2.2
Pratibha Industries Ltd -(Consolidated)	Mar-11	13.8	5.1	19.0	1.3
	Mar-12	13.5	4.5	17.1	3.0
	Mar-13	13.9	3.8	14.9	3.7
	Mar-14	14.3	0.7	10.8	3.8
	Mar-15	14.0	1.3	11.4	4.1
	Mar-16	17.1	0.6	16.0	6.0
	Mar-17	-14.1	-49.7	-5.6	19.8
	Mar-18	-201.0	-217.8	-70.6	-2.6
	Mar-19	-100.8	-418.4	-70.8	-1.3
Punj Lloyd Ltd -(Consolidated)	Mar-11	5.4	-1.0	4.6	1.6
	Mar-12	7.8	1.0	10.2	2.0

	Mar-13	9.6	-0.2	9.2	2.7
	Mar-14	4.7	-5.9	2.8	3.6
	Mar-15	-6.7	-15.7	-3.1	12.6
	Mar-16	-20.9	-46.5	-14.3	-5.0
	Mar-17	-18.4	-17.7	2.5	-4.3
	Mar-18	-4.2	-1.4	-3.3	-3.8
Ramky Infrastructure Ltd -(Consolidated)	Mar-11	11.9	6.9	19.5	1.1
	Mar-12	13.2	6.0	16.9	1.5
	Mar-13	11.6	4.7	12.9	1.6
	Mar-14	-15.2	-16.6	-5.8	2.4
	Mar-15	-14.1	-26.1	-3.0	4.1
	Mar-16	0.2	-2.1	9.8	7.7
	Mar-17	8.3	-0.7	13.1	6.8
	Mar-18	3.3	2.0	12.8	5.6
	Mar-19	11.3	0.0	11.6	4.9
	Mar-20	-2.0	-19.0	2.8	7.2
	Mar-21	10.9	1.8	9.6	6.4
Sadbhav Engineering Ltd -(Consolidated)	Mar-11	15.6	2.8	17.0	14.3
	Mar-12	14.7	4.1	10.2	2.7
	Mar-13	18.4	-1.4	6.0	3.6
	Mar-14	15.1	1.0	7.5	4.3
	Mar-15	17.3	-7.6	4.9	4.5
	Mar-16	24.6	-5.4	5.4	7.3
	Mar-17	27.7	-3.7	9.2	9.7
	Mar-18	23.4	-2.3	11.0	11.0
	Mar-19	28.0	-1.0	11.6	14.6
	Mar-20	32.8	31.7	116.2	0.2
	Mar-21	25.7	-10.6	16.2	-3.2
Simplex Infrastructures Ltd -(Consolidated)	Mar-11	8.5	2.6	13.9	1.5
	Mar-12	7.6	1.4	12.5	1.8
	Mar-13	7.9	0.8	9.7	2.1
	Mar-14	5.4	1.0	9.8	2.0
	Mar-15	9.7	0.4	8.2	2.3
	Mar-16	11.4	1.6	12.3	2.4
	Mar-17	11.5	2.4	13.0	2.2
	Mar-18	11.1	2.0	12.0	2.2
	Mar-19	5.8	2.0	11.7	1.8
	Mar-20	2.6	-8.0	0.6	2.2
	Mar-21	0.7	-21.3	-1.0	3.5
Simplex Projects Ltd -(Consolidated)	Mar-11	11.9	5.5	15.1	1.8
	Mar-12	10.6	0.2	6.1	1.8
	Mar-13	10.7	0.4	7.7	1.9
	Mar-14	9.0	0.2	7.1	2.1
	Mar-15	6.0	-6.9	3.7	2.7
	Mar-16	2.7	-20.3	-1.1	5.2
	Mar-17	9.9	0.5	5.6	5.8
	Mar-18	6.8	0.4	1.0	5.1
	Mar-19	6.6	0.5	0.6	5.7
SPML Infra Ltd -(Consolidated)	Mar-11	10.2	1.8	11.0	1.4
	Mar-12	14.1	1.3	10.8	1.4
	Mar-13	6.5	0.5	11.5	1.5
	Mar-14	-1.1	-0.9	10.5	1.8
	Mar-15	8.5	0.0	13.6	1.6
	Mar-16	10.7	-0.5	14.5	2.2
	Mar-17	5.8	-0.2	14.7	2.6
	Mar-18	10.9	2.3	14.1	2.6
	Mar-19	8.7	2.0	11.3	2.6
	Mar-20	3.6	0.4	9.3	4.0
	Mar-21	1.7	-17.2	-2.6	7.1
Unity Infraprojects Ltd -(Consolidated)	Mar-11	14.1	5.4	19.8	1.5
	Mar-12	15.6	5.1	24.2	1.5
	Mar-13	14.3	4.3	20.2	1.6
	Mar-14	12.1	0.3	5.7	2.8

	Mar-15	-2.6	-31.3	-1.4	6.0
	Mar-16	-36.0	-127.2	-6.7	-10.9
	Mar-17	-319.1	-466.9	-30.1	-3.4
Va Tech Wabag Limited-(Consolidated)	Mar-11	9.1	3.9	19.3	0.1
	Mar-12	9.0	5.1	20.8	0.2
	Mar-13	9.6	6.6	20.8	0.1
	Mar-14	8.4	5.1	21.8	0.2
	Mar-15	8.6	4.4	20.0	0.2
	Mar-16	9.0	3.6	17.3	0.4
	Mar-17	9.3	3.6	17.9	0.3
	Mar-18	8.4	4.3	17.2	0.4
	Mar-19	6.5	3.2	12.6	0.5
	Mar-20	8.9	3.3	15.6	0.4
	Mar-21	7.7	3.8	12.7	0.3
	Mar-22	8.0	4.4	12.7	0.3
Valecha Engineering Ltd -(Consolidated)	Mar-11	7.4	2.8	10.6	1.1
	Mar-12	10.1	2.2	8.5	1.9
	Mar-13	12.5	-1.1	7.7	2.5
	Mar-14	15.3	0.1	7.6	2.8
	Mar-15	6.1	-11.9	-0.3	4.3
	Mar-16	-9.7	-31.9	-10.0	41.2
	Mar-17	4.5	-45.6	-4.3	-1.4
	Mar-18	0.0	-90.0	-14.1	-1.4
	Mar-19	2.8	-71.2	-63.1	-1.0
	Mar-20	7.1	-65.1	12.7	-0.9
Welspun Enterprises Ltd-(Consolidated)	Mar-11	12.7	-11.8	3.4	0.8
	Mar-12	16.8	1.0	6.2	0.8
	Mar-13	25.3	1.1	5.5	0.8
	Mar-14	12.0	-25.5	-4.2	0.8
	Mar-15	-3.4	0.0	11.0	0.3
	Mar-16	-21.9	-0.6	0.4	0.1
	Mar-17	-5.3	1.1	1.6	0.1
	Mar-18	7.5	6.5	9.3	0.3
	Mar-19	10.5	7.1	13.6	0.4
	Mar-20	11.6	8.4	11.7	0.5
	Mar-21	11.3	8.5	11.6	16.7
	Mar-22	10.6	9.0	11.4	-36.4

Source: CRISIL Research

72.0 Operational data : Forecasts

Forecasts | National highways - Year-wise break-up of total length awarded (KM) by NHAI

National highways - Year-wise total length awarded (KM) by NHAI

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22E	2022-23P	2026-27P
4,344	4,336	7,394	2,222	3,211	4,818	6,306	5000-5500	4500-5001

P: Projected

Source: CRISIL Research

Forecasts | National highways - Total length constructed/ upgraded (KM) by NHAI

National highways - Total length constructed/ upgraded (KM) by NHAI

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22E	2026-27P
1,886	2,623	3,071	3,380	3,979	4,175	4,673	6250-6450

P: Projected

Source: CRISIL Research

Forecasts | National highways - Year-wise estimated investment (Rs billion)

National highways - Year-wise estimated investment (Rs billion)

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2023-27P
409.0	654.0	882.0	1,089.0	1,154.0	1,409.0	1,410.0	9566

P: Projected

Source: CRISIL Research

Forecasts | Rural roads - Year-wise investments (Rs billion) under PMGSY

Rural roads - Year-wise investments (Rs billion) under PMGSY

2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2023-27P
169.6	164.9	159.8	170.2	234.0	214.6	226.2	273.0	1,127.0

P: Projected

Source: National Rural Roads Development Agency, CRISIL Research

Forecasts | State roads - Overall investments (Rs billion)

State roads: Overall investments (Rs billion)

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2023-27P
887	1055	957	1204	1248	1,235.0	1,454.0	9,636.0

P: Projected

Source: RBI, CRISIL Research

Rural roads - Year-wise length constructed upgraded (KM) under PMGSY

2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2023-27P
35,154	47,446	48,402	49,038	27,056	37,700	41,969	161,000

P: Projected

Source: National Rural Roads Development Agency, CRISIL Research

78.0 Operational data : Operating metrics

Key Operating metrics

National Highway	Units	FY 2018	FY 2019	FY 2020	FY 2021	FY22	FY23P	FY24P
Total Awarding	km	7,397	2,222	3,211	4,818	6306	4800-5200	4500-5000
Total Execution	Km	3,071	3,380	3,979	4,175	4,673	5000-5500	5800-6200

Note : P: Projected

Source: NHAI, CRISIL Research

About CRISIL Limited

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong and Singapore.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

About Research

CRISIL Research is India's largest independent integrated research house. We provide insights, opinion and analysis on the Indian economy, industry, capital markets and companies. We also conduct training programs to financial sector professionals on a wide array of technical issues. We are India's most credible provider of economy and industry research. Our industry research covers 86 sectors and is known for its rich insights and perspectives. Our analysis is supported by inputs from our network of more than 5,000 primary sources, including industry experts, industry associations and trade channels. We play a key role in India's fixed income markets. We are the largest provider of valuation of fixed income securities to the mutual fund, insurance and banking industries in the country. We are also the sole provider of debt and hybrid indices to India's mutual fund and life insurance industries. We pioneered independent equity research in India, and are today the country's largest independent equity research house. Our defining trait is the ability to convert information and data into expert judgements and forecasts with complete objectivity. We leverage our deep understanding of the macro-economy and our extensive sector coverage to provide unique insights on micro-macro and cross-sectoral linkages. Our talent pool comprises economists, sector experts, company analysts and information management specialists.

Annexure - F

NATIONAL HIGHWAYS INFRA INVESTMENT MANAGERS PRIVATE LIMITED
Registered Office: G-5 & 6, Sector-10, Dwarka, New Delhi– 110075,
Tel: 011-25076536, FAX: 011-25076536 Email: nhiimpl@nhai.org
CIN: U65929DL2020GOI366835

Date: 30th August, 2022

The Listing Compliance Department **BSE Limited** Phiroze Jeejeebhoy Towers, Dalal Street, Mumbai - 400 001	**The Listing Department,** **National Stock Exchange of India Limited** Exchange Plaza, C-1, Block G, Bandra Kurla Complex, Bandra (East), Mumbai – 400 051

Ref: Scrip Code: 543385; Scrip ID/Symbol: NHIT

Subject: Outcome of Board Meeting of National Highways Infra Investment Managers Private Limited

Dear Sir/Madam,

This is to intimate that the Board of Directors of National Highways Infra Investment Managers Private Limited, the Investment Manager ("IM") of National Highways Infra Trust ("NHAI InvIT") at its meeting held on Tuesday,30th August, 2022 have ,inter alia, considered and approved the following matters:

1. Taking note of the valuation of the existing road assets ("R1 roads") as at 31st July 2022 by the Independent Valuer ,RBSA Valuation Advisors LLP ("RBSA") and consequent declaration of the net asset value (NAV).The valuation of NHAI InvIT as at 31st July,2022 as computed by management based on the Valuation Report issued by valuer is Rs. 107.12 per unit;
2. Taking note of the value discovered through the independent valuation by RBSA for the roads offered by NHAI ("R2 roads"). Further, the Board permitted NHAI InvIT to offer the discovered value to NHAI as the base consideration for book build and acquisition of the R2 roads subject to unit holders approval;
3. Raising of fresh funds through issuance of units through institutional placement and/or on a preferential basis or such other mode as may be permitted under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 and the rules, regulations, guidelines notifications and circulars issued thereunder (the "**InvIT Regulations**") and any other relevant applicable law subject to unit holders approval;
4. Raising of debt through various sources including term loans, non-convertible debentures and/or any other mode as may be permitted under the InvIT Regulations and any other relevant applicable law subject to unit holders approval ;and
5. Calling of 1st Extra-Ordinary Meeting ("EoM") of the Unitholders ("Unitholders") of National Highways Infra Trust ("NHAI InvIT"or "Trust") on Friday, September 23, 2022 at 5.00 p.m. (IST) through Video Conferencing ('VC')/ Other Audio-Visual Means ('OAVM') in accordance with the SEBI circular bearing reference no. SEBI/HO/DDHS/DDHS_Div2/P/CIR/2022/079 dated June 3, 2022 read with previous circulars and approval of the notice for calling of EOM.

The meeting concluded at 2.00 p.m.

We request you to take note of the same.

Sincerely,

For **National Highways Infra Trust**

By Order of the Board

National Highways Infra Investment Managers Private Limited

GUNJAN Digitally signed by GUNJAN
Date: 2022.08.30 17:44:49 +05'30'

Company Secretary and Compliance Officer

RBSA Valuation Advisors LLP

Contents

1. Executive Summary

National Highway Authority of India ("NHAI") was set up by an act of the Indian Parliament, NHAI Act, 1988. NHAI was set up with the primary objective of facilitating development, maintenance and Management of national highways in India. NHAI has been entrusted with National Highways Development Project, along with other minor projects.

National Highways Infra Trust ("NHIT" or the "Trust" or "InvIT") is registered with the Securities and Exchange Board of India ("SEBI") as an infrastructure investment trust under the SEBI InvIT Regulations. National Highways Infra Investment Managers Private Limited ("NHIIMPL" or the "Investment Manager") is acting as Investment Manager to the Trust, National Highway Authority of India ("NHAI" or "Sponsor") is acting as Sponsor to the Trust and IDBI Trusteeship Services Limited ("Trustee") is acting as the Trustee to the Trust, within the meaning of the SEBI InvIT Regulations.

National Highways Infra Projects Private Limited ("NHIPPL" or the "SPV") is a wholly owned subsidiary of the Trust, which has been incorporated as a special purpose vehicle to operate and maintain the road projects. NHIPPL has entered into concession agreements with NHAI to operate, maintain and transfer 5 Toll road projects under the Toll, Operate and Transfer ("TOT") model (together referred to as the "Specified Projects"). We understand that NHAI has offered the Trust additional three Toll road projects to operate, maintain and transfer under the TOT model, which is being evaluated by NHIIMPL.

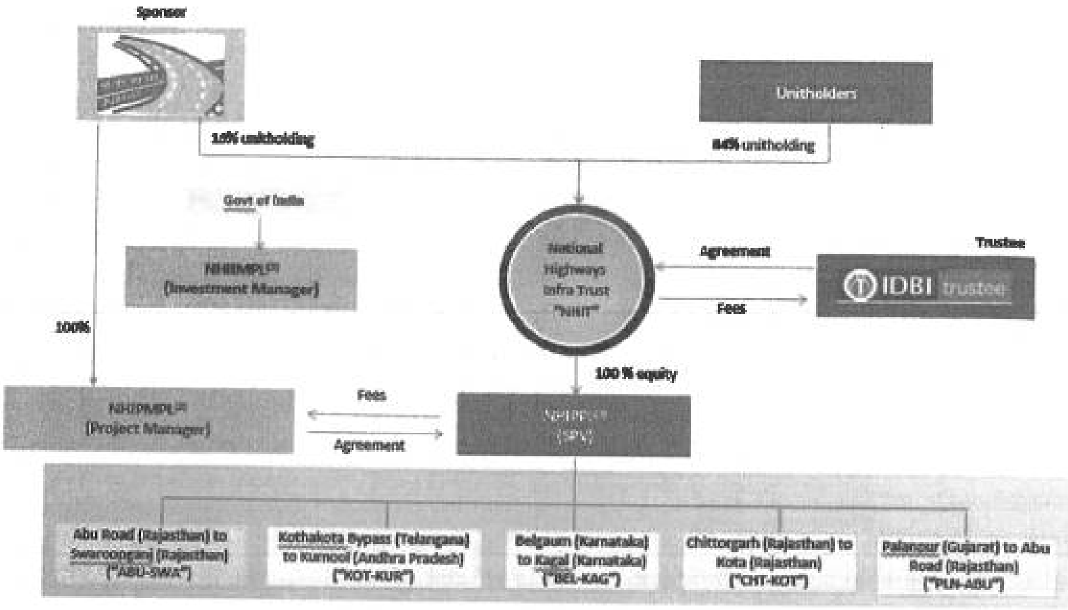
The Trust intends to undertake the fair valuation of the SPV encompassing the Specified Projects, as on 31st July 2022 ("Valuation Date") as per the SEBI InvIT Regulations.

In this regard, RBSA Valuation Advisors LLP has been appointed by the Investment Manager, as an independent valuer, as per Regulation 2(zzf) of the SEBI InvIT Regulations, for the purpose of carrying out the Valuation of National Highways Infra Projects Private Limited.

National Highways Infra Projects Private Limited comprises the following Specified Projects:

Sr. No.	Name of Section	NH	Total Length (Kms)	Toll Plaza	Start Kms	End Kms
1	Abu Road – Swaroopganj	NH-27	31.000	Undavariya	646.000	677.000
2	Chittorgarh – Kota & Chittorgarh Bypass	NH-27	160.500	Bassi, Aroli and Dhaneshwar	891.929	1052.429
3	Palanpur/ Khemana – Abu Road	NH-27	45.000	Khemana	601.000	646.000
4	Kothakota Bypass - Kurnool Highway	NH-44	74.622	Pullur	135.469	211.000
5	Maharashtra / Karnataka Border (Kagal) Highway	NH-48	77.705	Hattargi and Kognoli	515.000	592.705

National Highways Infra Trust Structure



****NHIPPL - National Highways Infra Projects Private Limited, NHIIMPL - National Highways Infra Investment Managers Private Limited***

Note:- National Highways Infra Trust Structure as on 31st July 2022.

Valuation Analysis

The Discounted Cash Flow ("DCF") method under the Income Approach has been adopted for the Enterprise Valuation of the SPV. Free Cash Flow to Firm method under DCF has been applied based on the projected financial statements of the SPV provided by the Management of NHIIMPL (the "Management"). The Enterprise Value has been computed by discounting the projected free cash flows to the firm (SPV) beginning from 1st August 2022 until the end of the concession period, using an appropriate Weighted Average Cost of Capital ("WACC").

The Investment Manager has appointed independent consultants to carry out Traffic study and estimation of toll revenue and Technical Due Diligence study for estimation of operating and maintenance expenses and major maintenance expenses, for each of the Specified Projects of the SPV over the concession period of 30 years ending on 15th December 2051. We have relied upon the Traffic Study reports and Technical Due Diligence reports provided by independent consultants on the Specified Projects of the SPV for the Enterprise Valuation of NHIPPL.

RBSA VALUATION ADVISORS LLP

Valuation of a company/ business is not a precise science and the conclusions arrived at in many cases will be subjective and dependent on the exercise of individual judgment. There is, therefore, no indisputable single value and we normally express our opinion on the value as falling within a likely range. However, considering the nature of the engagement, we have provided a single point value estimate. While we have provided our opinion on the enterprise value of NHIPPL based on the information made available to us and within the scope and constraints of our engagement, others may have a different opinion. Accordingly, we expressly disclaim all liability for any loss or damage of whatever kind which may arise from any person acting on any information and estimates contained in this Report which are contrary to the stated purpose.

While our work has involved an analysis of financial and other information provided by/ on behalf of the Management, our engagement does not include an audit in accordance with generally accepted auditing standards of NHIPPL existing business records. We have not carried out any independent technical evaluation or appraisal or due diligence of the assets or liabilities of the NHIPPL. Accordingly, we assume no responsibility and make no representations with respect to the accuracy or completeness of any information provided by/ on behalf of the Management. Our Report is subject to the scope, assumptions and limitations detailed hereinafter. As such the Report is to be read in totality, and not in parts, in conjunction with the relevant documents referred to herein and in the context of the purpose for which it is made.

The Union Transport and Highway Minister informed the Lok Sabha (the Lower House of the Indian Parliament) on 18th March 2021, that all physical toll booths across the National Highways network will be removed and a GPS-based toll collection system will be rolled out within one year. In light of this announcement made by the Honorable Minister, we have been given to understand by the Management that due to the current lack of clarity on the implementation plan and related financial information, it is too early and difficult to reasonably assess the impact of implementation of GPS-based toll collection system on toll operations and maintenance expenses in future for the Specified Projects and therefore, toll operations and maintenance expenses have been projected considering the existing toll collection system involving physical toll booths and FASTag.

We understand from the Management that the capital expenditure of ~ INR 598 Crore to be incurred over FY2023 and FY2024 shall be borne by the SPV.

Enterprise Valuation of NHIPPL as of 31st July 2022, has been carried out considering *inter-alia* Traffic Study and Technical Due Diligence Reports of independent consultants, Business plan/ Projected financial statements of NHIPPL and other information provided by/ on behalf of the Management, industry analysis and other relevant factors.

RBSA VALUATION ADVISORS LLP

The Valuation summary of NHIPPL as of 31st July 2022 is as follows:

SPV	WACC	Enterprise Value (INR Cr)	Equity Value (INR Cr.)
National Highways Infra Projects Private Limited ("NHIPPL")	10.50%	7,757.76	1,524.63

Particulars	In INR cr.
Enterprise Value	**7,757.76**
Less: Debt	-6,276.16
Less: Debt like	-3.52
Add: Cash and cash equivalent	46.56
Equity Value	**1,524.63**

RBSA VALUATION ADVISORS LLP

Annexure - G

IndiaRatings & Research
A Fitch Group Company

FitchGroup

Mr. Suresh Goyal
MD & CEO
National Highways Infra Investment Managers Pvt Ltd (On Behalf of National Highways Infra Trust)
G 5&6, Sector 10, Dwarka,
New Delhi - 110075

October 10, 2022

Dear Sir/Madam,

Re: Rating Letter for BLR & NCDs of National Highways Infra Trust

India Ratings and Research (Ind-Ra) has taken the following rating actions on National Highways Infra Trust (NHIT):

Instrument Type	Maturity Date	Size of Issue (million)	Rating/Outlook	Rating Action
Long-Term Issuer Rating	-	-	IND AAA/Stable	Affirmed
Proposed public issue of non-convertible debentures (NCDs)*^	-	INR15,000	IND AAA/Stable	Assigned
Proposed rupee term loan (RTL)^	-	INR8,500	IND AAA/Stable	Assigned
RTL	31 March 2041	INR20,000	IND AAA/Stable	Affirmed

*Yet to be issued

^The final ratings have been assigned on the receipt of the final valuation report, signed concession agreement, draft prospectus filed with the Securities and Exchange Board of India (SEBI) which has the debt terms and the representation from the management on key terms of the NCDs expected to be in line with the terms shared while assigning the provisional rating.

In issuing and maintaining its ratings, India Ratings relies on factual information it receives from issuers and underwriters and from other sources India Ratings believes to be credible. India Ratings conducts a reasonable investigation of the factual information relied upon by it in accordance with its ratings methodology, and obtains reasonable verification of that information from independent sources, to the extent such sources are available for a given security.

The manner of India Ratings factual investigation and the scope of the third-party verification it obtains will vary depending on the nature of the rated security and its issuer, the requirements and practices in India where the rated security is offered and sold, the availability and nature of relevant public information, access to the management of the issuer and its advisers, the availability of pre-existing third-party verifications such as audit reports, agreed-upon procedures letters, appraisals, actuarial reports, engineering reports, legal opinions and other reports provided by third parties, the availability of independent and competent third-party verification sources with respect to the particular security or in the particular jurisdiction of the issuer, and a variety of other factors.

Users of India Ratings ratings should understand that neither an enhanced factual investigation nor any third-party verification can ensure that all of the information India Ratings relies on in connection with a rating will be accurate and complete. Ultimately, the issuer and its advisers are responsible for the accuracy of the information they provide to India Ratings and to the market in offering documents and other reports. In issuing its ratings India Ratings must rely on the work of experts, including independent auditors with respect to financial statements and attorneys with respect to legal and tax matters. Further, ratings are inherently forward-looking and embody assumptions and predictions about future events that by their nature cannot be verified as facts. As a result, despite any verification of current facts, ratings can be affected by future events or conditions that were not anticipated at the time a rating was issued or affirmed.

