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Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects

Contractual, Financing, Tax and Accounting Discussions

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Foreword

Justice Vipin Sanghi
Acting Chief Justice

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I have glanced through the book *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects—Contractual, Financing, Tax and Accounting Discussions* authored by Mr. Abhinav Mittal, Mr. Puneet Agrawal and Ms. Shuchi Agrawal.

Hybrid Annuity Model, also called HAM, has emerged as a bankable contractual model for promoting Public-Private Partnerships (PPP) in the transport sector in India. This book provides a good coverage of various aspects of this PPP model from contractual, taxation and accounting perspectives.

Hybrid Annuity Model is being used in several high-value PPP contracts in the country, and it is essential for stakeholders to understand the various nuances of such contracts for successful implementation for these projects. Developers engaged in implementing these projects should be familiar with various conditions of the Model Concession Agreement which have been covered in detail as a part of the book. The accounting treatment of such HAM projects is explained through various provisions of Indian Accounting Standards. Since HAM contracts involve construction spread over several years and involve annuity payment period spanning across several years, the relevant income tax and GST implications have been explained with help of relevant case laws.

I have gone through the hard work carried out by the authors in coming out with this textbook covering all these aspects from a practical point of view. The authors have painstakingly used a case-study approach with numerical examples, which can help the industry to gather more practical insights regarding the projects awarded under HAM.

The highlight of this textbook is that the professionals, who have been working in infrastructure sector for several years, have tried to answer several common queries of developers and regulators concerning HAM PPP model and have tried to give practical solutions. The landscape for research and improvement is never ending, but this work of the authors would, in my view, be of immense help for the regulators, trade as also to the practitioners in the field.

In my view, this book would be a valuable tool in the hands of those dealing with projects awarded under the HAM PPP model to find solution to various problems which confront them on day-to-day basis.

I wish the authors all the best.

June 2022

Vipin Sanghi
Acting Chief Justice
High Court of Delhi
New Delhi, India

Preface

Public-Private Partnerships (PPPs) have been widely accepted around the globe to encourage private sector participation in development of infrastructure sector and to bring efficiency in delivery of public services. Many countries already have some experience using PPPs for procurement of infrastructure, and development for such projects is supported by large Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs).

The concept of **Hybrid PPPs** was initially promoted with an objective to utilize the grant financing available from state/federal governments and the commercial bank financing available via involvement of the private sector participants in such infrastructure projects. Such hybridization enabled the reduction in perceived financial risk or bankability of such projects, thus catalysing larger infrastructure developments which were not financially viable on their own.

One such Hybrid PPP model is **Hybrid Annuity Model (HAM)** implemented in roads sector in India. This book analyses how HAM gave a new lease and life to Public-Private Partnership (PPP) projects in India. In past six years of notification of this PPP model since 2016, road projects in India have seen participation from more than 50 private sector players (most of them being first-time developers) with more than 250 projects awarded by National Highways Authority of India (NHAI). This book provides a complete multidimensional review and detailed analysis of financial, commercial, legal, tax and accounting aspects for HAM-based PPP projects in India.

This book would help the user to understand the contractual structure between different stakeholders under the Hybrid Annuity Model (HAM) along with the consequent risk allocation framework, various obligations of the concessionaire/private sector participant and the government authority as well as the key advantages from the perspective of both parties while delivering such HAM-based PPP projects.

In **Part I** of the book, the authors have given an introduction about the evolution of Hybrid Annuity Model in India and the timeline of events through which the government has been improving upon the contractual structure and risk allocation of this PPP model. This chapter would be extremely beneficial for readers to gain an understanding of how industry feedback has influenced the evolution of this

particular PPP model and how the government agencies need to be flexible in their approach to ensure greater acceptability and bankability of notified PPP models to help enhance private sector participation in infrastructure delivery.

In **Part II** of the book, the authors have discussed the key elements of HAM-based road PPP projects including the contractual structure, risk allocation framework, roles and responsibilities of the various agencies involved and advantages. This part also provides a review of all HAM projects implemented till date and how it has become the preferred mode of private participation in delivery of road projects in the country. This part further discusses the key considerations for project finance and the growing interest from local and international investors who have been active in the secondary market/acquisitions of such projects.

In **Part III** of the book, the authors have used a novel case-study-based approach with 100+ numerical examples throughout this part of the book to explain and discuss contractual/commercial, taxation (direct and indirect taxes) and accounting aspects of Hybrid Annuity Model (HAM). A detailed financial model was prepared for the case study of Project Highway which was the bid financial model used for a real-life project, and the values therein were subsequently modified. This financial model is used to explain the various concepts and computations in subsequent chapters in Part III of the book. This would be extremely beneficial for government agencies, private sector developers, investors and project financiers across the globe.