India Ratings seeks to continuously improve its ratings criteria and methodologies, and periodically updates the descriptions on its website of its criteria and methodologies for securities of a given type. The criteria and methodology used to determine a rating action are those in effect at the time the rating action is taken, which for public ratings is the date of the related rating action commentary. Each rating action commentary provides information about the criteria and methodology used to arrive at the stated rating, which may differ from the general criteria and methodology for the applicable security type posted on the website at a given time. For this reason, you should always consult the applicable rating action commentary for the most accurate information on the basis of any given public rating.

Ratings are based on established criteria and methodologies that India Ratings is continuously evaluating and updating. Therefore, ratings are the collective work product of India Ratings and no individual, or group of individuals, is solely responsible for a rating. All India Ratings reports have shared authorship. Individuals identified in an India Ratings report were involved in, but are not solely responsible for, the opinions stated therein. The individuals are named for contact purposes only.

Ratings are not a recommendation or suggestion, directly or indirectly, to you or any other person, to buy, sell, make or hold any investment, loan or security or to undertake any investment strategy with respect to any investment, loan or security or any issuer. Ratings do not comment on the adequacy of market price, the suitability of any investment, loan or security for a particular investor (including without limitation, any accounting and/or regulatory treatment), or the tax-exempt nature or taxability of payments made in respect of any investment, loan or security. India Ratings is not your advisor, nor is India Ratings providing to you or any other party any financial advice, or any legal, auditing, accounting, appraisal, valuation or actuarial services. A rating should not be viewed as a replacement for such advice or services. Investors may find India Ratings ratings to be important information, and India Ratings notes that you are responsible for communicating the contents of this letter, and any changes with respect to the rating, to investors.

It will be important that you promptly provide us with all information that may be material to the ratings so that our ratings continue to be appropriate. Ratings may be raised, lowered, withdrawn, or placed on Rating Watch due to changes in, additions to, accuracy of or the inadequacy of information or for any other reason India Ratings deems sufficient.

Nothing in this letter is intended to or should be construed as creating a fiduciary relationship between India Ratings and you or between India Ratings and any user of the ratings.

In this letter, "India Ratings" means India Ratings & Research Pvt. Ltd. and any successor in interest.

We are pleased to have had the opportunity to be of service to you. If we can be of further assistance, please email us at infogrp@indiaratings.co.in

Sincerely,

India Ratings

Dr Devendra Pant
Senior Director

Annexure: Facilities Breakup

Instrument Description	Banks Name	Ratings	Outstanding/Rated Amount(INR million)
Rupee Term Loan	State Bank of India	IND AAA/Stable	10000
Rupee Term Loan	Axis Bank Limited	IND AAA/Stable	6000
Rupee Term Loan	Bank of Maharashtra	IND AAA/Stable	4000
Proposed Rupee Term Loan	Bank of Maharashtra	IND AAA/Stable	8500

CareEdge RATINGS

No. CARE/ARO/RL/2022-23/4733

Mr. Mathew George
Chief Financial Officer
National Highways Infra Trust
G 5, 6, Sector 10, Dwarka, South West,
New Delhi
Delhi 110075

October 10, 2022

Confidential

Dear Sir,

Issuer Rating

On the basis of recent developments including operational and financial performance of your Trust for FY22 (Audited) and Q1FY23 (Unaudited) and the possible impact of the same on the credit profile of your company our Rating Committee has reviewed the following rating:

Type of Rating	Rating[1]	Rating Action
Issuer rating	**CARE AAA (Is); Stable [Triple A (Issuer Rating); Outlook: Stable]**	**Reaffirmed**

2. The rating is only an opinion on the general creditworthiness of the Trust and not specific to any particular debt instrument.

3. The rating is subject to Consolidated Debt/ Enterprise Value not exceeding 49%.

4. The rationale and a write-up (press release) for the rating will be communicated to you separately.

5. CARE Ratings Ltd. reserves the right to undertake a surveillance/review of the rating from time to time, based on circumstances warranting such review, subject to at least one such review/surveillance every year.

6. CARE Ratings Ltd. reserves the right to revise/reaffirm/withdraw the rating assigned as also revise the outlook, as a result of periodic review/surveillance, based on any event or information which in the opinion of CARE Ratings Ltd. warrants such an action. In the event of failure on the part of the entity to furnish such information, material or clarifications as may be required by CARE Ratings Ltd. so as to enable it to carry out continuous monitoring of the rating, CARE Ratings Ltd. shall carry out the review on the basis of best available information. In such cases the credit rating symbol shall be accompanied by "ISSUER NOT COOPERATING". CARE Ratings Ltd. shall also be entitled to publicize/disseminate all the afore-mentioned rating actions in any manner considered appropriate by it, without reference to you.

7. Our ratings do not factor in any rating related trigger clauses as per the terms of the facility/instrument, which may involve acceleration of payments in case of rating downgrades. However, if any such clauses are introduced and if triggered, the ratings may see volatility and sharp downgrades.

[1]Complete definitions of the ratings assigned are available at www.careedge.in and in other CARE Ratings Ltd.'s publications.

8. Users of this rating may kindly refer our website www.careedge.in for latest update on the outstanding rating.

9. Our Issuer Ratings are **not** recommendations to buy or sell any securities of the issuer.

If you need any clarification, you are welcome to approach us in this regard.

Thanking you,

Yours faithfully,

Ritu Dalal
Analyst
ritu.dalal@careedge.in

Setu Gajjar
Assistant Director
setu.gajjar@careedge.in

CareEdge RATINGS

No. CARE/ARO/RL/2022-23/4728

Mr. Mathew George
Chief Financial Officer
National Highways Infra Trust
G 5, 6, Sector 10, Dwarka, South West,
New Delhi
Delhi 110075

October 10, 2022

Confidential

Dear Sir,

Credit rating for Proposed Public Issue of Non-Convertible Debentures

Please refer to our rating letter no. CARE/ARO/RL/2022-23/3613 dated August 25, 2022 assigning Provisional CARE AAA; Stable [Provisional Triple A; Outlook: Stable] to the proposed public issue of Non-convertible debenture amounting to Rs.1,500 crore.

We are now in receipt of the following documents:

a. Valuation report for the three road assets acquired under Round-2.

b. Copy of concession agreements entered by National Highways Infra Projects Private Limited (NHIPPL) with National Highways Authority of India (NHAI).

Pursuant to receipt of the above documents and fulfilment of other conditions along with recent developments including operational and financial performance of your Trust for FY22 (Audited) and Q1FY23 (Unaudited), our Rating Committee has reviewed the following ratings:

Sr. No.	Instrument	Amount (Rs. crore)	Rating[1]	Rating Action
1.	Public Issue of Non Convertible Debentures	1,500.00	CARE AAA; Stable (Triple A; Outlook: Stable)	Final Rating Confirmed
	Total Instruments	1,500.00 (Rs. One Thousand Five Hundred Crore Only)		

2. The proposed public issue of NCDs shall have a tenure of 25 years.

3. Please inform us the below-mentioned details of issue immediately, but not later than 7 days from the date of placing the instrument:

Instrument type	ISIN	Issue Size (Rs cr)	Coupon Rate	Coupon Payment Dates	Terms of Redemption	Redemption date	Name and contact details of Debenture Trustee	Details of top 10 investors

4. The rationale and a write-up (press release) for the rating will be communicated to you separately.

[1]Complete definitions of the ratings assigned are available at www.careedge.in and in other CARE Ratings Ltd.'s publications.

5. CARE Ratings Ltd. reserves the right to undertake a surveillance/review of the rating from time to time, based on circumstances warranting such review, subject to at least one such review/surveillance every year.

6. CARE Ratings Ltd. reserves the right to revise/reaffirm/withdraw the rating assigned as also revise the outlook, as a result of periodic review/surveillance, based on any event or information which in the opinion of CARE Ratings Ltd. warrants such an action. In the event of failure on the part of the entity to furnish such information, material or clarifications as may be required by CARE Ratings Ltd. so as to enable it to carry out continuous monitoring of the rating of the bank facilities, CARE Ratings Ltd. shall carry out the review on the basis of best available information throughout the life time of such bank facilities. In such cases the credit rating symbol shall be accompanied by "ISSUER NOT COOPERATING". CARE Ratings Ltd. shall also be entitled to publicize/disseminate all the afore-mentioned rating actions in any manner considered appropriate by it, without reference to you.

7. Our ratings do not factor in any rating related trigger clauses as per the terms of the facility/instrument, which may involve acceleration of payments in case of rating downgrades. However, if any such clauses are introduced and if triggered, the ratings may see volatility and sharp downgrades.

8. Users of this rating may kindly refer our website www.careedge.in for latest update on the outstanding rating.

9. CARE Ratings Ltd. ratings are not recommendations to buy, sell, or hold any securities.

If you need any clarification, you are welcome to approach us in this regard.

Thanking you,

Yours faithfully,

Ritu Dalal

Ritu Dalal
Analyst
ritu.dalal@careedge.in

Setu Gajjar
Assistant Director
setu.gajjar@careedge.in

Encl.: As above

Annexure -1

Proposed Non-convertible Debentures of Rs. 1,500 crore

Size of the Issue	Rs. 1,500 crore
Type of Instrument	Secured, redeemable, listed non-convertible debt securities
Tenure	Upto 25 years from the date of allotment
Coupon	To be decided

CareEdge RATINGS

No. CARE/ARO/RL/2022-23/4731

Mr. Mathew George
Chief Financial Officer
National Highways Infra Trust
G 5, 6, Sector 10, Dwarka, South West,
New Delhi
Delhi 110075

October 10, 2022

Confidential

Dear Sir,

Credit rating for bank facilities

Please refer to our rating letter no. CARE/ARO/RL/2022-23/3612 dated August 25, 2022 assigning Provisional CARE AAA; Stable [Provisional Triple A; Outlook: Stable] to the bank facilities amounting to Rs.850 crore and rating letter no. CARE/ARO/RL/2022-23/3532 dated August 22, 2022 reaffirming CARE AAA; Stable [Triple A; Outlook: Stable] to bank facilties amounting to Rs.2,000 crore.

We are now in receipt of the following documents:

a. Valuation report for the three road assets acquired under Round-2

b. Copy of concession agreements entered by National Highways Infra Projects Private Limited (NHIPPL) with National Highways Authority of India (NHAI)

Pursuant to receipt of the above documents and fulfilment of other conditions along with recent developments including operational and financial performance of your Trust for FY22 (Audited) and Q1FY23 (Unaudited), our Rating Committee has reviewed the following ratings:

Facilities	Amount (Rs. crore)	Rating[1]	Rating Action
Long Term Bank Facilities	850.00	CARE AAA; Stable (Triple A; Outlook: Stable)	Final Rating Confirmed
Long Term Bank Facilities	2,000.00	CARE AAA; Stable (Triple A; Outlook: Stable)	Reaffirmed
Total Facilities	2,850.00 (Rs. Two Thousand Eight Hundred Fifty Crore Only)		

2. Refer **Annexure 1** for details of rated facilities.

3. The rationale and a write-up (press release) for the rating will be communicated to you separately.

[1]Complete definitions of the ratings assigned are available at www.careedge.in and in other CARE Ratings Ltd.'s publications.

4. CARE Ratings Ltd. reserves the right to undertake a surveillance/review of the rating from time to time, based on circumstances warranting such review, subject to at least one such review/surveillance every year.

5. CARE Ratings Ltd. reserves the right to revise/reaffirm/withdraw the rating assigned as also revise the outlook, as a result of periodic review/surveillance, based on any event or information which in the opinion of CARE Ratings Ltd. warrants such an action. In the event of failure on the part of the entity to furnish such information, material or clarifications as may be required by CARE Ratings Ltd. so as to enable it to carry out continuous monitoring of the rating of the bank facilities, CARE Ratings Ltd. shall carry out the review on the basis of best available information throughout the life time of such bank facilities. In such cases the credit rating symbol shall be accompanied by "ISSUER NOT COOPERATING". CARE Ratings Ltd. shall also be entitled to publicize/disseminate all the afore-mentioned rating actions in any manner considered appropriate by it, without reference to you.

6. Our ratings do not take into account the sovereign risk, if any, attached to the foreign currency loans, and the ratings are applicable only to the rupee equivalent of these loans.

7. Our ratings do not factor in any rating related trigger clauses as per the terms of the facility/instrument, which may involve acceleration of payments in case of rating downgrades. However, if any such clauses are introduced and if triggered, the ratings may see volatility and sharp downgrades.

8. Users of this rating may kindly refer our website www.careedge.in for latest update on the outstanding rating.

9. CARE Ratings Ltd. ratings are **not** recommendations to sanction, renew, disburse or recall the concerned bank facilities.

If you need any clarification, you are welcome to approach us in this regard.

Thanking you,

Yours faithfully,

Ritu Dalal
Analyst
ritu.dalal@careedge.in

Setu Gajjar
Assistant Director
setu.gajjar@careedge.in

Encl.: As above

Disclaimer

The ratings issued by CARE Ratings Limited are opinions on the likelihood of timely payment of the obligations under the rated instrument and are not recommendations to sanction, renew, disburse or recall the concerned bank facilities or to buy, sell or hold any security. These ratings do not convey suitability or price for the investor. The agency does not constitute an audit on the rated entity. CARE Ratings Limited has based its ratings/outlooks based on information obtained from reliable and credible sources. CARE Ratings Limited does not, however, guarantee the accuracy, adequacy or completeness of any information and is not responsible for any errors or omissions and the results obtained from the use of such information. Most entities whose bank facilities/instruments are rated by CARE Ratings Limited have paid a credit rating fee, based on the amount and type of bank facilities/instruments. CARE Ratings Limited or its subsidiaries/associates may also be involved with other commercial transactions with the entity. In case of partnership/proprietary concerns, the rating /outlook assigned by CARE Ratings Limited is, inter-alia, based on the capital deployed by the partners/proprietor and the current financial strength of the firm. The rating/outlook may undergo a change in case of withdrawal of capital or the unsecured loans brought in by the partners/proprietor in addition to the financial performance and other relevant factors. CARE Ratings Limited is not responsible for any errors and states that it has no financial liability whatsoever to the users of CARE Ratings Limited's rating.

Our ratings do not factor in any rating related trigger clauses as per the terms of the facility/instrument, which may involve acceleration of payments in case of rating downgrades. However, if any such clauses are introduced and if triggered, the ratings may see volatility and sharp downgrades.

Annexure 1

Details of Rated Facilities

1. Long Term Facilities

1.A. Term Loans

Sr. No.	Name of Bank / Lender	Rated Amount (Rs. crore)	Debt Repayment Terms	Remarks
1.	State Bank of India	1,000.00	78 structured quarterly instalments commencing December 2021.	
2.	Axis Bank Ltd.	312.00		
3.	Axis Bank Ltd.	288.00		
4.	Bank of Maharashtra	208.00		Includes Bank Guarantee and Letter of Credit of Rs.20 crore as sublimit
5.	Bank of Maharashtra	192.00		
	Total	**2,000.00**		

1.B. Term Loans

Sr. No.	Name of Bank / Lender	Rated Amount (Rs. crore)	Debt Repayment Terms
1.	Bank of Maharashtra	850.00	Repayable in 20 years
	Total	**850.00**	

Total Long Term Facilities : Rs.2,850.00 crore

Total Facilities (1.A+1.B) : Rs.2,850.00 crore

Annexure H- Details of Sponsor, Investment Manager, Trustee, valuer, directors of the Trustee orInvestment Manager

The Sponsor – National Highways Authority of India

Head office and address for correspondence:

G-5 & 6,
Sector – 10,
Dwarka, New Delhi – 110 075

Contact Person of the Sponsor

NRVVMK Rajendra Kumar is the contact person of the Sponsor. His contact details are as follows:

NRVVMK Rajendra Kumar
G-5 & 6
Sector – 10, Dwarka
New Delhi 110 075
Tel: + 91 11 2507 4100 Extn: 1619
Fax: +91 11 2509 3605
Email: memberfinance@nhai.org
Website: www.nhai.gov.in

The Investment Manager - National Highways Infra Investment Managers Private Limited

Registered office and address for correspondence:

G - 5 & 6,
Sector 10, Dwarka,
New Delhi 110 075
Tel: +91 11 2507 6536
Fax: +91 11 2507 6536
Email: nhiimpl@nhai.org
Contact Person: Suresh Goyal

The IM Board

The IM Board is entrusted with the responsibility for the overall management of the Investment Manager. The Sponsor, acting together with MoRTH, have the right to nominate up to two directors on the Board of the IM. Please see below the details in relation of the IM Board:

Name, designation and DIN	Age	Address	Date of appointment	Details of other directorship	Whether wilful defaulter (Yes / No)
Name: Balasubramanyam Sriram **Designation**: Independent Director **DIN**: 02993708	64	Flat No B-1904, Bridgewood House of Hiranandani, 5/63 Rajiv Gandhi Salai Egattur, Kanchipuram, Tamilnadu 600 130	October 20, 2020	1. UPSIDC Power Company Limited; 2. National Highways Infra Investment Managers Private Limited; and 3. DME Development Limited.	No
Name: Suresh Goyal **Designation**: Managing Director **DIN**: 02721580	54	F 602, 6th Floor Block F Caitronia Resident Apartment Complex, Ambience Island, Nh 8, Gurgaon 122 010	October 20, 2020	1. Viom Infra Networks (Maharashtra) Limited; 2. National Highways Infra Projects Private Limited; and 3. National Highways Infra Investment Managers Private Limited.	No
Name: N.R.V.V.M.K. Rajendra Kumar **Designation**: Nominee Director[1] **DIN**: 09494456	52	A3, Dhanastra RBI Officers Quarters 122 N.P. Marg, Near Colaba Post Office, Mumbai 400 005	March 23, 2022	1. National Highways Infra Projects Private Limited; 2. National Highways Infra Investment Managers Private Limited; and 3. DME Development	No

Name, designation and DIN	Age	Address	Date of appointment	Details of other directorship	Whether wilful defaulter (Yes / No)
				Limited.	
Name: Mahavir Parsad Sharma **Designation**: Independent Director **DIN**: 03158413	64	H.No. 149 BE Block Janakpuri Delhi 110 058	October 20, 2020	1. National Highways Infra Projects Private limited; and 2. National Highways Infra Investment Managers Private Limited.	No
Name: Shailendra Narain Roy **Designation**: Independent Director **DIN**: 02144836	70	F – 10, Kailash Colony, Near Kailesh Colony Metro Station, New Delhi 110 048	October 10, 2020	1. L&T Employees Welfare Foundation Private Limited; 2. Landt Welfare Company Limited; 3. CG Power and Industrial Solutions Limited; 4. National Highways Infra Projects Private Limited; and 5. National Highways Infra Investment Managers Private Limited.	No
Name: Amit Kumar Ghosh **Designation**: Nominee Director[2] **DIN**: 01092172	55	House No. A-4, Tower 6 Floor 4, Type 6, Kidwai Nagar (East), New Delhi 110 023	August 6, 2021	1. UPSIDC Power Company Limited; 2. National Highways Infra Investment Managers Private Limited; and 3. DME Development Limited.	No
Name: Kavita Saha **Designation**: Non-Sponsor Director **DIN**: 03313543	51	B-006, Oberoi Springs CHS Limited, Off New Link Road, Near Monginis Cake Factory, Azad Nagar, Andheri West, Mumbai, Maharashtra, India 400053	November 20, 2021	National Highways Infra Investment Managers Private Limited	No
Name: Bruce Ross Crane **Designation**: Non-Sponsor Director **DIN**: 08403603	49	20 Ridley PK, Singapore 248492	November 30, 2021	1. National Investment and Infrastructure Fund Limited; and 2. National Highways Infra Investment Managers Private Limited.	No
Name: Pradeep Singh Kharola **Designation**: Independent Director **DIN**: 05347746	61	VI-12-C, 1st B Main, MCHS Colony, 6th Sector HSR Layout Bangalore, HSR Layout, Bangalore, Karnataka, India, 560102	December 14, 2021	National Highways Infra Investment Managers Private Limited	No

The Trustee – IDBI Trusteeship Services Limited

Registered Office and correspondence address

Asian Building, Ground Floor
17, R. Kamani Marg
Ballard Estate
Mumbai 400 001
Tel: +91 11 45708885
Fax:+91 22 6631 1776
E-mail: delhiitsl@idbitrustee.com
Contact Person: Deepak Kumar
Website: www.idbitrustee.com

Board of Directors of the Trustee

The board of directors of the Trustee is entrusted with the responsibility for the overall management of the Trustee. Please see below the details in relation of the board of directors of the Trustee:

Sr. No.	Name	DIN
1.	Samuel Joseph Jebaraj	02262530
2.	Pradeep Kumar Jain	07829987
3.	Madhuri Jayant Kulkarni	07787126
4.	Jayashree Vijay Ranade	09320683
5.	Padma Vinod Betai	00937921

Valuer

RBSA Valuation Advisors LLP
Unit No. 1121, 2nd Floor
Building No. 11, Solitaire Corporate Park
Guru Hargovindji Road, Chakala
Andheri East, Mumbai 400 093
Maharashtra, India
Contact Person: Ravishu Vinod Shah
Telephone No.: +91 22 6130 6000
Email id: ravishu.shah@rbsa.in
Website: www.rbsa.in
RVE Registration No: IBBI/RV-E/05/2019/110
RV No.: IBBI/RV/06/2020/12728

Annexure-I Total Operating Expenses of the InvIT for the period April 2022 to September 2022

OPERATING EXPENSES	Amount (in Crore)
Investment Manger Fees	6.07
Trustee Fees	0.05
Finance Charges	56.37
Other Expenses	0.51

Annexure J – Distribution

Distributions made in the last three financial years

The table below provides the Distributions made by the Trust, in accordance with the Distribution Policy in the last three financial years:

S. No.	Period ended	Distribution made per Unit	Nature of Distribution
1.	FY ended March 31, 2022*	Rs. 0.79**	Rs. 0.71 as return on capital and Rs. 0.08 as other income on surplus funds
2.	Three-months period ended June 30, 2022	Rs. 1.75***	Rs. 1.74 as return on capital and Rs. 0.01 as other income on surplus funds
1.	Three-months period ended September 30, 2022	Rs. 1.61****	Rs. 1.61 as return on capital

* *From the date of listing of the Trust on the Stock Exchanges, i.e. November 10, 2021.*

** *The distribution of Rs. 0.79 per unit comprises of Rs. 0.71 per unit as return on capital, Rs. 0.08 per unit as other income on surplus funds at Trust.*

*** *The distribution of Rs. 1.75 per unit comprises of Rs. 1.74 per unit as return on capital, Rs. 0.01 per unit as other income on surplus funds at Trust.*

**** *The Trust has made interim distribution to unit holders of Rs. 1.61 per unit as return on capital for the period from 01.07.2022 to 26.09.2022 on dated October 7, 2022.*

Annexure K – Material Litigations & Regulatory Actions

I. Litigation involving the Trust

There are no pending criminal, regulatory or other material litigations involving the Trust as on the date of the Draft Prospectus.

II. Litigations involving the Sponsor

Criminal matters

There are no pending criminal litigations involving the Sponsor as on the date of the Draft Prospectus.

Regulatory matters

In relation to the Sponsor, there is no pending litigation or legal action taken by a government department or a statutory body during the last three years immediately preceding the year of the issue of this Prospectus, except as disclosed below:

1. An application was filed by Amresh Singh against Union of India and others including NHAI before the National Green Tribunal ("**Tribunal**") alleging the rampant dumping of soil by NHAI contractors directly in the river Chenab and Tawi without prior environmental clearance. After considering all the documents placed on record, while referring the report of Monitoring Committee, the Tribunal was not satisfied with the actions taken by NHAI, and accepted the recommendations of the Monitoring Committee and directed the J&K Pollution Control Board to take appropriate actions in consultation with CPCB against the names mentioned in the report of the Monitoring Committee. The Bench also directed NHAI to take strict actions against the non-compliant contractors and sub-contractors at the HQ level. The matter is currently pending.

2. An application was filed before the National Green Tribunal Principal Bench, New Delhi regarding the Ghazipur Dump Site and the environmental problems that are caused due to the unsegregated, un-recycled large mountain of dump. The Sponsor was not a party to these proceedings till 2017 and East Delhi Municipal Corporation ("**EDMC**") had been exploring the implementation of a project to undertake the removal and processing of the municipal solid waste dumped at the site. In view of the same, the EDMC held discussions with the Sponsor for use of solid waste for construction of embankments in the expansion of NH-24 or other National Highway projects undertaken by the Sponsor. In view of our role, we were impleaded in the case in 2017. The matter is currently pending.

Material civil matters

The following material civil cases are initiated by Contractors/Concessionaires (hereinafter mentioned as the "**Claimant**") against the Sponsor in relation to various projects across India:

1. Ircon Soma Tollway Private Limited has initiated arbitration proceedings against the Sponsor in relation to the "improvement, operation and maintenance, rehabilitation and strengthening of existing 2-lane road and widening to 4-lane divided highway from km 380.000 to km 265.000 of NH-3 (Pimpalgaon-Dhule Section) in the state of Maharashtra". The claims relate to delay in handing over of existing right of way, payment made during the course of the project of Central Railways to expedite construction of road over bridge near Dhule Railway Station, financial implication on the project cost due to non-maintenance of the existing road and late award of the contract by the Sponsor and non-payment of outstanding O&M grants. The claim raised by Claimant amounts to Rs. 9425.202 million. The matter is no more pending for Arbitration. The Arbitral Tribunal has passed an award for Rs. 1335.1 million in favour of the Claimant.

2. Abhijeet Angul Sambalpur Toll Road Limited has initiated arbitration proceedings against the Sponsor in relation to the rehabilitation and up-gradation of four laning of the Angul-Sambalpur section of NH-42 in the State of Odisha. The claims raised relate to the compensation for losses suffered by the Claimant on account of delay in procurement of site and necessary approvals,

wrongful termination of the concession agreement and debarment from participation in bidding for future projects of the Sponsor. The claims raised by the Claimant amount to Rs. 2,0000 million. The Sponsor has also filed counter claim for Rs. 1,282,720 million. The matter is currently pending.

3. M/s Bhubaneshwar Expressway Private Limited has initiated arbitration proceedings against the Sponsor in relation to 4-laning of Bhubaneswar-Puri Section of NH-203 (Km 0.00 to Km 59.00) in the State of Odisha to be executed as BOT (Toll) basis on DBFOT pattern under NHDP- III. The claims were filed by the Claimant for termination payment, pre-reference interest on termination payment, pendente lite and future interest on termination payment: at 18% per annum and arbitration cost on actual basis. The Claimant has raised a claim for Rs. 7421.10 Million. The Sponsor has also filed counter claims against the Claimant for Rs. 757.10 million. The matter is currently pending

4. Madhucon Projects Ltd. (Barasat Krishnagar Expressway Limited) has initiated arbitration proceedings against the Sponsor in relation to Barasat-Krishnagar Section BOT (Annuity) in the State of West Bengal. The claims filed by the Claimant for loss due to interest on debt, loss due to interest on equity infused into the project, losses due to idling/underutilisation of machinery and equipment, losses due to idling/underutilisation of manpower, losses due to miscellaneous expenditure incurred at site, compensation due to delay in handing over of site, losses due to price escalation on the works already executed, losses due to expenses incurred on the works executed, loss of overheads and profit and total termination payment. The Claimant has raised a claim for Rs. 21,398.90 million. The Sponsor has also filed counter claims against the Claimant for Rs. 10,606.80 Million. The matter is currently pending.

5. Raiganj-Dalkhola Highways Limited has initiated arbitration proceedings against the Sponsor in relation to the "Four-Lanning of NH-34 in the Raiganj-Dalkhola Section from km 398 to km 452.750 in the State of West Bengal under NHDP Phase-III". The Claimant has sought compensation along with interest aggregating to Rs. 8,365.10 million and cost for arbitration for wrongful termination of the concession agreement. The Sponsor has also filed a counter claim against the Claimant for Rs. 8,542.90 million. The matter is no more pending. The Arbitral Tribunal has passed an order of Rs. 1875.00 million in favour of the Claimant vide order dated 07.10.2021.

6. M/s BSCPL Aurang Tollway Limited has initiated arbitration proceedings against the Sponsor in relation to four laning of Orissa Border-Aurang Section from Km 88.000 to Km 239.000 of NH-6 in the State of Chhattisgarh to be executed as BOT(Toll) on DBFOT pattern under NHDP Phase-IV. The claims filed by the Claimant were for delay in achievement of the provisional completion including project milestones, change of scope and change in law. The Claimant has raised a claim for Rs. 8,523.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 7,320.30 million. The matter is no more pending. The Arbitral Tribunal as passed an award of Rs. 2819.40 million in favour of the Claimant vide order dated 11.04.2022.

7. M/s Raipur Expressway Limited has initiated arbitration proceedings against the Sponsor in relation to improvement, operation, maintenance and strengthening of existing 2-lane road and widening to 4-lane divided highway from Km 239.000 to Km 281.000 of NH-6 (Raipur- Aurung Section) in the state of Chhattisgarh on BOT basis. The claims were filed by the Claimant for compensation due to delay in declaration of appointed date, compensation due to extension of time for project completion, damages for delay in providing right of way (ROW), claim on account of change of scope, claim for interest on delayed payments by the respondent, claim for loss of bonus due to arbitrary withdrawal of provisional completion certificate, claim on account of delay in releasing bank guarantees for retention money and claim for expenses and loss of profit due to delay in release of performance security. The Claimant has raised a claim for Rs. 10,121.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 4,231.70 million. The matter is currently pending.

8. M/s Ashoka Highway (Durg) Limited has initiated arbitration proceedings against the Sponsor in relation to design, engineering, finance, construction, operation & maintenance of end of Durg Bypass- Chhattisgarh/Maharashtra Border from Km 322.400 to Km 405.000 of NH-6 under NHDP. The Claimant has raised a claim for Rs. 2,866.10 million. The Sponsor has also filed counter claims against the Claimant for Rs. 56.60 million. The matter is currently pending

before arbitral tribunal. However, as both the parties want to settle the disputes, the matter has now been referred to conciliation committee (CCIE), with the consent of the parties, in terms of the policy circular dated June 2, 2017.

9. Jetpur Somnath Tollways Limited has initiated arbitration proceedings against the Sponsor in relation to Jetpur Somnath Section BOT (Toll). The claims filed by the Claimant for damages under the respective concession agreement for delay in non-fulfilment of all conditions precedent set forth in the concession agreement, Compensation for additional costs incurred by the Claimant towards deployment of plants, machineries and equipment during the extended construction period from October 1, 2014, up to November 10, 2016, compensation for additional cost incurred on account of inflation/price escalation of major input costs during the extended construction period from October 1, 2014, up to November 10, 2016, additional interest liability towards lenders (IDC) during construction period on account of extended construction period, compensation for additional cost incurred on account of EPC overheads during the extended construction period from October 1, 2014, up to November 10, 2016, additional compensation for delay (as per actuals/anticipated in the financial model) for the project period till September, 2016 on account of inability to collect toll fee for the entire stretch resulting from various material defaults by respondent, additional SPV incorporation charges resulting due to infusion of increased equity by the shareholders on account of material defaults by the respondent and interest cost on such shareholder's equity (unsecured debt from shareholders). The Claimant had raised a claim for Rs. 13,096.00 million. The Sponsor had also filed counter claims against the Claimant for Rs. 8,472.10 million. An award of Rs. 12,130 million in favour of the Claimant in the matter has been passed on July 31, 2021. The matter is no more pending in Arbitration.

10. M/s L&T Samakhiali Gandhidham Tollway Limited has initiated arbitration proceedings against the Sponsor in relation to 6-laning of Samakhiyali-Gandhidham Section of NH-8A from Km 306.00 to Km 362.160 in the state of Gujarat to be executed as BOT (Toll) on Design, Build, Finance, Operate and Transfer (DBFOT) under NHDP Phase-V. The claims filed by the Claimant for cost claim arising on account of change in law in terms of the relevant concession agreement, amount claimed under the relevant state support agreement ("**SSA**") for breach of obligations by us Government of Gujarat under the SSA, non-payment of compensation for absence of state support from the Sponsor from COD up to February 11, 2016, and cost claim due to delay in COD. The Claimant has raised a claim for Rs. 6,290.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 18,324.70 million. The matter is currently pending.

11. M/s IRB Ahmedabad Vadodara Super Express Tollway Private Limited has initiated arbitration proceedings against the Sponsor in relation to six laning of Ahmedabad to Vadodara Section of NH-8 from Km 6.400 to Km 108.700 (Length 102.300) in the State of Gujarat and improvement of Ahmedabad-Vadodara Expressway from Km 0.000 to Km 93.302 in the State of Gujarat (Length DBFOT) toll basis. The claims filed by the Claimant for competing road and premium not being payable, illegal demand of additional premium and interest by the respondent, illegal retention of performance bank guarantee by the respondent, wrongful retention of bank guarantees and compensation towards loss of interest and bank commission charge and cost of arbitration. The Claimant has raised a claim for Rs. 12659.40 million. The Sponsor has also filed counter claims against the Claimant for Rs. 5900.00 million. The matter is currently pending.

12. Gwalior Jhansi Expressways Limited has initiated an arbitration proceeding against the Sponsor in relation to the designing, development and maintenance of certain sections of NH-75 in the States of Uttar Pradesh and Madhya Pradesh. The claims relate to compensation for non-payment of annuities and interest, for additional direct costs incurred by the Claimant due to material breach of the concession agreement and additional costs incurred by the Claimant in respect of interest payments during the construction period beyond the scheduled project completion date. The claims raised by the Claimant amount to Rs. 20,611.5 million. The Sponsor has also filed a counter claim against the Claimant for the failure relating to compliance of the maintenance obligation, reimbursement of one-half of remuneration, costs and expenses of the independent consultant, delayed cost due to time overrun and also on account of loss of toll revenue due to delay. The counter claim is for an amount of Rs. 13980.00 million. The said matter is currently pending.

13. M/s Indore Dewas Tollways Limited. has initiated arbitration proceedings against the Sponsor in relation to 6-laning of Indore-Dewas Section of Nh-3 from Km 577.550 to Km 610.000 and Km 0.000 to Km 12.600 (approx. length 45.05Km) in the State of Madhya Pradesh under NHDP Phase-V to be executed as BOT(Toll) project on DBFOT pattern. The claims filed by the Claimant for claim for utilization of resources beyond the scheduled 6-laning date, as envisaged in the respective concession agreement, compensation for Claimant's loss towards additional interest during construction, compensation towards Claimants loss of toll revenue attributable to respondents misrepresentation and subsequent default in maintaining feeder roads, refund of additional concession fee/premium paid by the Claimant, compensation/indemnification towards loss of profit claimants EPC contractor. The Claimant has raised a claim for Rs. 10709.60 million. The Sponsor has also filed counter claims against the Claimant for Rs. 5353.40 million. The matter is currently pending.

14. GVK Shivpuri Dewas Expressway Private Limited has initiated arbitration proceedings against the Sponsor in relation to the designing, development and maintenance of the Shivpuri-Dewas Section of NH-3 in the State of Madhya Pradesh. The claims raised by the Claimant relate to the return of the performance bank guarantee upon termination of the contract by us and compensation for the losses suffered by the Claimant due to delay in receiving environmental clearances. The claims raised by the Claimant amount to Rs. 5,521.40 million. The Sponsor has also filed a counter claim against the Claimant for amounts incurred on account of maintenance and management of the existing stretch, estimated expenses on account of retendering and on account of loss of premium. The counter claim is for an amount of Rs. 10,761.00 million. The matter has now been settled for release of Performance Bank Guarantee by NHAI amounting to Rs. 281.50 vide settlement agreement dated 16.09.2021.

15. M/s GVK Deoli Kota Expressway Private Limited has initiated arbitration proceedings against the Sponsor in relation to design, construction, development, finance, operation and maintenance of four laning of Deoli- Kota Section of NH-12 from Km 165.000 to Junction of NH-76 on Kota Bypass (approx. length 83.04 Kms) in the State of Rajasthan on BOT(Toll) project on DBFOT pattern under NHDP phase- II. The claims filed by the Claimant for claim on account of prolongation costs and extended stay at the site, loss suffered on account of additional overhead and loss of profit, loss of toll revenue, claim on account of increase in cost of the project due additional works done by the Claimant owing to the change of scope, claim on account of additional expenses incurred by the Claimant towards tunnel work, claim on account of excessive repair and prolonged maintenance duration of existing road, claim on account of the Respondent in making the termination payment and claim on account of future loss to Claimant. The Claimant has raised a claim for Rs. 60130.00 million . The Sponsor has also filed counter claims against the Claimant for Rs. 5657.60 million. The matter is currently pending.

16. Soma Isolux Kishangarh-Beawar Tollway Private Limited has initiated arbitration proceedings against the Sponsor in relation to the "improvement, operation and maintenance, rehabilitation and strengthening of the existing 2 lane road and widening it to six-lane divided highway from km 364.125 to km 58.245 (approximately 93.56 km) on the Krishangarh-Ajmer-Beawer section of National Highway". The claim relates to compensation for increase in overheads due to extended construction period, for additional cost due to loss of productivity, idling and under-utilization of plant & equipment during the extended period and for costs incurred towards interest payments on debt during the extended construction period. The claims raised by Claimant amounts to Rs. 11,968.00 million. The Sponsor has also filed counter claims against Claimant for Rs. 3,109.5 million. The matter is currently pending.

17. Panipat Jalandhar NH One Tollway Private Limited has initiated arbitration proceedings against the Sponsor in relation to six laning of Panipat-Jalandhar section of NH-1 (km 96.00 to km 387.100) in the state of Haryana and Punjab. The claims filed by the Claimant were in relation to delay in finalization of toll plaza and commencement of toll operations at approved locations, loss of fee revenue on account of defaults, extension of project completion schedule and change in scope and other claims. The Claimant has raised a claim for Rs. 70,359.00 million. The Sponsor has also filed counter claims against Claimant for Rs. 32,847.00 million. The matter is currently pending.

18. M/s. Shapoorji Pallonji & Company Private Limited has initiated arbitration proceedings

against the Sponsor in relation to Jammu-Udhampur section BOT (Annuity). The claims filed by the Claimant in relation to declaration of provisional completion certificate date as June 1, 2014 with consequential reliefs of bonus for the period from January 7, 2014 to May 31, 2014, determination of appointed date and payment of bonus from July 5, 2014, compensation for additional cost arising out of change in methodology of rock excavation due from July 10, 2014, and compensation for additional cost arising out of change in methodology of tunnel rock excavation from October 17, 2014. The Claimant has raised a claim for Rs. 9,383.40 million. The Sponsor has also filed counter claims against the Claimant for Rs. 14,940.00 million. The matter has now been settled for Rs. 2826.7 million vide agreement dated 28.02.2022.

19. M/s Bareilly Highways Project Limited has initiated arbitration proceedings against the Sponsor in relation to four laning of Bareilly-Sitapur section of NH-24 from Km 262.000 to Km 413.200 (approx. 151.200km) in the State of Uttar Pradesh under NHDP Phase-III of DBFOT basis. The claims filed by the Claimant were in relation to claim for additional interest on debt beyond SPCD (i.e. between August 23, 2013 to January 31, 2019), interest for additional interest on debt beyond SPCD, claim for interest due on additional promoters contribution infused in the project, claim for interest due on delay release of grant, claim for expenses incurred by SPV company beyond SPCD, claim for interest for cost of land compensation, claim for net revenue loss from SPCD till January 31, 2019, interest for net revenue loss from SPCD till January 31, 2019, claim for interest on excess 50% independent engineering cost debit by the Sponsor, claim for reimbursement of GST on regular EPC invoices-change of law, claim for interest on claim of GST on change of scope & utility shifting, claim for direct expenses incurred by EPC contractor beyond SPCD, claim for plant and machinery rental/rehandling for extended period, claim for interest for plant and machinery/rental/rehandling for extended period, claim for price escalation during the extended period, claim for interest for price escalation during the extended period, claim for expenses incurred on change of scope/variation items, claim for interest for change of scope/variation items, claim for additional transportation cost due to ban in local mining at sites, claim for interest for additional transportation cost due to ban in local mining at sites. The Claimant has raised a claim for Rs. 37,211.40 million. The Sponsor has also filed counter claims against the Claimant for Rs. 17049.80 million. The matter is currently pending.

20. M/s Lucknow-Sitapur Expressways Limited has initiated arbitration proceedings against the Sponsor in relation to improvement, operation and maintenance including strengthening and widening of existing two lane road to four lane dual carriageway from km 488.270 – km 413.200 of NH -24 (Lucknow Sitapur Section) in the State of Uttar Pradesh on BOT basis. The claims filed by the Claimant for revenue loss, revenue loss due to delay in COD, revenue loss from start of toll collection, EPC escalation, EPC additional overhead, EPC overstay of plant and equipment, additional maintenance cost of EPC, loss of profit earning capacity, extra cost IDC, revenue loss due to overloading and claims for underpasses. The Claimant has raised a claim for Rs. 7,470 million. The Sponsor has also filed counter claims against the Claimant for Rs. 3,270.00 million. The matter is currently pending.

21. M/s PNC Kanpur Highways Limited has initiated arbitration proceedings against the Sponsor in relation to two-laning with paved shoulder of Kanpur to Kabrai Section of NH-86 from Km 7.430 to Km 130.100 in the State of Uttar Pradesh on DBFOT basis. The claims filed by the Claimant were in relation to demand for increased overheads due to delay in appointed date, demand against additional cost suffered due to idling of plants and equipment due to delayed appointed date, damages for delay in handing over site as per provisions of the relevant concession agreement, demand against additional costs suffered on account of inflation/price escalation on cost of major inputs/resources due to delayed appointed date and extended construction period, demand for compensation against overheads due to extended stay than planned stay, demand for additional cost suffered due to extended stay of plants and equipment than planned duration, demand for additional interest liability suffered during construction period on account of extended construction period, demand for loss of revenue suffered due to non-realization of user fee collection from July 14, 2014 to May 5, 2015, demand for loss of revenue suffered due to suspension of collection of user fee at toll plazas on NHs due to demonetization of Rs. 500 and Rs.1,000 currency notes, demand for loss of earning capacity and profit suffered due to extension of construction period, demand for loss suffered on equity due to delayed return on investment on account of delayed realization of toll revenues due to delay in declaration of appointed date, extended construction period and delay in PCOD, demand in lieu of interest on amounts raised under the various claims as above in accordance

with the respective due dates of payment, the contractual provisions and the law. The Claimant had raised a claim for Rs. 6,180.00 million. An award of Rs. 2,503.90 million in the matter has been passed on April 23, 2021 in favour of the Claimant. The matter is no more pending in Arbitration.

22. M/s Tantia Raxaul Private Limited has initiated arbitration proceedings against the Sponsor in relation to two laning with paved shoulder of Pioprakothi to Raxaul Section of NH-28A from Km 0.600 to Km 62.064 in the state of Bihar. The claims filed by the Claimant were in relation to claim for termination payment for default of respondent, claim for non-finalisation of location and correct notification for toll plaza (along with interest at the rate of 18%), claim for delay in handover for land/ right of way/ site (along with interest at the rate of 18%), claim for additional interest during construction on account of extended construction period, claim for increased distance/lead for stone aggregate, claim for inflation/ price escalation (along with interest at the rate of 18%), claim for additional cost of maintenance, claim for increased overheads of concessionaire (along with interest at the rate of 18%), claim for increased overheads of EPC contractor (along with interest at the rate of 18%), claim for idling/underutilisation of plant, machinery & equipment, and claim for loss of profits of EPC contractor. The Claimant has raised a claim for Rs. 9,861.70 million. The Sponsor has also filed counter claims against the Claimant for Rs. 2,873.60 million. The matter is currently pending.

23. M/s Haridwar Highways Project Limited has initiated arbitration proceedings against the Sponsor in relation to the four laning of Muzaffarnagar-Haridwar Section from Km 131.00 to Km 211.000 of NH-28 in the state of UP and Uttarakhand under NHDP Phase-II as BOT (Toll) on DBFOT pattern. The claims filed by the Claimant were in relation to financial expenses incurred by the Claimant beyond the scheduled commercial operation date till February 2019, interest payable on compensation for delay in handing over of the land form from appointed date till February, 2019, interest due on delay towards release of grant from February 7, 2013, up to February, 2019, claim for reimbursement of GST on regular bills/invoices of the Claimant from July, 2016, claims for expenses incurred by the Claimant on rentals of plants and machinery beyond SCOD, claims for expenses incurred by the Claimant on rentals of plants and machinery beyond SCOD till February 2019, claim for expenses incurred by the Claimant due to price escalation beyond the SCOD up to February 2019, additional transportation cost due to ban on mining at sites, claim for direct expenses incurred beyond SCOD up to February 2019, expenses incurred on existing road maintenance beyond SCOD and claim on account of amount recovered for Dehradun Highway Project Limited. The Claimant has raised a claim for Rs. 22,060.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 22,260.00 million. The matter is currently pending.

24. Madhucon (Madurai-Tuticorin Expressways Limited) has initiated arbitration proceedings against the Sponsor in relation to the "Design, Engineering, Finance, Construction, Operation and Maintenance of Madurai-Tuticorn Section from km 138.800 to km 264.50 of NH-45B in the State of Tamil Nadu under NHDP Phase IIIA". The claims relate to compensation payable due to prolongation of the project, refund of liquidated damages, change of scope of work, loss of business opportunity, loss on account of shortfall in revenue from the project and amount payable on account of price escalation during the extended period of construction. The claim raised by Claimant amounts to Rs. 81,993.10 million. The Sponsor has also filed counter claims against the Claimant for Rs. 2,902.60 million. The said matter is currently pending.

25. M/s Chennai Elevated Toll Way Limited has initiated arbitration proceedings against the Sponsor in relation to the new four lanes elevated road from Chennai Port to Maduravoyal (NH-4) in the State of Tamil Nadu under NHDP Phase-VII on BOT(Toll) basis. The claims filed by the Claimant were in relation to termination payment, claims payable to the EPC contractor, claim for additional cost due to idling/ underutilization/ prolongation of plants & equipment, loss of profit payable to the EPC contractor due to delay and termination of the contract, loss of opportunity to the EPC contractor due to delay and termination of the contract, claims for infructuous expenditure for setting up camps, site approach, road development etc. The Claimant has raised a claim for Rs. 41,071.80 million. The Sponsor has also filed counter claims against the Claimant for Rs. 21,632.70 million. The matter is no more pending in Arbitration. The Arbitral Tribunal has passed an award of Rs. 21179.50 million in favour of the Claimant and of Rs. 261.00 million in favour of the Sponsor vide order dated 24.11.2021.

26. Trichy Thanjavur Expressways Limited has initiated arbitration proceedings against the Sponsor in relation to the "design engineering, financing, construction, operation and maintenance of Thanjavur-Trichy Section from km 80.000 to km 135.750 of NH-67 in the State of Tamil Nadu". The claims relate to the compensation payable on account of losses due to prolongation of the project, change in scope, losses on account of shortfall in revenue and loss of business opportunity and profit. The claims raised by the Claimant amounts to Rs. 29,906.70 million. The matter is currently pending.

27. M/s SU Toll Road Private Limited. has initiated arbitration proceedings against the Sponsor in relation to Salem-Ulundurpet Section from Km. 0.313 km 136.670 of NH – 68 in the State of Tamil Nadu under NHDP Phase – IIIA on Build, Operate and Transfer (BOT) basis. The claims filed by the Claimant for compensation were in relation to additional expenses incurred on account of extended stay of plant and equipment at the site, compensation for additional overheads in the extended construction period, compensation on account of the loss of opportunity to earn profits due to extended construction period, interest paid to the lenders due to delay in completion of project as per the original schedule and compensation for revenue loss due to delay in issuance of COD. The Claimant has raised a claim for Rs. 14,623.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 2,261.90 million. The matter is no more pending in Arbitration. The Arbitral Tribunal has passed a 'Nil' award for the claims of the Claimant and of Rs. 570.30 million in favour of the Sponsor vide order dated 08.10.2021.

28. M/s T K Toll Road Private Limited. has initiated arbitration proceedings against the Sponsor in relation to design, engineering, finance, construction, operation and maintenance of Trichy to Karur Section of NH-67 from Km 135.800 to Km 218.028 (excluding Lalaper ROB) in the state of Tamil Nadu under NHDP Phase-IIIA on BOT basis. The claims filed by the Claimant were in relation to extended stay of plant and equipment from July 15, 2010 to February 23, 2014, increase in cost of input materials, fuel and labour expenses incurred in the extended period from July 15, 2010 to February 23, 2014, loss of revenue due to delay in provisional completion certificate from July 15, 2010, to February 23, 2014, overhead cost for the extended in the extended construction period, reimbursement of cost incurred for works executed in Trichy bypass (Km 135.800 to 154.400) on account of deletion of stretch from the purview of the relevant concession agreement, compensation for delay in payment of grant by the respondent, additional cost incurred on account of interest paid at higher rate of interest to lenders due to extended construction period from July 15, 2010 to February 23, 2014. The Claimant has raised a claim for Rs. 11,177.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 210.00 million. The matter is currently pending.

29. M/s MEP Chennai Bypass Toll Road Private Limited has initiated arbitration proceedings against the Sponsor in relation to operation and maintenance of Chennai Bypass section from Km 0.000 to Km 32.600 of NH-4 & 5 in the State of Tamil Nadu on OMT basis. The claims filed by the Claimant were in relation to amount due towards concession fee (up to April 8, 2016), damages for non-completion of project facilities calculated up to April 8, 2016, amount due towards non-fulfilment of condition precedent and damages for non-maintenance of project highway calculated up to April 8, 2016. The Claimant has raised a claim for Rs. 5,033.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 8,704.30 million. The matter is currently pending.

30. M/s Suncon-Soma (JV) has initiated arbitration proceedings against the Sponsor in relation to four lane national highway connectivity to ICTT at Vallarpadam, Cochin, in the State of Kerala (17.200 km). The claims filed by the Claimant were in relation to compensation for additional expenditure incurred for transporting materials through extra distance to the construction sites due to non-handing over of land, payment of price variation/adjustment for utility shifting works, compensation of price variation/adjustment for utility shifting works, compensation payable consequent to prolongation of the contract and for costs of arbitration. The Claimant has raised a claim for Rs. 5,312.00 million. The Sponsor has also filed counter claims against Claimant for Rs. 1,027.30 million. The matter is currently pending.

31. M/s Kurukshetra Expressway Private Limited has initiated arbitration proceedings against the Sponsor in relation to four laning of Rohtak-Bawal section of NH-352 (Old NH-71) from Km 363.300 (Design Km. 363.300) to Km 450.800 (Design Km 445.553) under NHDP-III in the

State of Haryana on DBFOT basis. The claims were raised under the terms of the relevant concession agreement. The Claimant has raised a claim for Rs. 9,150.00 million. The matter is currently pending.

32. M/s JSR Mulbagal Tollways Private Limited has initiated arbitration proceedings against the Sponsor in relation to 4-laning of Mulbagal-AP/Karnataka Border Section of NH-75 (Old NH-4) from Km 216.912 to Km 239.100 in the state of Karnataka to be executed on design, build, finance, operate and transfer (DBFOT/BOT) basis in BOT (Toll) mode under NHDP Phase-III. The claims filed by the Claimant are in relation to the amount payable to the Claimant in the event of termination by concessionaire and / or by the authority, the interest on the capital/equity of the concessionaire, loss for underutilization / idle of resources deployed in the way of man power, towards machineries, plant and equipment beyond the date of completion for about 29 months, loss of profit, loss of return envisaged by the concessionaire as a result of default of the authority, amount spent towards the short fall of subsistence revenue, losses due to price escalation, revenue that might have generated by the Claimant through advertisements and loss due COVID-19. The Claimant has raised a claim for Rs. 21,332.50 million. The Sponsor has also filed counter claims against the Claimant for Rs. 119.30 million. The matter is currently pending.

33. The Sponsor has initiated arbitration proceedings against M/s Transstroy Hoskote-Dobbaspet Tollway Private Limited in relation to the four laning of Hoskote-Dobbaspet section of NH-207 from Km 58.300 to Km 138.320 in the State of Karnataka under NHDP, Phase-IV to be executed on DBFOT (Toll) basis. The claims filed by the Sponsor were in relation to damages on account of non-achievement of prescribed milestones, claim and recovery towards escalation in price and additional cost of the project, compensation for loss of goodwill and reputation, special repair to damaged portion of bypass portion of existing road of Hoskote-Dobbaspet section of NH-207 from Km 58+300 to Km 138+320 by a third party, routine maintenance and special repair to existing road of Hoskote – Dobbaspet section of NH-207 other than the bypass portion by M/s. Nikhil Infra Projects Private Limited. The Sponsor has raised a claim for Rs. 35,415.80 million. The right of the Concessionaire/Respondent to file Counter claims against the Sponsor has been forfeited. The matter is currently pending.

34. M/s Rohtak Panipat Tollway Private Limited has initiated arbitration proceedings against the Sponsor in relation to the four laning of Rohtak-Panipat Section of NH-71A from Km 0.00 (Km 63.300) of NH-10 to Km 80.58 (Km 83.500 of NH-1) in the State of Haryana on DBFOT basis under NHDP Phase-III. The claims filed by the Claimant were raised in terms of the relevant concession agreement. The Claimant has raised a claim for Rs. 11,509.30 million. The matter is currently pending and is under conciliation.

35. M/s Ranchi Expressway Limited has initiated arbitration proceedings against the Sponsor in relation to the four laning of Ranchi- Rargaon-Jamshedpur Section from Km 114.00 to Km 277.500 of NH-33 in the State of Jharkhand on BOT(Annuity) basis under NHDP Phase-II. The claims filed by the Claimant were in relation to payment towards value of work done, amount payable towards maintenance of existing road, refund of amount expended on interest during construction, compensation payable due to delay in handling over of land, extra expenditure due to escalation of cost of work done, loss incurred due to idling of machinery due to prolongation of project, loss of overheads due to prolongation of project, loss of overheads and profits on value of work done due to illegal termination and claim for amount of revenue loss (loss of annuity). The Claimant has raised a claim for Rs. 89,402.50 million. The Sponsor has also filed counter claims against the Claimant for Rs. 2,6281.80 million. The matter is currently pending.

36. M/s Navayuga Bangalooru Tollways Private Limited has initiated arbitration proceedings against the Sponsor in relation to the development and the capacity improvement of the existing carriageways from km 10.000 to 29.500, on the Bangalore Nelamangala section of the National Highway No.4 (NH-4) in the State of Karnataka on BOT basis. The claims filed by the Claimant were in relation to loss of toll revenue, force free run, change in law, loss of toll revenue on account of non revision of toll rates, termination payment & compensation and impact of Covid-19. The Claimant has raised a claim for Rs. 15000.00 million. The Sponsor is yet to file its counter claims against the Claimant. The matter is currently pending.

37. M/s Millennium City Expressways Private Limited has initiated arbitration proceedings against

the Sponsor in relation to the 8/6 lane highway from km.14.300 to km. 42.000 at Delhi-Gurgaon section of NH-8 on BOT basis. The claims filed by the Claimant were in relation to the loss of profit on account of closure of the km 24 Toll Plaza, loss of profit on account of commissioning of the competing/alternate road facilities alternatively, extension of concession period by a period of ninety four months, loss of profit suffered due to failure to provide requisite security at the main toll plaza, thereby resulted in loss of toll revenue from the residents of nearby 31 villages, works carried out by the Claimant as change of scope, which were over and above the project agreements, payment for which remains pending despite the Claimant having already completed such additional works, Compensation/extension due to Demonetization, Compensation/extension due to Pandemic/Covid,. The Claimant has raised a claim for Rs. 24160.00 million. The Sponsor has also filed counter claims against the Claimant for Rs. 10440.00 million. The matter is currently pending.

38. M/s EMAS Expressway Private Ltd. has initiated arbitration proceedings against the Sponsor in relation to the Four - laning including strengthening of existing two lane pavement from Palsit (Km. 581.457) to Dhankuni (Km. 646.000) section of NH-2 in the state of the West Bengal - Request for reference to arbitration in respect of disputes arising out of the Contract relating to Change in Law for the Financial Years 2017-18, 2018-19 & 2019-20. The claimant has raised a claim for Rs. 138.5 million. The Sponsor is yet to file the Counter-claim against the Claimant.

39. M/s AE Tollway Ltd. has initiate arbitration proceedings against the Sponsor in relation to the 6-laning of Agra-Etawah Bypass Section of NH-2 from km. 199.660 to km, 323.525 under NHDP Phase-V in the State of UP on BOT (Toll) basis. The claims filed by the Claimant were in relation to the Additional cost incurred towards Interest during Construction (IDC) for the delayed Period, Additional direct cost incurred during the delayed period, Fixed Overhead (FOH) payable to EPC Contractor, Escalation cost. The Claimant has raised a claim for Rs. 13179.80 million. The Sponsor is yet to file the Counter-claims against the Claimant.

Material civil matters filed by the Sponsor

1. Essel Walajahpet Poonamalle Toll Road Private Limited has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal). The claims challenged are for compensation for adjusted equity as termination payments, compensation for repayment of the debt borrowed from the lenders/creditors, compensation for loss of profit payable to EPC contractor, compensation for internal rate of return and mobilisation and de-mobilisation. The amount challenged before the High Court of Delhi is Rs. 6532.90 million. The matter is currently pending.

2. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against Oriental Nagpur Betul Highways Limited. The claims challenged are for date of PCOD to be declared as January 7, 2014, and grant bonus of additional 91 days including 9th instalment of annuity payment. The amount challenged before the High Court of Delhi is Rs. 8220.70 million. The matter is currently pending.

3. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against West Haryana Highway Private Limited. The claims challenged are interest due on additional promoter contribution infused in the project, price escalation during the extended period, plant and machinery idling/rental/rehandling for extended period and interest on plant and machinery idling/rental. The amount challenged before the High Court of Delhi is Rs. 5,478.90 million. The matter is currently pending.

4. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against Gwalior Bypass Project Limited. The claims challenged are claim for interest on delayed release of annuity amount along with interest due to delayed payment of regular annuity, claim for interest on debt after COD till December 31, 2016 and interest incurred on price escalation form PCOD till October 31, 2016. The amount challenged before the High Court of Delhi is Rs. 5,328.10 million. The matter is currently pending.

5. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the

arbitral tribunal) against Pune Solapur Expressways Pvt. Ltd. The Sponsor has challenged the entire award w.r.t to extension of Concession Period by 928 days vide the petition marked as Diary No. 990741/2022. The amount challenged before the High Court of Delhi is Rs. 224.60 million. The matter is currently pending.

6. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against M/s GMR. The Sponsor has challenged the Final Report released by Sole Arbitrator on 28.02.2022 which has determined the loss in terms of Article 41 amounting to Rs. 16722.00 million in favour of the Concessionaire. The petition is marked as FAO (OS) 108/2020 109/2020 110/2020. The matter is currently pending.

7. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against the M/s BSCPL Aurang Tollway Ltd. The Sponsor has challenged the entire award of the Arbitral Tribunal. The challenges include the claims with respect to the Right of Way, Payment for idealing of plant and machinery vide petition marked as OMP (Comm) 341/2022. The amount challenged before the High Court of Delhi is Rs. 2819.4 million. The matter is currently pending.

8. The Sponsor has filed a petition before the High Court of Delhi (challenging the award of the arbitral tribunal) against the M/s L&T Ltd. The sponsor has challenged the entire award awarded by the Arbitral Tribunal vide petition marked as OMP (Comm) 363/2022 before the High Court of Delhi. The amount challenged before the High Court of Delhi is Rs. 294.6 million. The matter is currently pending.

Other material litigation

Considering the business and purpose of the Sponsor, it is imperative for the Sponsor to have an effective mechanism for the acquisition of land for building roads. Taking this need of the Sponsor into account, the parliament has enacted the NH Act, a special enactment which overrides the Land Acquisition Act, 1894 in cases where the land is acquired for the purposes of building National Highways. The Parliament has enacted the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013, which is applicable to land acquisitions under NH Act with effect from January 1, 2015 (i.e. one year from the date of commencement of the Act, subject to notification by Central Government). The process of acquiring land is a very cumbersome process and it leads to a large number of disputes. At present there are approximately 72,000 land acquisition cases pending before various Courts/Tribunals/Competent Authorities for adjudication.

III. Litigations involving the Associates of the Sponsor

Except as disclosed below, as on the date of this Prospectus, there are no pending criminal or material litigations or regulatory actions involving the Associates of the Sponsor.

Sr. No	Name of Associate	Number of proceedings outstanding	Amount involved (Rs. in million)
	Direct Tax		
1.	Paradip Port Road Company Limited	5	7.74
2.	Tuticorin Port Road Company Limited	3	1.98
3.	Vishakhapatnam Port Road Company Limited	3	1.73
4.	Calcatta Haldia Port Road Company Limited	3	-
5.	Mumbai JNPT Port Road Company Limited	2	-
6.	New Mangalore Port Road Company Limited	2	-
7.	Chennai Ennore Port Road Company Limited	1	-
8.	Ahmedabad Vadodara Expressway Company Limited	7	112.14

IV. Litigations involving the Project Manager

There are no pending criminal, regulatory or other material litigations involving the Project Manager as on the date of this Prospectus.

V. Litigations involving the Associates of the Project Manager

Please see the section titled "*Litigations involving the Associates of the Sponsor*" above.

VI. Litigations involving the Investment Manager

There are no pending criminal, regulatory or other material litigations involving the Investment Manager as on the date of this Prospectus.

VII. Litigations involving the Associates of the Investment Manager

As the President of India is the Promoter of the Investment Manager, persons or entities that may be classified as 'associates' of the Investment Manager in terms of Regulation 2(1)(b)(ii) and Regulation 2(1)(b)(iii) of the InvIT Regulations, have not been identified as 'associates' of the Investment Manager. Consequently, information or disclosures required to be included with respect to such persons or entities pursuant to the InvIT Regulations has not been included in this Prospectus.

VIII. Litigations involving the Trustee

1. Hubtown Limited (the **"Plaintiff"**) had filed a case before the High Court of Bombay against the Trustee and its directors (the **"Defendants"**) for having informed the bankers of the Plaintiff regarding the defaults committed by the Plaintiff. The Trustee has stated that the Plaintiff is a guarantor for the debt for which the Trustee is acting as a debenture trustee and in case of defaults, the relevant documents authorize the Trustee to share information about such default to CIBIL/RBI and other creditors. The aggregate amount claimed is INR 3,000 million. The matter is currently pending in the Court for settlement.

2. SBI Cap Trustee (the **"Plaintiff"**) had filed a suit before the City Civil Court, Bangalore against the Trustee and others (the **"Defendants"**) requiring sale of pledged shares for a particular price by SREI Fund/Investors, for whom the Trustee was acting as the share pledge trustee. India Competitive Global Fund (ICGC) acting through the SREI Investment Manager had a First & Exclusive Charge over the Pledged shares. At the instructions of the ICGC & SREI Investment Manager had transferred the Pledged shares to their demat account as they has first and exclusive right over the shares. We as Share Pledge Trustee has acted on the instructions of the Lenders/Investors. ICGC/SREI sold the shares and appropriated the amounts towards their dues and transferred the surplus amount to the Plaintiff. The Plaintiff is acting for a consortium of lenders and has residual interest. The Plaintiff's case is that the ICGC/SREI has appropriated more amount than their dues. The aggregate claim amount is Rs. 1,550.3 million. The Branch Manager of SBI along with their counsel submitted to the Court that they are willing to explore settlement. The Court referred the matter for pre-conciliation efforts. In the afternoon session, our Advocate appeared before the Conciliator. Advocate briefly explained the dispute to the Conciliator. The Plaintiff informed the Conciliator that if Trinity provides the details of the loan transaction and a statement of accounts in relation to the same, this information would help them resolve the dispute quickly. The case was listed on 30.09.2021 for further conciliation. As no representative was present on behalf of the Company, the Court has recorded that there is no settlement between the parties. The case was adjourned to October 27, 2021 for the parties to proceed with the litigation. The case is now revolving around the proving of the dues by ICGC/SREI and appropriation of amounts. We as ITSL had no role in sale of shares, maintenance of books of accounts and appropriation of amounts and transfer of surplus amount. The matter was adjourned to 16.11.2021 for framing of Issues, 23.11.2021 for filing of list of witnesses ICGC ,SREI & ITSL, for filing of affidavit of evidence by SBI, 07.12.2021 for cross examination of witnesses of SBI, 14.12.2021 for filing of affidavit of evidence by ICGC/SREI /Trinity/ITSL and 21.12.2021 for cross examination of witnesses of Trinity and ITSL and 07.01.2022 for further orders. We as ITSL has filed an application under Order 1 Rule 10(2) read with Section 151 of the Code of Civil Procedure, 1908 for unsuiting ITSL from the suit and for deleting the name of ITSL from the array of the parties. The matter is now listed on 30.06.2022 for arguments on the application of ITSL for deleting the

name of ITSL from the array of the parties. ITSL has no role in sale of shares & appropriation of sale proceeds. The Plaintiff appeared and filed the amended plaint and copies of the documents in two volumes (volume I consisting of 410 pages and volume II consisting of 598 pages). The Learned Judge upon examining the volumes observed that the Plaintiff had not filed the statement of truth. Therefore, the Learned Judge adjourned the matter for filing the statement of truth and additional written statement, if any. ITSL has filed it's additional Written Statement on 12th August, 2022. The matter adjourned to 27th September, 2022.

3. Balmer Lawrie and Company Limited and another (the **"Plaintiffs"**) had filed a petition before the Calcutta High Court against the Trustee and certain others (the **"Defendants"**) challenging the validity of the sale transaction of 1,48,20,000 shares in Transafe Services Limited by the Defendant to the Plaintiff. The Plaintiffs have inter alia sought (a) the recovery of consideration received by the Defendants for the allegedly void contract being Rs. 237.12 million and (b) interest at the rate of 18% per annum on the decretal amount. The success of the Petitioner against the Trustee in the instant petition being agitated is remote. The matter is currently pending.

4. Loancore Servicing Solutions Private Limited (the **"Petitioner"**) had filed a Company petition no. 293/59/ND/2019 before the National Company Law Tribunal (**"NCLT"**), Principal Bench at New Delhi against the Religare Enterprise Limited and others including the Trustee (the **"Respondents"**) alleging that the Respondents sold the shares of the Religare Enterprise Limited under the dominion and control of the Petitioners to Respondent no. 3-5. It is further alleged that the Trustee appropriated the shares and had transferred them to the Respondents nos. 3 to 5. It is furthermore alleged that the pledged shares had been sold to consciously deprive the Petitioner of its rights and to facilitate an illegal takeover of Respondent no. 1 by the Trustee through Respondent no.5 acting in concert. The alleged damages claim amount is Rs. 700 million is against the Respondent nos. 2 to 5. The NCLT has refused to pass any interim orders as asked by the Petitioner. The Petitioners has failed to produce any evidence or otherwise establish that it has any form of contractual privity or other relationship of any manner with the Trustee and therefore has absolutely no locus to make any claims against the Trustee. The success of the Petitioner against the Trustee in the instant petition being agitated is remote. Senior Counsel, Mr. Darpan Wadhwa appearing for Religare has submitted that they have placed on records a forensic report stating that the agreement Loancore has been relying upon is forged. The next date of hearing is November 10, 2022.

5. In the matter of Future Corporate Resources Limited ("FCRL") ESOP Trust, SEBI Adjudicating Officer has passed an order dated the February 3, 2021, on the ground of insider trading against eight persons including FCRL Employees Trust of which ITSL is a trustee. FCRL along with FCRL Employee Welfare Trust has been jointly and severally directed to disgorge an amount of Rs. 2, 75, 68,650/-. ITSL has submitted that ITSL as a trustee has acted on the instructions of the committee and not liable for insider trading and has not gained or received any amount. ITSL and FCRL Employee Welfare Trust are separate. All the said persons have filed an appeal before SAT against the said SEBI Order dated the February 3, 2021. SAT has given the next date of hearing on 19.10.2022. The order is against FCRL Employees Trust and not against ITSL. The matter is sub-judice.

6. Muthoot Finance Ltd.Vs. Trustees Association of India (TAI), ITSL, Axis Trustee & SBICAPTrustee) - (Case No.29 of 2021) before Competition Commission of India (CCI). On 10.09.2021, the Competition Commission of India(CCI) received an information from Muthoot Finance Limited (Informant) against Trustees Association of India (TAI) and three of its members, i.e., IDBI Trusteeship Services Limited, Axis Trustee Services Limited, and SBI CAP Trustee Company Limited (collectively referred to as 'OPs') for alleged contravention of Sections 3(3) and 4 of the Competition Act, 2002 (Competition Act) (hereinafter referred to as the 'Information'). I.e. for entering into anti-competitive agreement and formation of Cartel. CCI. The CCI has passed an order dated 23.12.2021 under Section 26(1) of the Competition Act, 2002 (Competition Act) directing the Director General to investigate the conduct of Trustees' Association of India's (TAI), IDBI Trusteeship Services Limited (IDBI), Axis Trustee Services Limited and SBICAP Trustee Company (together referred to as the 'OPs') and its office bearers for *prima fade* violating Section 3(1) read with Section 3(3) of the Competition Act (Prima Facie Order) dealing with anti-competitive horizontal agreement (including cartel). TAI, ITSL, Axis Trustee & SBICAP Trustee filed Civil Writ Petition Nos. 3781 of 2022, 3791 of 2022, 3842 of 2022 and 3847 of 2022 respectively before Bombay High Court challenging the jurisdiction of CCI as the SEBI as Sectoral

Regulator has Jurisdiction to decide the matter. The matter has been adjourned to 10th November, 2022 for filing Opinion by SEBI and rejoinders by other parties.

7. One Mr. R.K.Mohata Family Trust has filed Commercial Suit (lodging) No. 27568 of 2021 before Bombay High Court against ITSL & RHFL praying for holding of meeting of debenture holders of RHFL as also damages of Rs.1,05,50,902 against ITSL towards hrs investment. Hon'ble Bombay High Court vide their orders dated the 31.03.2022 read with the Order dated the 06.04.2022 and the order dated the 10.05.2022directed ITSL to hold the meeting of debenture holders. ITSL convened a meeting of the debenture holders on 13.05.2022 and as directed by Hon'ble Bombay High Court and the Results of the voting of meeting have been placed before the Hon'ble Bombay High Court in sealed cover. The matter is *sub-judice* before the Hon'ble Bombay High Court. Next date of hearing in the matter is yet to be decided by the High Court.

8. Suit is filed by investors seeking compensation and damages of Rs. USD 103, 699, 976 for the loss of their investments in Dynamic India Fund III from Dynamic India Fund III, International Financial Services, ICICI Venture Funds Management Company Limited, ICICI Bank and ITSL. All the Defendants including ICICI Venture have raised preliminary objections to the Suit. DIF III has raised five preliminary objections to the Suit viz. (i) Plaintiffs have been wrongly styled; (ii) Suit is a disguised derivative action and the appropriate court to hear it is the Commercial Court and not the Civil Court; (iii) there is a connected Stay Application filed before the Commercial Court by DIF III that the Suit has to be stayed as the Suit is a Class Action suit and hence the Commercial Court and not the Civil Court has the jurisdiction to hear the Suit; (iv) the Plaintiffs should have put the other shareholders of DIF III into cause; and (v) the Plaintiffs have to provide Security for costs to all the Defendants. The other Defendants have raised preliminary objections with respect to privity of contract and jurisdiction of Mauritius Courts. Nearly 6 years after the Suit was filed in 2014 in Mauritius, on January 28, 2020, the court heard arguments on only two of the preliminary objections raised by ICICI Bank and ICICI Venture viz. (a) Mauritius court lacks jurisdiction to hear disputes between non-Mauritians (both the Plaintiffs and the Defendants No. 3 and 4 i.e. ICICI Bank and ICICI Venture are not Mauritius residents); and (b) Mauritius court is not the convenient forum to hear the disputes raised. The arguments relied, amongst others, related to the facts that (a) alleged conduct of ICICI Bank and ICICI Venture did not admittedly happen in Mauritius and offences, if any, happened in India; (b) investments were in real estate projects in India; (c) investments were in a real estate fund in India; and (d) Indian law governs the contractual relationship between the parties. By an order dated June 9, 2020 the Supreme Court of Mauritius stayed the proceedings as against ICICI Bank and ICICI Venture on the grounds that none of the allegations made against ICICI Bank and ICICI Venture occurred in Mauritius and hence the courts in Mauritius lack jurisdiction to adjudicate such allegations. In the subsequent hearing on July 1, 2020, the Plaintiffs informed the Court of their decision not to appeal against the order staying the proceedings as against ICICI Venture and ICICI Bank. The proceedings would continue against the other Defendants viz. DIF III, IFS and the Trustee. The Supreme Court of Mauritius vide its order dated the 3rd June, 2022 have deleted ICICI Bank and ICICI Venture Fund Management Company Ltd. from the array of the parties allowed to continue the case against Dynamic India Fund III, SANE Mauritius and the WITECO now ITSL. The Plaintiffs have filed an appeal against the said Judgement dated the 3rd June,2022 passed by The Supreme Court of Mauritius. ICICI Venture Fund Management Company Ltd. is taking care of the matter on behalf of ITSL as a Trustee and also appointed Counsels to defend ITSL. We have taken up the matter with the ICICI Venture stating that WITECO now ITSL is also not a Mauritius resident and Mauritius court is not the convenient forum to hear the disputes raised and hence lacks the jurisdiction. Further, ITSL is acting only as a trustee and there cannot be any claim against ITSL at all as ICICI Venture Fund Management Company Ltd. was Investment Manager of the Fund who has managed all affairs of the Fund.

9. Contempt Application/Petition has been filed by Kalyan Toll Infrastructure Ltd. against ITSL & it's Directors , pursuant to the NCLT Order dated the 26th April, 2021 in the case of Lanco Hoskote Highway Ltd. for non-issuance of NOC for satisfaction of mortgage charge dated 01.12.2014 created by Lanco Hoskote Highway Ltd. as a third party mortgagor in favour of ITSL for the benefit of 25 CDR Lenders of La nco Infatech Ltd. Non-issuance of NOC by ITSL for satisfaction of charge is owing to non-receipt of back to back NOC from CDR lenders for whose benefit ITSL is holding the mortgage charge. The matter is listed on 14/10/2022 for filing counter by ITSL.

SECTION II: RISK FACTORS

An investment in NCDs involves a certain degree of risk. The risk factors set forth below do not purport to be complete or comprehensive in terms of all the risk factors that may arise in connection with our business or any decision to purchase, own or dispose of the NCDs. Prospective investors should carefully consider the risks and uncertainties described below, in addition to the other information contained in this Prospectus including the sections titled "Our Business" on page 91 and "Financial Information" attached as ***Annexure A****, before making any investment decision relating to the NCDs. If any of the following risks or other risks that are not currently known or are now deemed immaterial, actually occur, our business, financial condition and result of operation could suffer, the trading price of the NCDs could decline and you may lose all or part of your interest and/or redemption amounts. The risks and uncertainties described in this section are not the only risks that we currently face. Additional risks and uncertainties not known to us or that we currently believe to be immaterial may also have an adverse effect on our business, results of operations and financial condition. The market prices of the NCDs could decline due to such risks and you may lose all or part of your investment.*

Being a listed InvIT, information in relation to the Trust and the Investment Manager (on behalf of the Trust) is available in the public domain.

Unless otherwise stated in the relevant risk factors set forth, we are not in a position to specify or quantify the financial or other implications of any of the risks mentioned herein. The ordering of the risk factors is intended to facilitate ease of reading and reference and does not in any manner indicate the importance of one risk factor over another.

This Prospectus also contains forward-looking statements that involve risks, assumptions, estimates and uncertainties. Our actual results could differ materially from those anticipated in such forward-looking statements as a result of certain factors including the considerations described below and elsewhere in this Prospectus.

Unless otherwise indicated or unless the context requires otherwise, the financial information included herein is derived from the Audited Financial Information and the Unaudited Interim Financial Information for three months ending June, 2022 as included in this Prospectus, as applicable.

In making an investment decision, prospective investors must rely upon your own examination and the terms of the Issue, including the merits and the risks involved. You should consult your tax, financial and legal advisors about the particular consequences of investing in the Issue.

In this section, unless specified otherwise, a reference to "we", "us" and "our" refers to the Trust and the Project SPV on a consolidated basis.

Risks Related to the Structure of the Trust

1. *We have limited historical financial information in relation to the existing assets and the target assets and, as such, there are limited financial statements presented in this Prospectus.*

The existing assets of the Trust are available only from the date of acquisition of the initial assets i.e. November 3, 2021. Further, no financial information in relation to the target assets is available as the Sponsor does not maintain a separate accounts of the target assets that shall be carved out pursuant to the concession agreements. Pursuant to its letter dated September 21, 2022, the Investment Manager had requested the SEBI for an exemption in relation to the disclosure requirements under the SEBI ILNCS Regulations with respect to the financial information required to be disclosed in this Prospectus (**"SEBI Exemption Request"**), which has been acceded to by the SEBI pursuant to letter dated September 29, 2022. Accordingly, in the absence of historical combined financials of the Trust this Prospectus does not include the requisite financial disclosures required under paragraph 2.2.8(a) of the SEBI ILNCS Regulations. Similarly, the Prospectus includes the balance sheet, profit and loss, cash flow and additional information required to be disclosed by non-financial sector entities under the heading 'Key Operational and Financial Parameters' under paragraph 2.2.8(d) of the SEBI ILNCS Regulations only to the extent applicable to trusts, given that the SEBI ILNCS Regulations only prescribe the disclosure requirements for non-financial sector and financial sector entities. For further details, see "*Our Business - Key Operational and Financial Parameters*" on page 129. The absence of meaningful historical financial information and operating data in respect of the Trust and the target assets may make it difficult for investors to evaluate our ability to operate and manage the target assets, or assess our financial position, future prospects and results of operations.

2. ***We must maintain certain investment ratios, which may present additional risks to us.***

Pursuant to the InvIT Regulations, we are required to invest not less than 80% of the value of our assets in eligible infrastructure projects as defined under the InvIT Regulations, such as the Project SPV. In addition, we must not invest more than 20% of the value of our assets in certain financial instruments prescribed under the InvIT Regulations. If these conditions are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager must inform the Trustee and ensure that these conditions are satisfied within six months of such breach (or within one year with Unitholders' approval). Failure to comply with these conditions may present additional risks to us, including divestment of certain assets, delisting and other penalties, which could have a material, adverse effect on our business, financial condition and results of operations.

3. ***In proposing to undertake the Issue of secured, rated, listed, redeemable, non-convertible debentures, we cannot assure that that Trust will be able to successfully raise the debt and any failure to raise funds may have an adverse effect on our results of operations.***

The Trust proposes to undertake the Issue. Any failure to raise funds through the proposed debt issuance could have an adverse effect on our results of operations and our ability to meet our payment obligations in relation to the Units or NCDs.

Further, the Trust has accepted a sanction from State Bank of India for a short-term rupee loan for up to ₹ 15,000 million as a bridge loan. In the event the Issue fails or there is a shortfall, the Trust may drawdown the amount sanctioned. Any failure to avail money through the bridge loan may prevent us from raising debt for financing the Project SPV, which may have an adverse effect on our business and operations.

In the event the Issue fails or there is a shortfall or there is a delay, the Trust may raise the Bridge Loan Facility. However, failure to raise money through alternate long-term means may result in adverse effect on our business and operations and could affect our ability to meet our payment obligations including in relation to the Units and/or NCDs. Further, it may result in a liability mismatch in the event the Bridge Loan Facility is drawn and subsequently there is a failure and/or shortfall in the Issue, which in turn may result in adverse effect on our business and operations and could affect our ability to meet our payment obligations including in relation to the Units and/or NCDs.

4. ***The Trust is proposing to undertake an issue of its Units by way of an institutional placement. We cannot assure that that Trust will be able to successfully complete the issue and any failure to raise capital may have an adverse effect on our results of operations.***

The Trust had entered into an agreement with lenders for availing ₹ 20,000.00 million on September 29, 2021 for acquisition of Initial Toll Roads. The Trust had drawn down amount equivalent to ₹ 14,800.00 million as of the date of this Prospectus. The Trust proposes to undertake an issue of its Units by way of an institutional placement, representing an undivided beneficial interest in the Trust in terms of the InvIT Regulations, Chapter 7 on 'Guidelines for Preferential Issue and Institutional Placement of Units by Listed InvITs' of SEBI Master Circular no. SEBI/HO/DDHS/DDHS_DIV3/P/CIR/2022/53 dated April 26, 2022 (such proposed issuance, the "**Unit Issuance**"). The Board of Directors, by way of its resolution dated August 30, 2022 and September 27, 2022 and the Unitholders by way of their resolution dated September 23, 2022, have approved an issue of up to 131,205,200 Units at or above the base price of ₹ 107.12 per Unit. The Board of Directors by way of its resolution dated September 27, 2022 have approved the floor price of ₹ 109.00 per Unit. Of the 131,205,200 Units, the Trust proposes to undertake the issue of up to 26,241,040 Units to the Sponsor, on a preferential basis ("**Preferential Issue**"), in accordance with the SEBI Institutional Placement Guidelines and the InvIT Regulations. The Board of Directors, by way of its resolution dated September 17, 2022 has approved the Preferential Issue.

The Sponsor, by way of its letter dated September 29, 2022 has confirmed its willingness to subscribe to at least 19,602,600 Units being offered pursuant to the Preferential Issue and such number of Units as may be approved by the Unitholders, in their meeting scheduled on October 10, 2022, at or above the floor price. The Trust has sent a notice dated September 18, 2022, calling for an extraordinary general meeting of the Unitholders on October 10, 2022, to seek approval of the Unitholders for the Preferential Issue. The unitholders by way of their resolution dated October 10, 2022 have approved the Preferential Issue. The closing date for institutional placement is October 3, 2022 and the subsequent allotment may be delayed until the completion of the Preferential Issue. There can be no assurance that the Preferential Issue will be completed in a timely manner or at all. In the event the Preferential Issue is not completed pursuant to the meeting of the Unitholders or for any reasons, the allotment of

Units pursuant to the Preferential Issue may be delayed and if completed, the allotment may lead to the unitholding of certain Unitholders of the Trust exceeding the limits prescribed under the extant provisions of the InvIT Regulations.

5. ***The completion of the transactions contemplated by the debt financing documentation entered into may be subject to certain closing and other conditions that may prevent us from providing debt financing to the Project SPV.***

The Trust had entered into an agreement with lenders for availing ₹ 20,000.00 million on September 29, 2021 for acquisition of Initial Toll Roads. The Trust had drawn down amount equivalent to ₹ 14,800.00 million as of the date of this Prospectus. Further, a rupee term loan of ₹ 8,570 million has been sanctioned by the Bank of Maharashtra on September 19, 2022 in favour of the Trust. The financing documentation to be entered into in relation to the aforementioned may be subject to certain closing and other conditions that may prevent us from providing debt financing to the Project SPV.

In the event the Project SPV avails debt in the future and intends to refinance a certain portion of their outstanding indebtedness with the Trust, such refinancing would require prior consent of the Authority under the relevant Concession Agreements. The approval of the Authority has to be in conformity with any regulations or guidelines that may be notified by the Government or the Reserve Bank of India, as the case may be. Further, the utilisation of the Net Proceeds by the Trust is not subject to monitoring by any independent agency.

Any inability of the Trust to complete the debt financing transactions in the manner described in this Prospectus may adversely impact the ability of the Trust to make payment to the NCD Holders in the manner described in this Prospectus or at all and the Investors may be unable to evaluate the manner in which we propose to invest the Issue proceeds on the economic merits of such investments. Such event may materially and adversely affect the ability of the Trust to make payments to the NCD Holders.

6. ***The regulatory framework governing infrastructure investment trusts in India is evolving and the interpretation and enforcement thereof involve uncertainties, which may have a material, adverse effect on the ability of certain categories of investors to invest in the NCDs, our business, financial condition and results of operations and our ability to make distributions to NCD Holders.***

The SEBI issued the InvIT Regulations with effect from September 26, 2014. The regulations have been amended and supplemented with additional guidelines and circulars.

As the regulatory framework governing infrastructure investment trusts in India comprises a separate set of regulations, interpretation and enforcement by regulators and courts involves uncertainties. Furthermore, regulations and processes with respect to certain aspects of infrastructure investment trusts, including, but not limited to, follow-on public offers and bonus issues, the liabilities of the NCD Holders, and the procedure for dissolution and delisting of infrastructure investment trusts have not yet been issued. For example, infrastructure investment trusts are not "companies" or "bodies corporate" within the meaning of the Companies Act, 2013 and various SEBI regulations, including the Securities and Exchange Board of India (Buy-back of Securities) Regulations, 2018 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 2011.

In addition, new costs may arise from audit, certification and/or self-assessment standards required to maintain compliance with the InvIT Regulations. Such changes in regulation, interpretation and enforcement may have a material, adverse effect on our business, financial condition and results of operations.

As we will be operating in a new and relatively unclear regulatory environment, it is difficult to forecast how any new laws, regulations or standards or future amendments to the InvIT Regulations will affect infrastructure investment trusts and this could have any consequential impact on the infrastructure sector in India, and no assurance can be given that the regulatory system will not change in a way that will impair our ability to comply with the regulations, conduct our business, compete effectively or make distributions.

Further, the Finance Act, 2021 ("**Finance Act**") has introduced various amendments to taxation laws in India. The Finance Act has included definition of 'pooled investment vehicle' under the Securities Contracts (Regulation) Act, 1956, which shall comprise business trusts as defined under the IT Act. The IT Act defines business trusts to include trusts registered with SEBI as an InvIT under the InvIT Regulations. The Finance Act and the amendments in the Securities Contracts (Regulation) Act, 1956 which have come into effect from April

1, 2021 have also recognised units, debentures and other instruments issued by InvITs as 'securities' which may have further implications under various regulations issued by SEBI governing securities, including under the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015, as amended and the Securities and Exchange Board of India (Prohibition of Insider Trading) Regulations, 2015, as amended.

Further, the dividend distribution tax regime has been abolished and replaced with dividend withholding tax regime. However, the procedural provisions regarding exemption of withholding tax in relation to dividend distribution by Special Purpose Vehicles (SPVs, as defined under IT Act) to InvIT were absent. In this regard, the Finance Act has exempted withholding of taxes on dividend distributions by SPVs to InvITs.

As such, there is no certainty on the impact that the Finance Act, may have on our business and operations or on the industry in which we operate. We cannot predict whether any tax laws or other regulations impacting it will be enacted or predict the nature and impact of any such laws or regulations or whether, if at all, any laws or regulations would have a material adverse effect on our business, financial condition and results of operations.

Failure to comply with changes in laws, regulations and standards may have a material, adverse effect on our business, financial condition, results of operations and prospects.

7. ***Our Project SPV may not be able to claim depreciation in relation to toll collection rights acquired from the Sponsor.***

The Initial Toll Roads acquired by the Project SPV were based on BOT model and are eligible to claim expenditure incurred on development and construction of infrastructural facilities in terms of the CBDT circular no. 09/2014 dated April 23, 2014 ("**Circular**"). The Circular provides that cost of construction on development of infrastructure facility of roads/highways under BOT projects may be amortized evenly over the concessionaire period (excluding time take for creation of such facility).

The Target Toll Roads are TOT projects wherein the Concessionaire shall not undertake construction and shall only collect toll and operate and maintain the highway. We believe that upfront concessional payment made by the Project SPV for acquisition of toll right may be considered akin to acquisition of business or commercial rights and Project SPV shall be eligible to claim depreciation under section 32 of the IT Act under the head of 'intangible assets'. However, tax authorities may interpret and take a contrary view in relation to the above which may adversely affect our business and profitability.

Risks Relating to Our Business and the Concession Agreements

8. ***Any payment by the Project SPV, including in the event of the termination of the Concession Agreements, is subject to a mandatory escrow arrangement which restricts its flexibility to utilise the available funds.***

The escrow arrangement mandated under the Concession Agreements requires all monies that are received by the Project SPV, including funds constituting the financial package, the fees and any other revenues collected from or in respect of the Project Highway (including the proceeds of any rentals, deposits, capital receipts or insurance claims) and all payments by the Sponsor (including, if any, in relation to the change of scope), to be deposited in an escrow account and utilised only in accordance with the order prescribed under the escrow agreement. The consent of NHAI, in its capacity as the concessioning authority (the "**Authority**"), and lenders, is required to amend the order of outflow of payments from such escrow account.

The escrow arrangements prioritise the payment of all taxes due, followed by payment of the concession fee to the Authority, expenses in connection with the construction of the project, operation and maintenance expenses, other costs and expenses incurred by the Sponsor, debt service payments, any payments and damages due and payable to the Sponsor, and balance, if any, in accordance with the instructions of the concessionaire. For details of the escrow arrangement, please see the section titled "*Summary of the Concession Agreements*" on page 132 of this Prospectus.

The debt financing provided by the Trust to the Project SPV and any future debt financing proposed to be provided comprises of certain secured or unsecured interest-bearing loans (collectively, the "**Trust Financing**") which will be classified as senior debt under the Concession Agreements. In accordance with the escrow arrangement, the amounts payable to the Trust in respect of the Trust Financing, will be subordinated to the amounts payable in respect of taxes due, concession fees, construction expenses, operation, maintenance and other costs and expenses. Further, any reduction in the cash flows of the Project SPV and/or an unanticipated increase in any of the abovementioned payments to be made by the Project SPV from the escrow accounts may result in decreased and/or delayed payment to the Trust, materially and adversely impacting the ability of the Project SPV to meet their payment obligations to the Trust. Any inability on the part of the Project SPV to meet their payment obligations to the Trust may adversely impact the ability of the Trust to make payment to the NCD Holders in the manner described in this Prospectus or at all.

In case of withdrawals from the escrow account on termination, the escrow arrangement prioritises the payment of all taxes due and payable, followed by the payment due to senior lenders (which includes the Trust), any payments and damages due and payable to the Sponsor, retentions and payments arising out of liability for any defects and deficiencies, incurred or accrued operation and maintenance expenses and any other payments under the Concession Agreements, after which the balance may be withdrawn by the Project SPV for its own purposes. Therefore, in case of termination, the amounts payable to the Trust in respect of the Trust Financing may be recovered only after payment of all taxes.

9. *The cost of implementing new technologies for collection of tolls and monitoring our projects could materially and adversely affect our business, financial condition and results of operations.*

Our future success will depend in part on our ability to respond to technological advances and emerging standards and practices on a cost-effective and timely basis. In addition, rapid and frequent technology and market-demand changes can often render existing technologies and equipment obsolete, requiring substantial new capital expenditures or write-downs of assets. Any failure by us to successfully adopt such technologies in a cost-effective and timely manner could increase our costs. Additionally, governmental authorities may require adherence with certain technologies in the execution of projects, tolling, operations and maintenance etc. and there can be no assurance that we would be able to implement the same in a timely manner, or at all. For example, the GoI recently introduced FASTag lanes on toll plazas as a policy initiative wherein there is an exclusive lane in the toll plaza for movement of vehicles fitted with FASTag. The FASTag is a device which is fitted on the front windscreen of vehicles to indicate online toll payment. The proper functioning of such technology infrastructure is essential to the conduct of our business. There can be no assurance that we would be able to replace or refurbish such equipment and further such replacement or refurbishment might not be undertaken in a cost-effective manner and any increased costs to us as a result of such replacement or refurbishment will adversely affect our profit margins and cash flows.

10. *We may face limitations and risks associated with debt financing and refinancing.*

We are subject to regulatory restrictions in relation to our debt financing and refinancing. We may from time to time require debt financing and refinancing to carry out the Investment Manager's investment strategy and to cover maintenance costs. In the event that we undertake further debt financing or refinancing, we may be limited by Indian law as to the form of financing or refinancing that we may undertake. As an InvIT, we may be unable to access certain debt capital available to companies.

In the event that we undertake further debt financing or refinancing, we may also be subject to risks associated with debt financing and refinancing, including the risk that our cash flow may be insufficient to meet required payments of principal and interest under such financing to the NCD Holders and to make distributions to Unitholders. Our ability to generate sufficient cash to satisfy our debt obligations will depend on our future operating performance, which may be affected by prevailing economic conditions and financial, business and other factors beyond our control. There is no assurance that we will be able to generate sufficient cash flow to meet all of our debt obligations. If we are unable to make payments due under our debt facilities, the lenders may be able to declare an event of default and initiate enforcement proceedings relating to any security provided in respect of the loan facilities, and/or call upon any guarantees, and this may materially and adversely affect our ability to make distributions to Unitholders. Such default may also result in the termination of the Concession Agreements by the Sponsor.

11. *Certain actions of the Project SPV require the prior approval of NHAI, and no assurance can be given that NHAI will approve such actions in a timely manner or at all.*

Certain terms and conditions in the Project SPV's Concession Agreements, financing agreements, and our other approvals require the Authority's prior written approval to be obtained for one or more of the following actions, among others, such as:

- assignment of the Concession Agreements to any persons, the creation of any encumbrance over, or transfer or disposal of rights and benefits of the Project SPV under the Concession Agreements or any project agreements;
- the selection or replacement of any operation and maintenance contractor and execution of the operation and maintenance agreements;
- securing refinancing; and any change in ownership of the Project SPV.

Furthermore, the Concession Agreements with NHAI typically require the submission to NHAI, for its review and comments, all project agreements to which the Project SPV is a party prior to entry, amendment or replacement of such agreements. In terms of the Additional Concession Agreements, in the event NHAI does not provide any comments within 15 days of such submission, the project agreement may be executed and submitted to NHAI within 7 days of such execution.

The restrictions described above may impose constraints on our flexibility to conduct our business. Furthermore, if as a result of these restrictions, we are unable to pursue a favourable course of action or to respond to an unfavourable event, condition or circumstance, then our business, financial condition and results of operations may be materially and adversely affected. For further details on the terms of the Concession Agreements, section headed "*Summary of the Concession Agreements*" on page 132 of this Prospectus.

12. *Any delay in determination of Appointed Date (as defined in the Additional Concession Agreements) by the Authority may adversely impact our cashflows and revenue.*

The rights, privileges, liberties and obligations of the Concessionaire, shall commence from the date on which all conditions precedents, as stipulated in the Additional Concession Agreements, would have been satisfied. The Concessionaire shall enter into commercial service on the Appointed Date whereupon the Concessionaire shall be titled to demand and collect fee and perform its O&M obligations, subject to and in accordance with the provisions of the Additional Concession Agreement. The determination of the Appointed Date by the Authority shall be final, conclusive and binding on the Concessionaire. Any delay in such determination of the Appointed Date may adversely affect our revenue generation, toll collection and cash flows and would have a material impact on our business and operations.

13. *The Project SPV's toll-road concessions may be terminated prematurely under certain circumstances.*

The Toll Roads concessions of the Project SPV are our principal assets. We will be unable to continue the operation of a particular road concession without a continuing concession right from the Sponsor, in its capacity as Authority. A concession may be terminated by the Sponsor for certain reasons set forth in the Concession Agreements, including, but not limited to, one or more of the following:

- any failure by the Project SPV to comply with the change of ownership requirements;
- any failure by the Project SPV to make any payments, including negative grants, to the Sponsor in a timely manner;
- any failure by the Project SPV to comply with maintenance requirements;
- in the event the Project SPV abandons or manifests intention to abandon the operation and maintenance of the Project Highway;
- any occurrence of an event of default under any financing document;
- any continuation of a force majeure event, such as an act of God, act of war, expropriation or compulsory acquisition of any project assets by the government, strikes, civil commotions, boycotts and political agitations, beyond a specified time; and
- any failure by the Project SPV to comply with the Concession Agreements if such default causes a material adverse effect on the Sponsor.

If the Concession Agreements are terminated by the NHAI due to a default by the Project SPV, or by the Project SPV due to a default by the NHAI, the Project SPV is titled to termination payments or otherwise from the NHAI in accordance with the terms of the relevant Concession Agreements. If the Concession Agreements are terminated prematurely, our business, financial condition and results of operations may be materially and adversely affected. For further details on the termination of the relevant Concession Agreements, the termination payments, and the definition of "default" as contemplated under the Concession Agreements, see the section headed "*Summary of the Concession Agreements*" on page 132, of this Prospectus.

14. ***Toll collections and Toll Road traffic volumes may be affected by existing or new competing roads and bridges and other modes of transportation, and any improvements to, or construction of, such roads, bridges and other modes of transportation.***

Upon commencement of the concessions, our principal source of revenue will be the collection of toll fees from users of the Toll Roads. The level of toll collections may be affected by existing or new competing routes and alternative modes of transportation, such as adjacent free roads, new or existing toll roads including national highways or state toll roads, railways or air transport. Although the Concession Agreements contain certain restrictions on the ability of the Sponsor to construct or cause to be constructed any competing roads within 15 kilometers of the Toll Roads, the Sponsor is not prohibited from constructing such competing free or toll roads if the average traffic on the Toll Road exceeds 90 per cent. of its stipulated designed capacity for three consecutive years. Furthermore, the Sponsor is not restricted under the Concession Agreements from constructing alternative modes of travel which service the same areas as are serviced by the Toll Roads.

In particular, the Sponsor has entrusted the Project SPV with the role of operation, maintenance and management of the Toll Roads mentioned hereinbelow.

Toll Road	Length of Toll Road (in kms)	Connecting States
Abu road - Swaroopganj	31.000	Rajasthan to Gujarat
Chittorgarh – Kota & Chittorgarh Bypass	160.500	Madhya Pradesh -Rajasthan
Kothakota Bypass – Kurnool Highway	74.622	Telangana – Andhra Pradesh
Palanpur/Khemana – Abu Road	45.000	Gujarat - Rajasthan
Maharashtra Border – Belgaum	77.705	Maharashtra -Karnataka
Agra Bypass	32.800	Uttar Pradesh-Madhya Pradesh
Borkhedi Kelapur Project Highway	138.150	Maharashtra – Telanagna
Shivpuri Jhansi Project Highway	75.300	Madhya Pradesh – Uttar Pradesh

Additionally, given the renewed focus of the GoI, at the national, state and local levels, on the development and strengthening of the highway network across India, subject to the aforementioned restriction, there can be no assurance that there will not be any construction, widening or improvement of any free or toll roads, or construction of other modes of transportation, in the proximity of the Toll Roads or which provide an alternative or more direct routing to locations served by the Toll Roads. Any such construction, widening or improvement may divert traffic away from the Toll Roads, which may adversely affect toll collections and, therefore, our ability to meet our payment obligations under the Units.

15. ***Our business will be subject to seasonal fluctuations that may affect our cash flows.***

Our cash flows will be affected by seasonal factors, which may materially and adversely affect traffic volumes. Traffic volumes tend to decrease during the monsoon season and conversely tend to increase during holiday seasons. The monsoon season may also restrict our ability to carry on activities related to our operation and maintenance of the Toll Roads. This may result in delays in periodic maintenance and reduce productivity, thereby materially and adversely affecting our business, financial condition and results of operations.

16. ***Toll rates and collections and Toll Road traffic volumes are dependent on factors beyond our control and are subject to significant fluctuations.***

Revenue from toll receipts is affected by traffic volume and toll rates, both of which are beyond our control. The toll rate structure is laid down under National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended from time to time (the "**Fee Rules**"). The Fee Rules specify that the applicable toll rates specified thereunder shall be increased by three per cent. each year along with an adjustment based on an increase in the wholesale price index (the "**WPI**"). We are not provided with any flexibility to adjust the toll rates as the rates are explicitly changed by the GOI in accordance with the Fee Rules. See "*—Toll collections are affected by applicable toll rates and revisions to such rates and the number of road users subject to such rates.*"

Traffic volumes on the Toll Roads and toll collections are directly and indirectly affected by a number of other factors beyond our control, including but not limited to:

- the growth of the Indian economy and the economic development of the states in which the Toll Roads are located as well as neighbouring states (the "**Project Influence Area**");
- restrictions on mining, or a decline in manufacturing or exports of commodities plying on the Toll Roads due to regulatory clampdowns or other reasons;
- the number and type of motor vehicles in operation and the cost of purchasing and operating motor vehicles, including financing costs, environmental law compliance costs, exchange rate fluctuations and fuel prices, in the Project Influence Areas;
- weather conditions, such as floods or torrential rain, acts of God, strikes or any other force majeure event, including epidemics, such as COVID-19, that could impair the safe operation of, restrict traffic access to, or prevent use of the Toll Roads;
- traffic on the roads providing access to and from the Toll Roads, or the physical condition of such roads, which hampers the ability of road users to gain access to and from the Toll Roads;
- the capacity and physical condition of the Toll Roads, or any structure forming part of the Toll Roads, such as bridges, bypasses or tunnels, and the need for maintenance and repair of parts or all of the Toll Roads, or any structure forming part of the Toll Roads, which may result in restricted or no access to the Toll Roads for material periods of time;
- overall security of the Toll Roads as managed by the relevant security contractors, including the possible threat of terrorist attacks on the Toll Roads or any of their free-standing structures;
- a change in the applicable toll policies or other applicable laws which affects any category of vehicle or fuel;
- changes to axle load norms in order to further increase the permissible axle load limits in India, which may adversely impact traffic growth along Indian national and state highways and cause accelerated deterioration of the condition of the pavement of the Toll Roads;
- the reactions of the public or other national or state government institutions to toll rate increases; and
- seasonal holidays.

In the event there is a significant decrease in traffic volume or change in toll rates on the Toll Roads, there may be a corresponding decrease in toll collections which could have a material adverse effect on our ability to meet our payment obligations under the NCDs.

17. ***We are subject to environmental, social and safety risks associated with the operation of the Toll Road which could adversely affect our business, cashflows and our results of operations.***

We are subject to laws and government regulations, including in relation to safety, health, and environmental protection. Environmental laws and regulations in India are becoming more stringent, and their effect on our operations, cannot be predicted with any certainty. Any failure on our part to comply with any existing applicable to us may result in legal proceedings being commenced against us, third party claims, or the levy of regulatory fines. For instance, a small portion of Shivpuri Jhansi Project and Borkhedi Kelapur Project passes through an 'eco-sensitive zone', as declared by the Ministry of Environment, Forest, and Climate Change. It may be required by the jurisdictional forest management or any relevant authority, in creating a biodiversity management plan and manage the same during the entire operating period of the Shivpuri Jhansi Concession Agreement. Our Project SPV will require specialised resources and consequently additional costs for creation and management of biodiversity plan and we cannot assure that this will not have an adverse effect on revenue generation.

Further, we might have to incur additional costs to comply with the rules and regulations applicable to us. The classification of small portion of Shivpuri Jhansi Project and Borkhedi Kelapur Project as 'eco-sensitive zone', has resulted in limitation of permissible land use between the carriageway and the right of way and may cause spatial limitations of usage of areas adjoining the right of way for undertaking maintenance activities. Such restraints may result in additional costs for undertaking routine maintenance or repairs in such sections of project highway.

There might be certain safety risks associated with the operation of the Toll Roads. For example, the Agra Bypass Project Highway passes largely through farm land and the animals may intrude on the relevant project highway which may result into accidents causing loss of lives or damage to the property. We may have to incur additional costs to prevent such damage. If we fail to prevent any such incident, our potential exposure may include fines and civil or criminal sanctions, third-party property damage or personal injury claims and clean-up costs. The amount and timing of costs under environmental laws are difficult to predict.

18. *We are subject to risks associated with outbreaks of diseases or similar pandemics or public health threats, such as the novel coronavirus ("COVID-19"), which could have a material adverse impact on our business and our results of operations and financial condition.*

In the past, various contagious diseases have spread throughout the world, including India where the entire operations of Sponsor or the Toll Roads are located. Most recently, beginning in late 2019 and continuing in 2020, 2021 and 2022, the global spread of COVID-19 has created significant economic and political volatility and uncertainty and business disruption. The spread of COVID-19 has led to governments around the world to take various measures such as the implementation of incoming and outgoing travel restrictions, voluntary and mandatory cessations of business operations, mandatory quarantines and work-from-home and other alternative working arrangements, curfews, limitations on social and public gatherings and partial lockdowns of cities or regions in order to limit the virus' spread. The spread of COVID-19 and governmental responses have resulted in worker absences, reduced business productivity, other business disruptions, reduced demand and stagnated economic activity in India and around the world. The ultimate extent of COVID-19 on our business, financial condition and results of operations will depend on future developments, which are highly uncertain and cannot be predicted. More generally, any epidemic, pandemic or other health crisis, whether similar to COVID-19, SARS, H1N1, MERS or other past global diseases, could materially and adversely affect our business, financial condition and results of our operations.

19. *Leakage of the tolls collected on the Toll Roads may adversely affect toll collections.*

Toll collections are dependent on the integrity of our toll collection system. Upon commencement of the concessions, the Toll Roads will be operated on an "open" toll collection system with different toll rates applicable to certain classes of vehicles; each motorist using a particular class of vehicle is charged a flat rate at the point of entry to the toll road regardless of the actual distance travelled.

The level of toll collections may be reduced by leakage through toll evasion, fraudulent acts on the part of road users or our toll collection operators, theft, technical faults in our toll collection systems, or unlawful roadway entries or exits by road users to avoid paying the required toll. To the extent we become aware of any routes available to road users to bypass the toll plazas, we may face delays in obtaining approval from the Sponsor to implement additional toll plazas to prevent such unauthorized entry or exit to the Toll Roads, which may adversely affect our revenue and our ability to meet our payment obligations under the Units. If toll collection is not adequately monitored, leakage may reduce toll collections. Although we expect to put in place systems and software, as well as deploy a number of toll plaza supervisors and security manpower, to minimize leakage through fraud and theft, if there is any significant failure in the efficiency or effectiveness of our collection practices or of the installed system software or any significant failure by us or our contractors to control leakage in toll collection, there could be a material adverse effect on our toll collections.

Furthermore, there may be situations where toll collection is disrupted or stopped, for example, due to public disturbances, or strikes or work stoppages as a result of disputes with local labour unions. Any such disruption or other stoppage of toll collection may interfere with our collection practices, resulting in increased leakage and reduced toll collections by us, which may adversely affect our revenue and our ability to meet our payment obligations under the Units.

20. *The termination payment due to us upon termination of the Concession Agreements may not adequately compensate us for the actual costs and investments associated with the Toll Roads in a timely manner or at all and thus may not provide us with sufficient funds to repay the Units.*

The Concession Agreements may be terminated by us or the NHAI prior to their expiration for a number of reasons. For details, see "*Risk Factors – The Project SPV's toll-road concessions may be terminated prematurely under certain circumstances.*" on page 20. In the event that the early termination of the Concession Agreements is due to a breach by us, we are entitled to receive a termination payment equal to 70 per cent of the Unexpired Cash Flow (*as defined in the Concession Agreements*) in addition to remaining liable for costs and liabilities in relation to the Toll Roads. In the event that the early termination of the Concession Agreements is due to a breach by the NHAI, we are entitled to receive a contractually agreed termination amount equal to 105% of the the Unexpired Cash Flow (*as defined in the Concession Agreements*). As the termination payment payable to us in the event of a breach by us would be lower than what we would have otherwise been entitled to receive in the event that the Concession Agreements had not been terminated, we may not be adequately compensated for the actual costs and investments associated with the Toll Roads and, therefore, may not be able to meet our payment obligations in relation to the Units or proposed debt issuance.

There is no assurance that any termination payment due to us will be paid in a timely manner or at all. Further, there are no precedents of termination payments being triggered in respect any other TOT projects in India. In the event of a delay in the disbursement of a termination payment by the Sponsor, in particular, if any dispute arises in respect of such payment, or in the event the Sponsor fails to make the termination payment at all, there may be insufficient funds available for us to meet our payment obligations under the Units.

21. *Toll collections are affected by applicable toll rates and revisions to such rates and the number of road users subject to such rates.*

Under the terms of the Concession Agreements, the toll rates applicable to the Toll Roads are determined in accordance with the Fee Rules. The applicable toll rates shall be increased by 3 per cent. each year and are subject to an adjustment in accordance with the Fee Rules on April 1 of each year based on the difference in the WPI between the week ending on January 6, 2007 and the week ending on or immediately after January 1 of such year of adjustment (the "**WPI Adjustment**"). The WPI Adjustment shall be restricted to 40 per cent of the increase in the WPI. In recent years, there has been little correlation between changes in the consumer price index (the "**CPI**") and the WPI, or between increases in the minimum wage and the WPI. As such, in the event of high CPI inflation or increased minimum wages, we may experience significantly higher operating costs, but there may be little variation in the WPI resulting in a muted increase in the applicable toll rate. As the determination of the applicable toll rates does not take account of changes in our operating, financing or other costs, there can be no assurance that the toll rates will be sufficient to cover any increase in such costs or that we will be able to implement any changes in the toll rates at the time or in the manner which we believe is in our best interest. Furthermore, an increase in the applicable toll rates may result in a reduction in overall toll collections if the higher toll rates cause a reduction in the traffic flow on the Toll Roads.

Our toll collections may also be affected by the level of exemptions, i.e. the number of road users required to pay the applicable toll rates when using the Toll Roads. The Concession Agreements provide that certain users of the Toll Roads are exempt from paying user fees for non-commercial use of the roads, while frequent users are entitled to discounted fees to use the Toll Roads.

Any inability to introduce or any delay in introducing adjusted toll rates to address, among other things, changes to the economic environment, higher operating and maintenance costs, decreased revenue due to a decrease in traffic volume, or changes in exchange rates or consumer preferences, any increase in the toll rates causing a reduction in traffic volume, or any increase in the number of road users who are exempt from payment of user fees or entitled to discounted fees in respect of the Toll Roads, would have a material adverse effect on our toll collections and, therefore, our ability to meet our payment obligations under the NCDs.

22. *Our revenues under the Transitional Support Agreement are dependent on successful continuation of underlying tolling contracts.*

The Sponsor, Project Manager and the Project SPV have entered into a transitional support agreement dated September 26, 2022 for the purpose of the Sponsor providing transitional support to (i) the Project SPV in respect of its O&M obligations and tolling obligations in relation to the Additional Concession Agreements; and (ii) the Project Manager in respect of its obligations under the Project Implementation and Management Agreement. As a result, the Sponsor is obligated, during the term of the Transitional Support Agreement, to undertake the tolling obligations/ tolling related responsibilities under and in compliance with the Additional Concession Agreement(s) on behalf of the Concessionaire. In furtherance of this, the Sponsor has entered into tolling contracts with certain third-party contractors in respect of the project highways under which these contractors pay the Sponsor a fixed contracted fee on a regular basis irrespective of the actual quantum of fee collected in respect of the project highway.

The Sponsor shall continue to operate tolling contracts on "as is basis" during the transition period from appointed date. Further, the remittance (which would be due to the Sponsor) under such tolling contracts would be credited directly to the Project SPV on consummation of the transaction. All these tolling contracts have a defined period and have set expiry dates. Furthermore, some of these tolling contracts may expire during the period of transition. Additionally, the tolling contracts have a clause related to pre-mature termination in case of default by the third-party contractors. In either of these scenarios, the Sponsor could be required to enter into new contracts or extend such contracts, and the remittance amount from those renewed tolling contracts might be lesser than the current contracted amount. This could have a material adverse effect on our business, financial condition and prospects.

23. *The operation of the Toll Roads and the revenues generated from them may be impacted as a result of any capacity augmentation or other works required to be carried out in accordance with the terms of the Concession Agreements or any RFPs floated by the Sponsor.*

The Sponsor has the right under the terms of the Concession Agreements to undertake, through a contractor, at its own cost, capacity augmentation of the Toll Roads. In connection with any capacity augmentation work in respect of the Toll Roads, the toll fees shall be reduced to 75% during the period of construction in terms of the applicable fee rules. There can be no assurance that construction work will be completed in the expected time frames, and if they are not, this would adversely impact the revenue of the relevant Project SPV.

In exercise of its rights relating to capacity augmentation under the Initial Concession Agreements, the Sponsor may from time to time release Request for Proposals ("**RFPs**") for construction activities on the Toll Roads. For example, in August 2021, the Sponsor had released RFPs inviting bids for construction works on certain sections of the Belgaum Kagal Project. The RFPs contain the timeframe within which the construction must be completed and details of works to be completed during augmentation including the proposed structures like flyovers and bridges. There can be no assurance that the capacity augmentation or construction under these RFPs would be completed within the expected time frames. Further, the length of these structures would determine the permitted increase in Toll Fees that the concerned Project SPV would be entitled to charge upon successful completion of the construction. The actual increase in length of the structures and in turn, permitted increase in Toll Fees is dependent on several factors beyond our control, such as, the final length of the structures constructed under the RFPs.

Moreover, there can be no assurance that the criteria for capacity augmentation of any stretch shall be strictly in accordance with the Concession Agreements. In addition to the criteria stipulated in the Concession Agreements, capacity augmentation may also be carried out by the government of India based on economic and strategic requirements. As such, the capacity augmentation may be commenced prior to the stipulated time period as per the Concession Agreements. For instance, the capacity augmentation for a stretch of road that forms part of Kotha Kurnool Project Highway is proposed prior to the stipulated time period as per the Kotha Kurnool Concession Agreement by the Government of India as part of its strategic initiative of Bharatmala Pariyojana and preparation of Detailed Project Report (*as defined in the Kotha Kurnool Concession Agreement*) for completion of the same has already been initiated. Accordingly, the Concessionaire will have to bear the additional cost of operation and maintenance of the widened road and the same may or may not be reimbursed by the Authority. Further, in terms of Kotha Kurnool Concession Agreement, the Concessionaire is required to complete certain initial improvement works within a timeframe of 24 months from the Appointed Date. However, since capacity augmentation is being carried out for the Kotha Kurnool Project by the Authority, the Authority has instructed the Concessionaire to hold off on initial improvement works as the same may lead to duplicity and wastage of resources. Accordingly, the Authority may issue the Concessionaire a negative change of scope and may seek compensation for the same which shall have an adverse implication on our business and financial condition.

Further, in terms of the Additional Concession Agreements, the detailed project report for capacity augmentation may be commenced immediately once the average daily traffic has met the target traffic. Additionally, any increase in revenue due to increase in Equivalent Tollable Length (*as defined in the Additional Concession Agreements*) of the Project Highway shall be paid to NHAI on a quarterly basis. Additionally, the detailed project report for capacity augmentation may be commenced immediately once the average daily traffic has met the target traffic. For further details in relation to the differences in the terms of Initial Concession Agreements and Additional Concession Agreements, see "*Summary of Concession Agreements – Differences between the Initial Concession Agreements and Additional Concession Agreements*" on page 171.

24. *Changes in the policies adopted by governmental entities or in the relationships of any member of the Trust with the Government or State Governments could materially and adversely affect our business, financial performance and results of operations.*

The Project SPV would be deriving almost all of its revenue from the Concession Agreements with the NHAI and must maintain good relationships and strategic alliances with the Sponsor, the Government and State Governments. We expect that we will continue to depend on, and benefit from, policies relating to the terms of the concessions in respect of the Project SPV's existing projects and any future projects. In addition, we expect to benefit from, and depend on, the Sponsor and various Government and State Government entities in terms of policies, incentives, budgetary allocations and other resources provided by these entities for the road industry in general. Any adverse change in any existing governmental policies, incentives, allocations or resources, or any change in our relationships with governmental entities, could materially and adversely affect our business, financial condition and results of operations.

Additionally, the Toll Roads may be subject to delays, extensive internal processes, policy changes, changes due to local, national and internal political pressures and changes in governmental or external budgetary allocation and insufficiency of funds. Since governmental entities are responsible for awarding concessions and are a party to the development and operation of the awarded projects, our business will be directly and significantly dependent on their support. Any withdrawal of support or adverse changes in their policies, even if not quantifiable monetarily, may lead to the Project SPV's agreements being restructured or renegotiated or the concession period being decreased, which could materially and adversely affect the Project SPV's financing, capital expenditure, revenues, development or operations.

25. ***The Valuation Report, and any underlying reports, are not opinions on the commercial merits of the Trust or the Project SPV, nor are they opinions, expressed or implied, as to the future trading price of the Units or the financial condition of the Trust upon listing, and the valuation contained therein may not be indicative of the true value of the Project SPV's assets.***

RBSA Valuation Advisors LLP has been appointed as the independent valuers (the "**Valuers**") to undertake independent appraisals of the Toll Roads. The Valuers have issued the Valuation Report in relation to the Initial Toll Roads and Target Toll Roads as at July 31, 2022, included in **Annexure C** to this Prospectus, which sets out their opinion as to the fair enterprise value of the Initial Toll Roads dated March 31, 2021 and Target Toll Roads as on July 31, 2022. In order to issue their Valuation Report, the Valuers based their assumptions regarding the traffic volume, toll rates, operation and maintenance costs, amortization, debt repayments and non-cash net working capital projections amongst other things, on information provided by and discussions with or on behalf of the Investment Manager, and which reflects current expectations and views regarding future events and, therefore, necessarily involves known and unknown risks and uncertainties. Please see the Valuation Report included in **Annexure C** to this Prospectus for a more detailed description of all assumptions relied upon in the preparation thereof. The Valuation Report contains forecasts, projections and other "forward-looking" statements that relate to future events, which are, by their nature, subject to significant risks and uncertainties. The future events referred to in these forward-looking statements involve risks, uncertainties and other factors which may cause the actual results or performance to be materially different from any future results or performance expressed or implied by the forward-looking statements.

The Valuation Report is not an opinion on the commercial merits and structure of the Trust or the Project SPV, nor is it an opinion, expressed or implied, as to the future trading price of the NCDs in or the financial condition of the Trust upon listing. The Valuation Report does not purport to contain all the information that may be necessary or desirable to fully evaluate the Trust or the Project SPV or an investment in the Trust or the NCDs. The Valuation Report is not based on a comprehensive review of the business, operational or financial condition of the Project SPV and, accordingly, makes no representation or warranty, expressed or implied, in this regard. The Valuation Report does not confer rights or remedies upon investors or any other person, and does not constitute and should not be construed as any form of assurance as to the financial condition or future performance of the Trust or as to any other forward-looking statements included therein, including those relating to certain macro-economic factors, by or on behalf of the Investment Manager, the Project Manager, the Trust, or the Lead Managers. Further, we cannot assure you that the valuation prepared by the Valuers reflects the true value of the net future revenues of the Project SPV or that other valuers would arrive at the same valuation. Accordingly, the valuation contained therein may not be indicative of the true value of the Project SPV's assets. The Valuation Report has been issued as at July 31, 2022, but does not take into account any subsequent developments and should not be considered as a recommendation by the Investment Manager, the Project Manager, the Trust or the Lead Managers or any other party that any person should take any action based on the Valuation Report. Accordingly, investors should not completely place on reliance on the Valuation Report in making an investment decision.

26. ***We have referred to the data derived from (i) Technical Consultant Report commissioned from the Technical Consultants, (ii) Traffic Reports commissioned from the Traffic Consultants and (ii) CRISIL Report which are based on certain bases, estimates and assumptions that are subjective in nature and may not be accurate.***

We have appointed Consulting Engineers Group Limited (for Agra Bypass and Shivpuri Jhansi Project) and Samarth Infraengg Technocrats Private Limited (for Borkhedi Kelapur Project), independent, third-party research agencies, for undertaking technical due diligence of Target Toll Roads, as our technical consultants (the "**Technical Consultants**"). The Technical Consultants have prepared technical reports on the Target Toll Roads, which are set out in **Annexure H** to this Prospectus (the "**Technical Consultant Reports**").

We had appointed Ramboll India Private Limited and Steer Davies Gleave India Private Limited (for Agra Bypass and Borkhedi Kelapur Project) for preparing detailed traffic reports of Initial Toll Roads. We have also appointed CRISIL Limited (for Shivpuri Jhansi project) as our traffic consultants ("**Traffic Consultants**") to prepare the detailed Traffic Consultant Reports and provide their analysis and forecast of traffic volumes for the Target Toll Roads. The traffic reports are set out in **Annexure G** to this Prospectus (the "**Traffic Consultants Reports**").

Furthermore, we have also commissioned a report titled "*Roads and Highways*" dated September 2022, prepared by CRISIL Research ("**CRISIL Report**'). All of the Technical Consultant Reports, the Traffic Reports and the CRISIL Report (together referred to as "**Industry Expert Reports**") are subject to various limitations and are based upon certain bases, estimates and assumptions that are subjective in nature and that are based, in part, on information provided by and discussions with or on behalf of the Investment Manager. In particular, certain of the information we have provided the Traffic Consultants for the purposes of the Traffic Reports has been aggregated from data collected by third-party service providers. Although we believe such data to be accurate, we have not verified the information and cannot assure you that it is free from error. The Industry Expert Reports reflect current expectations and views regarding future events, and therefore, necessarily involve known and unknown risks and uncertainties. The Industry Expert Reports contain forecasts, projections and other "forward-looking" statements that relate to future events, which are, by their nature, subject to significant risks and uncertainties, including population growth, gross domestic product growth, vehicle ownership rates, per capita income, agricultural output and fuel consumption. The future events referred to in the Industry Expert Reports involve risks, uncertainties and other factors which may cause the actual traffic volumes to be materially different from any future traffic volumes expressed or implied by the Industry Expert Reports. There can be no assurance that the bases, estimates and assumptions adopted by the Technical Consultants, CRISIL or the Traffic Consultants for the purposes of preparing their respective reports will prove to be accurate. If any of these traffic assumptions are incorrect, future traffic volumes for the Target Toll Roads could be materially different from those that are set forth in these reports and this Prospectus.

27. ***Certain provisions of the standard form of Concession Agreements may be untested, and the Concession Agreements may contain certain restrictive terms and conditions which may be subject to varying interpretations.***

The Concession Agreements that we have entered into is substantially based on a model concession agreement prescribed by the Sponsor. For example, the toll fees under the Concession Agreements is fixed, subject to annual adjustments to account for inflation as specified in the Concession Agreements. In addition, the operation and maintenance standards and specifications require the Project SPV to incur operation and maintenance costs on a regular and periodic basis. The Concession Agreements also provide for a fixed term concession and, although our Concession Agreements provide for an extension or reduction of the concession period based on certain factors, including actual average toll collection on specified target dates, the Concession Agreements do not provide for renewal of the Concession Agreements after the expiry of the term.

The form of the Concession Agreements has evolved within the last decade and there is limited guidance available on the interpretation of a number of terms and conditions of the Concession Agreements. In addition, certain terms of the Concession Agreements, such as those related to an augmentation in the capacity of the toll roads, substitution of the Sponsor in any or all of the project agreements, termination payments by the Sponsor, construction of additional competing roads by the Sponsor, the Government or State Governments and payment of compensation by the Sponsor for changes in law are untested. Accordingly, the interpretation of certain terms and conditions in the Concession Agreements of the Project SPV by the Sponsor, the courts or regulators may be different from our interpretation of such terms and conditions.

The terms and conditions of the Concession Agreements contain restrictive terms and conditions. For example, the Concession Agreements contain provisions that mandate substitution clauses in the project agreements. Such substitution clauses allow the Sponsor to step into project agreements in place of the Project SPV in the event of suspension of the Project SPV or termination of the Concession Agreements due to a breach or default by the Project SPV. The Concession Agreements also provides that the lenders to a Project SPV may substitute the Project

SPV with new entities approved by the Sponsor in the event of a default by the Project SPV under the relevant Concession Agreements or financing agreements. The terms of the Project SPV's Concession Agreements requires the Project SPV to indemnify the Sponsor for losses arising out of breach of the obligations of the Project SPV under the Concession Agreements.

In the event the Sponsor or a lender invokes any restrictive term or condition in the Concession Agreements, or the Sponsor, a court, or regulator interprets any term or condition in an adverse manner, such invocation or interpretation may materially and adversely affect our business, financial condition and results of operations.

28. ***We may be subject to increases in costs, including operation and maintenance costs, which we cannot recover by increasing toll fees under the Concession Agreements.***

The terms and conditions of the Concession Agreements are fixed and are not negotiable during the concession period. The costs of operating and maintaining the InvIT Assets may increase due to factors beyond the Project SPV's control, including, among other things:

- increase in the cost of labour, materials and insurance;
- the Project SPV being required to install intelligent toll-collection systems at their own costs;
- the Project SPV being required to restore their project roads in the event of any landslides, floods, road subsidence, other natural disasters, accidents or other events causing structural damage or compromising safety;
- increase in electricity tariff rates or other fuel costs resulting in an increase in the cost of energy;
- adverse weather conditions;
- unforeseen legal, tax and accounting liabilities relating to acquired assets; and
- other unforeseen operational and maintenance costs.

In the event that our costs increase, we may be unable to offset such increases with higher revenues by increasing toll fees due to the restrictions of the Concession Agreements.

Any significant increase in operation and maintenance costs beyond the amounts budgeted for by us, or any failure to meet quality standards, may reduce our profits, could expose us to penalties imposed by the concessioning authorities and could have a material, adverse effect on our business, financial condition and results of operations. Such events may also impact the ability of the Project SPV to service the debt obtained from the Trust and our ability to make distributions to Unitholders. As such, the inability to change the terms and conditions, including the toll fees of the concession during the concession period, may materially and adversely affect our operational and financial flexibility.

29. ***Leakage of the toll fees on the Project SPV's roads may materially and adversely affect our revenues and financial condition.***

The Project SPV's toll receipts are primarily dependent on the integrity of toll-collection systems and the willingness of road users to pay toll fees. While the Project SPV has an integrated toll-collection system in place, the level of revenues derived from collection of tolls may be reduced by leakage through toll evasion, theft, fraud or technical defaults in the Project SPV's toll systems or forced violations by users of the Toll Roads. Furthermore, the Project SPV may also, at times, need to allow users of the Toll Roads to pass through without paying applicable tolls due to heavy traffic build-up, or may be unable to collect tolls due to political protests or other agitations relating to tolling. In addition, in certain circumstances, the governmental authorities or Indian courts could seek to suspend toll-collection for or during certain periods, in full or in part, on the Toll Roads, which suspension would result in a reduction in our revenues. For example, in November 2016, the Government ordered the suspension of toll collection at all national highways for a particular period of time on account of the demonetization of certain high-value currency denominations. Further, toll-collection errors may amount to a loss of revenue as there is an inherent risk of under-collection of toll fees given that some users of toll roads continue to pay in cash. Any significant failure by us to monitor and control leakage in toll-collection systems could have a material, adverse effect on our business, prospects, financial condition and results of operations and our ability to make distributions.

30. ***We will depend on certain directors, executive officers and key employees of the Investment Manager, the Project Manager and the Project SPV, and such entities may be unable to appoint, retain such personnel or to replace them with similarly qualified personnel, which could have a material, adverse effect on the business, financial condition, results of operations and prospects of the Trust.***

Our performance will depend, in part, upon the continued service and performance of certain directors, executive officers and key personnel of the Investment Manager, the Project Manager and the Project SPV. The continued operations and growth of our business will be dependent upon the Investment Manager, the Project Manager and the Project SPV being able to attract and retain personnel who have the necessary and required experience and expertise. Competition for qualified personnel with relevant industry expertise in India is intense due to the scarcity of qualified individuals in the toll-road business, and the aforesaid entities may not be able to retain their executive officers and key employees or attract and retain fresh talent in the future. Any inability by the Investment Manager, the Project Manager and the Project SPV to retain their directors, executive officers and key employees, or the inability to replace such individuals with similarly qualified personnel, could have a material, adverse effect on the business, financial condition, results of operations and prospects of the Trust.

31. ***There can be no assurance that we will be able to successfully undertake future acquisitions of road assets or efficiently manage the infrastructure road assets we have acquired or may acquire in the future.***

Our growth strategy in the future may involve strategic acquisitions of toll roads and other road assets. We may not be able to identify or conclude appropriate or viable acquisitions in a timely manner. The success of our past acquisitions and any future acquisitions will depend upon several factors, including:

- our ability to identify, finance and acquire operational toll roads and other road assets on a cost-effective basis;
- our ability to integrate acquired personnel, operations, products and technologies into our organisation effectively;
- unanticipated problems or legal liabilities of the acquired businesses; and
- tax or accounting issues relating to the acquired businesses.

There can be no assurance that we will be able to achieve the strategic purpose of such acquisitions or operational integration or an acceptable return on such investments, which may materially and adversely affect our profits, financial condition and distributions.

Furthermore, Concession Agreements for future toll-road projects may also contain terms and conditions that are more restrictive than those under the current Project SPV's Concession Agreements for the Toll Roads. These restrictions may restrict our flexibility in managing our business or projects and could in turn materially and adversely affect our business prospects, financial condition and results of operations.

32. ***The Project SPV may not be able to comply with its maintenance obligations under the Concession Agreements, which may result in the termination of the Concession Agreements, the suspension of the Project SPV's rights to collect tolls or the requirement that the Project SPV pay compensation or damages to the Sponsor.***

The Project SPV is required to undertake operation and maintenance of the Toll Roads within periods and in the manner as specified in the Concession Agreements. There can be no assurance that the Project SPV will not breach the maintenance obligations under the Concession Agreements on account of the Project Manager's failure to undertake the stipulated maintenance work in a timely manner, or at all.

If the Project SPV is in breach or default of its obligations, then the NHAI has the right to (a) suspend the right of the Project SPV, including the right to collect tolls and other fees, (b) claim compensation for all direct, additional costs suffered or incurred by the Sponsor arising out of such default, or (c) terminate the Concession Agreements.

If the Concession Agreements are terminated, the right to collect tolls is suspended or the Project SPV is required to pay compensation or damages, our business, financial condition and results of operations may be materially and adversely affected. For further details of the maintenance obligations, suspension and termination events under the Concession Agreements, see the section headed "*Summary of the Concession Agreements*" on page 132 of this Prospectus.

33. ***The insurance policies for the Target Toll Roads are not currently in place for any protection against various risks associated with our Operations in relation to Target Toll Roads and any future insurance coverage obtained may be inadequate.***

The Investment Manager, on behalf of the Trust, has obtained insurance policies for Initial Toll Roads in relation to risks related to fire, act of burglary or theft, earthquake, an act of theft or terrorism or interruption of business due to petrochemical or non-petrochemical risks. However, we cannot assure that the policies that have been obtained shall adequately cover the loss. We also cannot assure that we will be able to renew the policies from time to time.

In relation to the Target Toll Roads, the insurance policies are currently not in place. Under the terms of the Additional Concession Agreements entered into for the tolling rights for the Target Toll Roads, such tolling rights would be granted as on and with effect from the appointed date which shall occur upon the conditions specified in the Concession Agreements which would be subsequent to the allotment of the NCDs pursuant to the Issue. As such, obtaining adequate insurance would only be undertaken on or after the appointed date under the Concession Agreements and we have currently not obtained insurance for the Target Toll Roads.

There can be no assurance that all risks in relation to Target Toll Roads shall be adequately insured against or that we will be able to procure adequate insurance coverage at commercially reasonable rates in the future.

Further the Toll Roads/InvIT Assets are subject to various risks that we may not be insured against, adequately or at all, including:

- changes in governmental and regulatory policies;
- shortages of, or adverse price movement for, construction materials;
- design and engineering defects;
- breakdown, failure or substandard performance of the road assets and other equipment;
- improper installation or operation of the road assets and other equipment;
- labour disturbances;
- terrorism and acts of war;
- inclement weather and natural disasters;
- environmental hazards, including earthquakes, flooding, tsunamis and landslides; and
- adverse developments in the overall economic environment in India.

Further, we are subject to various risks in the operation of the Toll Roads, including on account of accidents on the Toll Roads. Any insurance obtained for Target Toll Roads may not provide adequate coverage in certain circumstances and is subject to certain deductibles, exclusions and limits on coverage. To the extent we suffer damage or loss which is not covered by insurance, or exceed our insurance coverage, such damage or loss would have to be borne by us. We can make no assurance that material losses in excess of insurance proceeds (if any at all) will not occur in the future, which could materially and adversely affect our financial condition, business and results of operations.

34. *The Sponsor and the Trustee are involved in certain legal and other proceedings, which may not be decided in their favour.*

The Sponsor, certain of its Associates and the Trustee are involved in legal proceedings or claims which are pending at different levels of adjudication before various courts, tribunals and regulatory authorities. For details of certain material outstanding legal proceedings, see the section headed "*Legal and Other Information*" on page 301 of this Prospectus. There is no assurance that these legal proceedings and regulatory matters will be decided in favour of the respective entities. Decisions in any of the aforesaid proceedings adverse to our interests may have a material adverse effect on our or their business, future financial performance and results of operations. If the courts or tribunals rule against the Sponsor or its Associates or the Trustee, we or the Sponsor may face monetary and/or reputational losses and may have to make provisions in our financial statements, which could increase expenses and liabilities.

35. *We do not own the "NHAI" trademark and logo. Our license to use the "NHAI" trademark and logo may be terminated under certain circumstances and our ability to use the trademark and logo may be impaired.*

We do not own the "NHAI" trademark and "NHAI" logo, which is a trademark currently applied for by the Sponsor and which has been accepted and advertised by the Trademark Registry, Government of India. However, pursuant to a separate trademark license agreement dated September 26, 2022, the Sponsor has granted to the Trust, the non-transferable and non-assignable right to use the name of NHAI as part of the trade name of the Trust, as well as the Sponsor's trademarks ("**Trademarks**") in connection with the business of the Trust, on a non-exclusive basis, for the use in the Republic of India and globally. The license granted to the Trust in terms of the Trademark License Agreement shall be for a term of 1 (one) year from March 31, 2022. The Trust's right to use the Trademarks shall stand terminated with immediate effect if any of the terms of the license are breached. The Trust is using the Sponsor's logo pursuant to the terms of the aforesaid trademark license agreement, and does not separately hold any trademarks in its name. The termination or failure to register its logo as a trademark in a timely manner may have a material, adverse effect on the operations of the Trust and require management's time and attention.

36. *We will depend on NHAI and various third parties to undertake certain activities in relation to the operation and maintenance of the InvIT Assets. Any delay, default or unsatisfactory performance by these third parties could materially and adversely affect our ability to effectively operate or maintain the InvIT Assets.*

We will depend on the availability and skills of NHAI and third-party employees and contractors pertaining to the operation and maintenance of the InvIT Assets. Under the Transitional Support Agreement, NHAI will provide support pertaining to the operation and maintenance of the Target Toll Roads. When the Transitional Support Agreement expires, i.e. after a period of three months commencing from the appointed date as per the respective Concession Agreements, we will need to appoint third-party entities to undertake operations and maintenance and tolling, and the terms of these future contracts may not be favourable to us. We can also make no assurance that the services of such third parties will continue to be available at reasonable rates in the areas in which we conduct our operations. We may also be exposed to risks relating to the ability of such third parties to obtain requisite approvals for the operation and maintenance activities, as well as the quality of their services, equipment and supplies. In particular, failure to ensure the reliability and sustainability of toll collectors who are required to man the toll booths continuously may materially and adversely affect our overall level of net revenue. We may also be exposed to civil and criminal liability in relation to the actions of other third parties, including our employees and contractors.

Further, if we undertake limited development, while we may sub-contract our construction work, we may still be liable for accidents on our projects due to defects in design and quality of construction of our projects during their construction and operation. In addition, we can make no assurance that such contractors or their sub- contractors will continue to hold or renew valid registrations under the relevant labour laws in India or be able to obtain the requisite approvals for undertaking such construction and operation. Any delay, default or unsatisfactory performance by these third parties could materially and adversely affect our ability to manage the operation and maintenance of the InvIT Assets under the Concession Agreements in a timely manner or at all. Any of the foregoing factors could have a material, adverse effect on our business, financial condition, reputation and results of operations.

37. *The completion certificate and provisional completion certificate in respect of one of the Initial Toll Roads are not traceable and accordingly, alternate documents have been relied upon in relation to certain disclosures made in this Prospectus.*

We are unable to the trace the completion certificate and provisional completion certificate in respect of one of the Initial Toll Roads. Under these circumstances, we have relied on alternative documents such as the defects liability certificate dated May 17, 2010, issued by M/s Stanley Consultants Inc. in joint venture with M/s RITES Limited, certifying completion of all works on April 27, 2010, and the Technical Reports in respect of Chittorgarh to Kota section in Rajasthan for upgrading of NH-76 of east west corridors undertaken by NHAI ("**Chittorgarh – Kota Project Highway**"). We cannot assure you that the information relating to completion of the works in connection with the Chittorgarh – Kota Project Highway are true and accurate.

38. *We are subject to government regulation and if we fail to obtain, maintain or renew our statutory and regulatory licenses, permits, and approvals required to operate our business, results of operations and cash flows may be adversely affected.*

We may be required to obtain and maintain a number of statutory and regulatory licenses, permits and approvals for carrying out our business including consents to establish and operate under environmental laws, which are granted for a limited duration and require renewal. We cannot assure you that such approvals will be issued or granted to us in a timely manner, or will be granted at all. The Target Toll Roads to be acquired by the Trust are completed and revenue generating assets. The Sponsor, by way of its (i) letter dated September 27, 2022 in relation to Agra Bypass; (ii) letters dated September 28, 2020 and September 26, 2022 in relation to Borkhedi Kelapur Project; and (iii) letter dated September 29, 2022 in relation to Shivpuri Jhansi Project has confirmed that it had obtained all the necessary approvals and clearances required during the construction stage of the Target Toll

Roads.

Further, we shall obtain all other material permits, registrations, licenses, approvals, consents and other authorizations as may be required upon acquisition of the Target Toll Roads. If we do not receive such approvals or are not able to renew the approvals in a timely manner, our business and operations may be materially adversely affected.

It has also been observed that documentary evidence with respect to the statutory compliances of the agencies engaged by NHAI in relation to Target Toll Roads are not being maintained at respective site locations. For further details, see ESDD Report as set out in **Annexure E** to this Prospectus. In the event that the agencies are non-compliant with applicable law, we might have to bear the additional costs of substitution of such agencies.

39. ***The Project SPV may be held liable for the payment of wages to the contract labourers engaged indirectly in our operations.***

The Project SPV may appoint independent contractors who, in turn, engage on-site contract labour to perform certain operations. The Project SPV may need to obtain registration as a principal employer under the Contract Labour (Regulation and Abolition) Act, 1970 ("**Contract Labour Act**") for certain locations where workmen would be employed through contractors or agencies licensed under the Contract Labour Act. Although the Project SPV does not engage these labourers directly, in the event of default by any independent contractor, the Project SPV may be held responsible for any wage payments that must be made to such labourers. Any violation of the provisions of the Contract Labour Act by the Project SPV may result in penalties pursuant to the provisions of the Contract Labour Act. If the Project SPV is required to pay the wages of the contracted workmen and subjected to other penalties under the Contract Labour Act, the reputation, results of operations, cash flows and financial condition of the Trust could be adversely affected.

Risks Related to the Trust's Relationships with the Sponsor and the Investment Manager

40. ***The Sponsor, whose interests may be different from the NCD Holders, will be able to exercise significant influence over certain activities of the Trust.***

After the completion of the proposed institutional placement, the Sponsor will continue to own an aggregate of not less than 15.00% of the issued and outstanding Units and will be entitled to vote as a Unitholder on all matters other than matters where it is a related party and not permitted to vote under the InvIT Regulations. Although the Investment Manager has and will continue to have the requisite number of independent directors on its board of directors, the Sponsor will nonetheless be in a position to exercise significant influence in matters which require the approval of Unitholders by virtue of its ownership of Units in the Trust. The interests of the Sponsor may conflict with the interests of our NCD Holders and the Sponsor may, for business considerations or otherwise, seek to benefit itself instead of the Trust or the interests of the NCD Holders. The Sponsor will also exercise significant influence over the Project Manager, which is a wholly owned subsidiary of the Sponsor. Accordingly, the Project Manager may also be subject to conflicts of interest with respect to the Trust. These conflicts may be harmful to our interests or the interests of our NCD Holders, which may impact our business, financial condition and results of operations.

41. ***The Investment Manager may not be able to implement its investment or corporate strategies and the fees payable to the Project Manager are dependent on various factors.***

The Investment Manager's strategies focus on three main areas:

- managing the underlying assets of the Trust;
- managing the Trust's acquisitions and disposals; and
- managing the Trust's capital structure to maximize distributions.

The Investment Manager is a newly incorporated entity and has limited operational history of similar investment management or other activities in the infrastructure sector. There is no assurance that the Investment Manager will be able to implement these strategies successfully or that it will be able to expand our portfolio at any specified rate or to any specified size or to maintain distributions at projected levels. The Investment Manager may not be able to make acquisitions or investments on favourable terms or within a desired time frame, and it may not be able to manage the operations of its underlying assets in a profitable manner. Factors that may affect this risk may include, but are not limited to, changes in the regulatory framework in India, competition for assets, partial award of concessions or licenses favouring local or other competitors of the Trust, changes in the Indian regulatory or legal environment or macro-economic conditions. If the Investment Manager is unable to implement these strategies successfully or expand our portfolio, we will nonetheless be required to pay the Investment Manager an annual management fee, exclusive of taxes, in accordance with the terms of appointment of the Investment Manager.

Even if the Investment Manager is able to successfully grow the operating business of the underlying assets and to acquire toll roads and other eligible infrastructure projects in India as desired, there can be no assurance that the Investment Manager will achieve its intended return on such acquisitions or capital investments. Furthermore, the Investment Manager's investment mandate involves a higher level of risk as compared to a portfolio which has a more diverse range of investments. The Investment Manager may only be removed by a resolution of Unitholders (excluding the Sponsor) such that the votes cast in favour of the resolution are not less than one-and-a-half times the votes cast against the resolution.

Further, the fees payable to the Project Manager may vary each year based upon the operating and maintenance work that is actually required to be undertaken by the Project Manager with respect to the Project SPV, and accordingly, cannot be a flat rate or decided upfront for all periods. Additionally, any such payment of fees will be in the nature of a related party transaction and the approval of Unitholders will be required prior to making such a payment to the Project Manager. For further information, please see the section titled "*Overview of the Trust*" on page 131 of this Prospectus.

42. *While the Sponsor had communicated its intention of transferring around 1500 km of roads, the Trust may be unable to bid effectively for them.*

In accordance with the approval granted by the Chairman of NHAI, by way of communication dated March 29, 2021, the Sponsor will offer around 1,500 km of roads in three years to the Trust. The Sponsor proposes to transfer 247 km of roads by way of Additional Concession Agreements dated September 26, 2022. Further, by way of communication dated September 1, 2022, NHAI has identified the following five assets (**"Future Assets"**) for potential acquisition by the Trust under the Assets Monetization Plan for financial year 2022-23:

(i) Gwalior-Shivpuri (Madhya Pradesh);
(ii) Vadodara-Surat (bridge across River Narmada);
(iii) Kota Bypass and cable stayed bridge across river Chambal on Kota Bypass approaches;
(iv) Chennai Bypass; and
(v) Rewa-Katni-Jabalpur-Lakhnadon (Madhya Pradesh).

There can be no assurance that the Trust will be able to accurately or effectively assess the Future Assets on the basis of the information to it or in the time available, and its bids may provide to be uncompetitive. Furthermore, the Sponsor may accept or reject any binding offer made by the Trust, based on various factors regarding which the Trust may have no influence.

Access to future toll road assets sourced by the Sponsor or its existing or future subsidiaries will be an important source of growth in the future for the Trust, and any inability to bid competitively for Future Assets or the inability to win contracts from the Sponsor for their operation for any reason could have a material adverse effect on the Trust's operations, financial condition or prospects.

43. *Parties to the Trust are required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. The Trust may not be able to ensure such ongoing compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee, which could result in the cancellation of the registration of the Trust.*

Each of the parties to the Trust are required to maintain the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. These eligibility conditions include, among other things, that (a) the Sponsor, Investment Manager and Trustee are separate entities, (b) the Sponsor has a net worth of not less than ₹ 1,000 million and has a sound track record in the development of infrastructure or fund management in the infrastructure sector, (c) the Investment Manager has a net worth of not less than Rs. 100 million and has not less than five years' experience in fund management or advisory services or development in the infrastructure sector or the combined experience of the directors, partners and employees of the investment manager in fund management or advisory services or development in the infrastructure sector is not less than 30 years, (d) the Trustee is registered with the SEBI under Securities and Exchange Board of India (Debenture Trustees)

Regulations, 1993 and is not an associate of the Sponsor or Investment Manager and (c) each of the Sponsor, Investment Manager, Project Manager and Trustee are "fit and proper persons" as defined under Schedule II of the Intermediaries Regulations on an ongoing basis. The Trust may not be able to ensure such ongoing compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee, which could result in the cancellation of the registration of the Trust.

Further, in terms of Regulation 4(2)(e)(v) of the InvIT Regulations, the Investment Manager should, inter-alia, have not less than half of its directors as independent directors. As on the date of this Prospectus, the IM Board consists of nine directors out which four are independent directors. For details, please see the section titled "*Parties to the Trust – The IM Board*" on page 183. While we are in the process of determining a suitable independent director who shall improve corporate credibility and governance standard of the Investment Manager, we cannot assure that the delay in such appointment shall not entail any action from SEBI or any other authority.

44. *The Investment Manager is required to comply with certain ongoing reporting and management obligations in relation to the Trust. There can be no assurance that the Investment Manager will be able to comply with such requirements.*

The Investment Manager is required to comply with certain ongoing reporting and management obligations in relation to the Trust in accordance with the InvIT Regulations. These requirements include, among other things, (a) making investment decisions with respect to the underlying assets or projects of the Trust, (b) overseeing the activities of the Project Manager, (c) investing and declaring distributions in accordance with the InvIT Regulations, (d) submitting reports to the Trustee and (e) ensuring the audit of the Trust's accounts. There can be no assurance that the Investment Manager will be able to comply with such requirements in a timely manner or at all, which could subject the Investment Manager, the other parties to the Trust, the Trust or any person involved in the activity of the Trust to applicable penalties under the InvIT Regulations, the Intermediaries Regulations and/or the SEBI Act. Any such failure to comply or the imposition of any penalty could have a material adverse effect on our business, financial condition and results of operations. Under the InvIT Regulations, the SEBI also has the right to inspect documents, accounts and records relating to the activity of the Trust, Project SPV or parties to the InvIT and may issue directions in the nature of, *inter alia*, (i) requiring the Trust to delist its Units and surrender its certificate of registration; (ii) requiring the Trust to wind-up; (iii) requiring the Trust to sell its assets; (iv) requiring the Trust or parties to the Trust to take such action as may be in the interest of investors; or (v) prohibiting the Trust or parties to the Trust from operating in the capital market or from accessing the capital market for a specified period.

45. *Our Investment Manager is wholly-owned and controlled by the GoI, which makes us susceptible to changes to its policies.*

The Investment Manager is currently wholly-owned and controlled by the President of India acting through the Ministry of Road Transport and Highways ("**MoRTH**"). Accordingly, the GoI will be able to exercise significant influence over the Investment Manager, its policies and affairs. Although, by way of its letter dated July 12, 2022, MoRTH has communicated that the Investment Manager can manage its affairs as per its corporate governance framework and may recruit, compensate and remove the human resources as per the policies approved by the Nomination and Remuneration Committee of the IM Board, we cannot assure that the GoI will not change its policies in the times to come. Further, the GoI may require the Investment Manager to take actions aimed at serving the public interest, which may not be aligned with the commercial objectives of the NCD Holders.

46. *The InvIT Regulations allow for sponsors of listed InvITs to be declassified from the status of sponsors subject to certain conditions. There can be no assurance that our Sponsor will not exercise its ability to be declassified as the Sponsor of the Trust.*

The InvIT Regulations, pursuant to amendments made in June 2020, permit sponsors of listed infrastructure investment trusts to be declassified from the status of sponsors subject to compliance with the following conditions:

(i) The units of the relevant InvIT should have been listed on the stock exchanges for a period of three years;
(ii) The unitholding of such sponsor and its associates taken together should not exceed 10.00% of the outstanding units of the relevant InvIT;
(iii) The investment manager of the relevant InvIT is not an entity controlled by such sponsor or its associates; and

(iv) approval of unitholders has been obtained in accordance with the InvIT Regulations.
There can be no assurance that in the future, our Sponsor, upon fulfilment of the aforementioned conditions or any other conditions that SEBI prescribes for declassifications of sponsors, will not exercise its ability to declassify itself from the status of our Sponsor.

Risks related to India

47. *Changing laws, rules and regulations and legal uncertainties may materially and adversely affect our business, financial condition and results of operations.*

Our business, financial condition and results of operations could be materially and adversely affected by any change in laws or interpretations of existing, or the promulgation of new, laws, rules and regulations applicable to us and our business. There can be no assurance that the Government or State Governments will not implement new regulations and policies which will require the Trust Group to obtain additional approvals and licenses from governmental and other regulatory bodies or impose onerous requirements and conditions on our operations. The Investment Manager cannot predict the terms of any new policy, and there can be no assurance that such policy will not be onerous.

48. *Significant increases in the price or shortages in the supply of crude oil and products derived therefrom, including petrol and diesel fuel, could materially and adversely affect the volume of traffic at the projects operated by the Project SPV and the Indian economy in general, including the infrastructure sector.*

India imports a significant majority of its requirements of crude oil. Crude oil prices are volatile and are subject to a number of factors, including the level of global production and political factors, such as war and other conflicts, particularly in the Middle East, where a substantial proportion of the world's oil reserves are located. The recent invasion of Russia into Ukraine might disrupt crude supplies globally, thus affecting its' price. Any significant increase in the bitumen price or shortages in the supply of crude oil could materially and adversely affect the volume of traffic at the projects operated by the Project SPV and materially and adversely affect the Indian economy in general, including the infrastructure sector, which could have a material, adverse effect on our business, financial condition and results of operations.

49. *We may be affected by competition law in India and any adverse application or interpretation of the Competition Act could materially and adversely affect our business.*

The Competition Act, 2002, as amended (the "**Competition Act**"), regulates practices having an appreciable adverse effect on competition in the relevant market in India. Under the Competition Act, any formal or informal arrangement, understanding or action in concert, which causes or is likely to cause an appreciable adverse effect on competition is considered void and results in the imposition of substantial monetary penalties. Further, any agreement among competitors which directly or indirectly involves the determination of purchase or sale prices, limits or controls production, supply, markets, technical development, investment or provision of services, shares the market or source of production or provision of services by way of allocation of geographical area, type of goods or services or number of customers in the relevant market or directly or indirectly results in bid-rigging or collusive bidding is presumed to have an appreciable adverse effect on competition. The Competition Act also prohibits abuse of a dominant position by any enterprise.

On March 4, 2011, the Government issued and brought into force the combination regulation (merger control) provisions under the Competition Act with effect from June 1, 2011. These provisions require acquisitions of shares, voting rights, assets or control or mergers or amalgamations that cross the prescribed asset-and turnover-based thresholds to be mandatorily notified to and pre-approved by the Competition Commission of India (the "**CCI**"). Additionally, on May 11, 2011, the CCI issued the Competition Commission of India (Procedure in regard to the transaction of business relating to combinations) Regulations, 2011, as amended, which set out the mechanism for implementation of the merger control regime in India. The Competition Act aims to, among other things, prohibit all agreements and transactions which may have an appreciable adverse effect on competition in India. Further, the CCI has extra-territorial powers and can investigate any agreements, abusive conduct or combination occurring outside India if such agreement, conduct or combination has an appreciable adverse effect on competition in India.

The Government of India has also introduced the Competition (Amendment) Bill, 2022 in the Lok Sabha in August 2022, which has proposed several amendments to the Competition Act, such as introduction of deal value thresholds for assessing whether a merger or acquisition qualifies as a "combination", expedited merger review timelines, codification of the lowest standard of "control" and enhanced penalties for providing false information or a failure to provide material information. As these are draft amendments, we cannot ascertain at this stage as to whether the proposed amendments will come into force in the form suggested or at all, their applicability in respect of our operations, partially or at all once they come into force, or the extent to which the amendments, if and when they come into force, will result in additional costs for compliance, which in turn may adversely affect our business.

In the event, the Project SPV or the Trust enters into any agreements or transactions that have an appreciable adverse effect on competition in the relevant market in India, the provisions of the Competition Act will be applicable. Any prohibition or substantial penalties levied under the Competition Act could materially and adversely affect our financial condition and results of operations. Any adverse impact on our financial condition or operations due to the Competition Act may have a material adverse impact on our business, financial condition, results of operations and prospects and our ability to make distributions to the Unitholders.

50. *Any downgrading of India's debt rating by rating agencies could have a negative impact on our business.*

India's sovereign rating is Baa3 with a "stable" outlook (Moody's), BBB- with a "stable" outlook (S&P) and BBB- with a "negative" outlook (Fitch). India's sovereign rating could be downgraded due to various factors, including changes in tax or fiscal policy or a decline in India's foreign exchange reserves, which are outside our control. Any adverse revisions to India's credit ratings by rating agencies may adversely affect our ability to raise additional financing, and the interest rates and other terms at which such additional financing is available. This could materially and adversely affect our ability to obtain financing for capital expenditure, which could in turn materially and adversely affect our business, prospects, financial condition, results of operations and cash flows. India's sovereign debt rating could be downgraded due to various factors, including changes in tax or fiscal policy or a decline in India's foreign exchange resources, which are outside our control.

51. *Compliance with the European Union Directive on Alternative Investment Fund Managers may increase administrative and regulatory burdens on the Investment Manager and the Trust.*

As used herein, the "AIFMD" refers to Directive 2011/61/EU of the European Parliament and of the Council of June 8, 2011 on Alternative Investment Fund Managers, together with EU Commission delegated Regulation (EU) No. 231/2013 of December 19, 2012, supplementary Directive 2011/61/EU of the European Parliament and of the Council, and the national laws transposing Directive 2011/61/EU in any EEA Member State in which the Trust is marketed.

Among other things, the AIFMD regulates and imposes regulatory obligations in respect of the active marketing in the EEA by AIFMs (irrespective of whether they have their registered office in an EEA Member State or elsewhere) of AIFs (whether established in an EEA Member State or elsewhere). The Investment Manager is a Non-EEA AIFM for the purposes of the AIFMD. Non-EEA AIFMs are currently not able to become authorised under the AIFMD. In order to market to investors resident, domiciled or with a registered office in the EEA, non-EEA AIFMs must market AIFs in accordance with the applicable national regimes of the EEA member states in which they wish to market and comply with a sub-set of requirements under the AIFMD (which are much more limited in scope than those applicable to AIFMs that are established in the EEA). Such limited requirements are: (i) "point-of-sale" disclosures (as disclosed elsewhere), (ii) ongoing investor disclosures required pursuant to Articles 23(4) and (5) of the AIFMD (as to which, please see below), (iv) provision of information relating to the Trust's investments and its assets under management to the regulators of any EEA Member State into which Units in the Trust are actively marketed, and (v) the "asset-stripping" rules (in the event that the Trust acquires control of an EEA based portfolio company.

The information in respect of the Trust required to be disclosed pursuant to Articles 23(4) and (5) of the AIFMD will be made available to each Unitholder, as follows: (a) the percentage of the Trust's assets which are subject to special arrangements arising from their illiquid nature will be notified to the Unitholders; (b) any new arrangements for managing the liquidity of the Trust will be provided without undue delay in a disclosure notice delivered to each Unitholder; (c) the current risk profile of the Trust and the risk management systems employed by the Investment Manager to manage those risks may be provided in each annual report of the Trust; (d) any changes to the maximum level of leverage which the Investment Manager may employ on behalf of the Trust, as well as any right of the reuse of collateral or any guarantee granted under the leveraging arrangement, will be provided without undue delay in a disclosure notice delivered to each Unitholder; and (e) the total amount of leverage employed by the Trust may be provided in each annual report of the Trust.

In addition, it is possible that some EEA member states will elect in the future to restrict or prohibit the marketing of non-EEA AIFs to investors based in those jurisdictions. Any such restrictions or prohibitions may make it more difficult for the Trust to raise its targeted amount of commitments.

In light of the foregoing, the AIFMD could have an adverse effect on the Investment Manager or the Trust by, among other things, increasing the regulatory burden and costs of doing business in the EEA members states, imposing extensive disclosure obligations on companies located in EEA member states, if any, in which the Trust invests, and potentially disadvantaging the Trust as an investor in portfolio companies located in EEA member states as compared to competitors (e.g., those not in the alternative investment space) that may not be in scope of the AIFMD. ESMA has recently also consulted on the possible extension of the passport for marketing and managing under AIFMD to non-EEA based managers (the marketing and managing passports under AIFMD are currently only available to certain types of EEA based managers).

ESMA provided advice to the European Commission in July 2015 and July 2016 on whether, amongst other things, the passporting regime should be extended to the management and/or marketing of AIFs by non-EEA AIFMs. The European Commission is currently considering whether the passport should be extended. It is currently not clear what the impact would be for the Investment Manager or the Trust of any decision by the European Commission to extend the passporting regime. If the AIFMD regimes (where implemented) continue to exist in parallel with an extension of the passporting regime, then the Investment Manager may continue to market under AIFMD regimes, or choose to "opt-in" to rely on the passporting regime (which would likely mean an increase in regulatory and compliance costs to comply with the conditions of the passporting regime). If the AIFMD national regimes are removed, then the Investment Manager would likely need to "opt-in" to the passporting regime for any AIFMD marketing of the Trust (which would likely mean an increase in regulatory and compliance costs for the Trust).

52. *Investors may not be able to enforce a judgment of a foreign court against the Trust or the Investment Manager.*

The enforcement of civil liabilities by overseas investors in the NCDs, including the ability to effect service of process and to enforce judgments obtained in courts outside of India, may be adversely affected by the fact that (i) the Trust is constituted under the laws of the Republic of India, (ii) the Investment Manager is a limited liability company incorporated under the laws of the Republic of India, (iii) the directors and key personnel of the Investment Manager reside in India and (iv) all of the assets of the Trust and the Investment Manager are located in India. All of the assets of the Trust and the assets of the Directors are also located in India. As a result, it may be difficult to serve process upon the Trust, the Investment Manager or any of these persons outside of India or to enforce in India judgments obtained against such persons in courts outside of India.

India is not a party to any international treaty in relation to the recognition or enforcement of foreign judgments. Recognition and enforcement of foreign judgments are provided for under Section 13, Section 14 and Section 44A of the Civil Procedure Code. The GoI has, under Section 44A of the Civil Procedure Code, notified certain countries as reciprocating countries. Section 13 of the Civil Procedure Code provides that a foreign judgment will be conclusive regarding any matter directly adjudicated upon, between the same parties or between the parties whom they or any of them claim are litigating under the same title, except: (i) where the judgment has not been pronounced by a court of competent jurisdiction; (ii) where the judgment has not been given on the merits of the case; (iii) where it appears on the face of the proceedings that the judgment is founded on an incorrect view of international law or a refusal to recognise the law of India in cases in which such law is applicable; (iv) where the proceedings in which the judgment was obtained were opposed to natural justice; (v) where the judgment has been obtained by fraud; or (vi) where the judgment sustains a claim founded on a breach of any law in force then in India. Section 44A of the Civil Procedure Code provides that where a foreign judgment has been rendered by a superior court in any country or territory outside India, which the GoI has, by notification, declared to be a reciprocating territory, it may be enforced in India by proceedings in execution as if the judgment had been rendered by the relevant court in India. However, Section 44A of the Civil Procedure Code is applicable only to monetary decrees not being in the nature of any amounts payable in respect of taxes or other charges of a similar nature or in respect of a fine or other penalties and does not include arbitration awards. The United Kingdom and some other countries have been declared by the GoI to be a reciprocating territory for the purposes of Section 44A. However, the United States has not been declared by the GoI to be reciprocating territories for the purposes of Section 44A. A judgment of a court in the United States may be enforced in India only by a suit upon the judgment, subject to Section 13 of the Civil Procedure Code and not by proceedings in execution.

There may be considerable delays in the disposal of suits by Indian courts. It may be unlikely that a court in India would award damages on the same basis as a foreign court if an action is brought in India. Furthermore, it may be unlikely that an Indian court would enforce foreign judgments if it viewed the amount of damages awarded as excessive or inconsistent with the public policy in India. A party seeking to enforce a foreign judgment in India is required to obtain prior approval from the RBI to repatriate any amount recovered pursuant to execution and any such amount may be subject to income tax in accordance with applicable laws. Any judgment or award in a foreign currency would be converted into Indian Rupees on the date of the judgment or award and not on the date of the payment which could be subject to foreign exchange risk. Generally, there are considerable delays in the processing of legal actions to enforce a civil liability in India, and therefore it is uncertain whether a suit brought in an Indian court will be disposed of in a timely manner or subject to considerable delays.

53. *Permission to list in any stock exchange in India or abroad.*

While none of our securities or debt instruments have been denied permission to list on any stock exchange in India or abroad during last three years, any such refusal in the future might adversely affect tradability as well as price of then existing other listed securities or debt instruments.

Risks Related to the Issue and the NCDs

54. *Any downgrading in credit rating of our NCDs may affect the value of NCDs and thus to raise further debt.*

The NCDs proposed to be issued pursuant to this Issue have been rated 'CARE AAA;Stable' by way of their letter dated October 10, 2022 by CARE Ratings Limited for an amount of up to ₹15,000 million and rated as 'IND AAA/Stable' by India Ratings for an amount of up to ₹ 15,000 million by way of its letter dated October 10, 2022. While the these ratings are finalised by the Credit Rating Agencies, we cannot assure you that such credit ratings received reflect all potential risks. Any downgrade of our credit ratings may adversely affect the value of NCDs, increase borrowing costs and constraint our access to capital and debt markets. In addition, downgrades of our credit ratings could increase the possibility of additional terms and conditions being added to any additional financing or refinancing arrangements in the future. There is a possibility of increase in forced sale of our NCDs by the investors resulting in sharp decline in their market price. Any such adverse development could adversely affect our business, financial condition, cash flows and results of operations. For further details regarding the rating letters and press release for the aforementioned rating, please see the "CARE Rating and Press Release" and "India Ratings Rating and Press Release", attached as **Annexure B1** and **Annexure B2**, respectively.

55. *Security provided for the NCDs as part of the Issue, may not be enforceable if the security provided for the NCDs as part of the Issue is classified as "Assets" under the IT Act and may be void as against any claim in respect of any other sum payable by the Investment Manager (on behalf of the Trust).*

Under Section 281 of the IT Act and circular bearing number 04/2011 dated July 19, 2011, the Investment Manager (on behalf of the Trust) is required to obtain prior consent of the assessing officer to create the security provided for the NCDs as part of the Issue to the extent classified as 'Assets' under Section 281 of the IT Act. We have made an application to the relevant assessing officer seeking such prior consent on September 14, 2022. In the event that such consent is not granted, the security provided for the Issue to the extent classified as 'Assets' under Section 281 of the IT Act will be void as against any claim in respect of any tax or any other sum payable by the Investment Manager (on behalf of the Trust). Under the current income tax laws, where an assessee takes loans or issues debentures pursuant to which a charge is created on existing assets of the assessee, the tax authorities may hold such charge as void (to the extent of outstanding demand) which has been created during pendency of any proceedings, or after completion of proceeding but before the service of notice of recovery (under rule 2 of the Second Schedule of the Income-tax Act, 1961), if prior permission of the tax department has not been undertaken in accordance with the provisions of section 281 of the Income Tax Act, 1961. While an application for issuance of non-objection under section 281 has been made by us, however, no action has been taken by the tax authorities on the said application and the same is still pending for disposal. In absence of no-objection certificate, the tax authorities may void the charge created by us on the assets by imposing the provisions of section 281 for any tax demand created in future.

56. ***There are other lenders who have pari passu charge over the security provided.***

There are other lenders of the Trust who have *pari passu* charge over the security provided for this Issue. The rights over the security provided will not be granted directly to holders of the NCDs. While the Trust is required to maintain 100% asset cover for the outstanding amount of the NCDs and interest thereon, upon the Trust's bankruptcy, winding-up or liquidation, the other lenders will rank *pari passu* with the NCD Holders and to that extent, may reduce the amounts recoverable by the NCD Holders. Further, there could be other assets which are/could be exclusively secured in favour of other lenders of the Trust, including pledge over the shares of the Project SPV in favour such other lenders. To that extent, the NCD Holders shall rank subservient to such other lenders and shall also not have the benefit of the rights accruing from such security which is exclusively available to such other lenders. In particular, by enforcement of the pledge over the shares of the Project SPV, the other lenders will have the right to takeover and/or dispose of the shares of the Project SPV to the exclusion of the NCD Holders.

57. ***This being a maiden offering of NCDs by an InvIT bearing STRPP structure, associated risks may be unforeseen and we may not be able to resolve such risks satisfactorily or at all.***

The NCDs to be Issued bear a STRPP structure, which is a maiden offering through a public issuance mode to investor segment comprising qualified institutional buyers ("**QIBs**"), bodies corporate, HNIs and retail investors. Whilst QIBs and bodies corporate may have familiarity with STRPP structure through past private placement offerings, etc., the retail investors may not have an equivalent degree of familiarity with the structure.

58. ***Changes in interest rate may affect the price of our NCDs. Any increase in rate of interest, which frequently accompany inflation and/or a growing economy, are likely to have a negative effect on the price of our NCDs.***

All securities where a fixed rate of interest is offered, such as our NCDs, are subject to price risk and the price of such securities will vary inversely with changes in prevailing interest rates, i.e. when interest rates rise, prices of fixed income securities fall and when interest rates drop, the prices increase. The extent of fall or rise in the prices is a function of the existing coupon, days to maturity and the increase or decrease in the level of prevailing interest rates. Increased rates of interest, which frequently accompany inflation and/or a growing economy, are likely to have a negative effect on the price of our NCDs.

59. ***There may be a delay in making refund / unblocking of funds to the Applicants.***

We cannot assure you that the monies refundable to you, on account of (i) withdrawal of your applications, (ii) our failure to receive minimum subscription in connection with the Base Issue, (iii) withdrawal of this Issue, or (iv) failure to obtain the final approval from the Stock Exchange for listing of the NCDs, will be refunded to you in a timely manner. We, however, shall refund / unblock such monies, with the interest due and payable thereon as prescribed under applicable statutory and/or regulatory provisions.

60. ***The fund requirement mentioned in the Objects of the Issue have not been appraised by any bank or financial institution.***

We intend to use the proceeds of the Issue, after meeting the expenditures of and related to the Issue, for the purpose of onward lending to the Portfolio Assets, financing and for repayment /prepayment of interest and principal of existing borrowings of the Trust, and general corporate purpose, subject to applicable statutory and/or regulatory requirements (in particular, not more than 25% of our net proceeds being utilized for general corporate purposes). For further details, please see the section titled "*Objects of the Issue*" on page 63. The fund requirement and deployment is based on internal management estimates and has not been appraised by any bank or financial institution. The Board of Directors of the Investment Manager will have significant flexibility in applying the proceeds received by us from the Issue. The utilization details of the proceeds of the Issue shall be adequately disclosed as per applicable law. Further, as per the provisions of the SEBI ILDS Regulations, we are not required to appoint a monitoring agency and therefore no monitoring agency has been appointed for the Issue.

61. ***There is no assurance that the NCDs issued pursuant to this Issue will be listed on Stock Exchanges in a timely manner, or at all.***

In accordance with applicable law and practice, permissions for listing and trading of the NCDs issued pursuant to this Issue will not be granted until after the NCDs have been issued and allotted. Approval for listing and trading will require all relevant documents to be submitted and carrying out of necessary procedures with the Stock Exchanges. There could be a failure or delay in listing the NCDs on the Stock Exchanges for reasons unforeseen. If permission to deal in and for an official quotation of the NCDs is not granted by the Stock Exchanges, the Trust (through the Investment Manager will forthwith repay, with interest, all monies received from the Applicants in accordance with prevailing law in this context, and pursuant to this Prospectus. There is no assurance that the NCDs issued pursuant to this Issue will be listed on Stock Exchanges in a timely manner, or at all.

62. *There may be no active market for the NCDs on the platform of the Stock Exchanges. As a result, the liquidity and market prices of the NCDs may fail to develop and may accordingly be adversely affected*

There can be no assurance that an active market for the NCDs will develop or at what price will the NCDs trade in the secondary market or whether such market will be liquid or illiquid. If an active market for the NCDs fails to develop or be sustained, the liquidity and market prices of the NCDs may be adversely affected. The market price of the NCDs would depend on various factors, *inter alia*, including (i) the interest rate on similar securities available in the market and the general interest rate scenario in the country, (ii) the market for listed debt securities, (iii) general economic conditions, and, (iv) our financial performance, growth prospects and results of operations. In addition, the trading of the NCDs may be impacted by temporary exchange closures, broker defaults, settlement delays, strikes by brokerage firm employees and disputes, among others. The aforementioned factors may adversely affect the liquidity and market price of the NCDs, which may trade at a discount to the price at which you purchase the NCDs and/or be relatively illiquid.

63. *The NCD Holders may not be able to recover, on a timely basis or at all, the full value of the outstanding amounts and/or the interest accrued thereon in connection with the NCDs. Failure or delay to recover the expected value from a sale or disposition of the assets charged as security in connection with the NCDs could expose the holders to a potential loss.*

Our ability to pay interest accrued on the NCDs and/or the principal amount outstanding from time to time in connection therewith would be subject to various factors inter-alia including our financial condition, cash flows, profitability and the general economic conditions in India and in the global financial markets. We cannot assure you that we would be able to repay the principal amount outstanding from time to time on the NCDs and/or the interest accrued thereon in a timely manner or at all. Although the Investment Manager will create appropriate security in favour of the Debenture Trustee for the NCD Holders on the assets adequate to ensure 100% asset cover on the outstanding amount of the NCDs, the realizable value of the assets charged as security, when liquidated, may be lower than the outstanding principal and/or interest accrued thereon in connection with the NCDs. While the NCDs will be secured to the tune of 100% of the principal and interest amount or as per the terms of this Prospectus, in favour of Debenture Trustee, the Debenture Trustee shall monitor that the security is maintained, however, the recovery of 100% of the amount shall depend on the market scenario prevalent at the time of enforcement of the security. A failure or delay to recover the expected value from a sale or disposition of the assets charged as security in connection with the NCDs could expose you to a potential loss.

64. *NCD Holders may be subject to Indian taxes arising out of capital gains on the sale of the Debentures and on any interest component of any returns from the Debentures.*

The returns received by the investors from Debentures issued by the Trust in the form of interest and the gains on the sale/ transfer of the Debentures may be subject to tax liabilities under the Income Tax Act, 1961. For details of possible tax benefits available to the trust and NCD Holders under the applicable laws in India, please see the section titled "*Statement of Possible Tax Benefits*" on page 67.

65. *The Trust may raise further borrowings and charge its assets after receipt of necessary consents from its existing lenders, wherever applicable.*

The Trust shall be entitled to make further issue of secured or unsecured debentures and/or raise term loans or raise further funds from time to time from any persons, banks, financial institutions or bodies corporate or any other agency subject to such consents and approvals and other conditions, as may be required under applicable law or financing agreements, this Prospectus, the Debenture Trust Deed, by creating a charge on any assets (if so stipulated), provided the stipulated security cover is maintained, at all times.

66. *The Trust, being an infrastructure investment trust is not required to maintain debenture redemption reserve ("DRR") for the NCDs.*

The provisions of the Companies Act, 2013 require maintenance of a DRR by an issuer of debt securities, upon availability of distributable profits in the company. However, such provisions are not applicable to the Trust in accordance with the SEBI Debt Issue Guidelines, SEBI ILNCS Regulations and the SEBI Operational Circular.

67. *Any additional debt financing or issuance of additional Units may have a material, adverse effect on the Trust's distributions, and your ability to participate in future rights offerings may be limited.*

The Investment Manager may require additional debt financing or the issuance of additional Units in order to support the operating business or to make acquisitions and investments. If obtained, any such additional debt financing may decrease distributable income, and any issuance of additional Units may dilute existing Unitholders' entitlement to distributions.