The book contains detailed chapters on Model Concession Agreement (MCA) review, taxation (including direct taxes such as income tax and indirect taxes such as Goods and Services Tax (GST)) and accounting aspects (with regards to applicability of Indian Accounting Standards Ind AS 115). Further, all the concepts regarding these aspects of any HAM-based road PPP project are well explained with the help of a model case study of Project Highway along with detailed numerical examples and computations.

In **Part IV** of the book, the authors have further provided examples of success of Hybrid PPPs for infrastructure development across multiple countries globally through case studies of similar public-private partnership models. Through these case studies, the readers will gain an understanding of the different contractual structures, risk allocation, roles and responsibilities of various stakeholder, payment mechanism and key learnings from such projects.

This book is one-of-kind book with a 360° coverage of financial, commercial, taxation and accounting aspects of the Hybrid Annuity Model (HAM), a successful model of private sector participation in the roads sector in India. It is a one-stop guide for multiple stakeholders involved in the development of crucial infrastructure sector in India and globally. HAM has proved very successful for PPPs in road sector in India, and it is being further adopted in water sector as well. Written by deal practitioners with a case-study approach and illustrative numerical calculations, this book provides a complete quantitative and qualitative analysis for readers.

Further, the international case studies on Hybrid PPPs across the globe give the reader a unique perspective and serve as a useful guide to government agencies and private sector alike on risk allocation, transaction structuring and payment mechanism about such PPP models.

The target audience for this book include private sector players/developers who would find it very useful for their internal teams who have either won or are planning to bid for such projects as well as commercial lenders and investors who are looking to finance such projects in the long term. This book would also be useful for researchers, academia and deal practitioners since it covers financial, contractual, tax and accounting aspects of the Hybrid Annuity Model in a comprehensive manner.

Singapore — Abhinav Mittal, CFA
New Delhi, India — Puneet Agrawal
New Delhi, India — Shuchi Agrawal

Contents

About the Authors

Abhinav Mittal has more than 12 years of experience in financial advisory across multiple infrastructure sectors including power, renewable energy, water, waste management, transport, urban and social infra projects. His geographic experience spans across Asia, Middle East and Africa. He brings experience in PPP Transactions, Project Finance (debt raise and restructuring), Financial Modelling and Capacity Building. He works with governments, private sector clients and Development Finance Institutions (DFIs) including Asian Development Bank, The World Bank and Private Infrastructure Development Group. He is Managing Director of YOG INFRA which is an infrastructure focussed financial advisory firm with an objective to drive economic growth and make positive social impact through sustainable infrastructure development. He has completed his Engineering from NIT Warangal, MBA (Finance) from XIMB and is a CFA charter holder from CFA Institute, USA.

Puneet Agrawal has more than 16 years of experience in providing legal services. He is an arguing counsel appearing in high courts and tribunals, specializing in tax and commercial law. He is actively engaged in providing legal and tax consultancy to corporates including public sector undertakings (PSUs)/State-owned Enterprises (SOEs) and Fortune 500 companies. He is a Member of Supreme Court Bar Association, Delhi High Court Bar Association, Sales Tax Bar Association and ITAT Bar Association in India. He is a visiting faculty in the Institute of Chartered Accountants of India (ICAI) and has already co-authored four books on taxation. He completed his B.Com. (Hons) from SRCC, is a qualified Chartered Accountant and a practicing Lawyer.

Shuchi Agrawal has more than 10 years of experience in advisory, business consulting and providing solutions to complex transactions across multiple infrastructure sectors with a strong focus on urban infrastructure and real estate developments. She is statutory auditor of various HAM SPVs. In the past, Shuchi has worked with EY and Lakshikumaran and Sridharan, which are leading advisory firms in India. Shuchi has advised global multinational companies (MNCs) with focus on Infrastructure, Healthcare and Real Estate. She completed her B.Com. (Hons), LLB, and is a practicing Chartered Accountant.

Acronyms

AD	Appointed Date
BOT	Build-Operate-Transfer
BPC	Bid Project Cost
CC	Completion Certificate
CoD	Commercial Operation Date
CP	Condition Precedent
CPI	Consumer Price Index
D:E	Debt: Equity Ratio
DEA	Department of Economic Affairs
DFI	Development Finance Institution
DSCR	Debt Service Coverage Ratio
EPC	Engineering, Procurement and Construction
FC	Financial Close
FM	Force Majeure
GoI	Government of India
GST	Goods and Services Tax
IBWCA	Interest Bearing Working Capital Advance
IE	Independent Engineer
Ind AS	Indian Accounting Standards
InvIT	Infrastructure Investment Trust
IP	Intellectual Property
IPE	Indirect Political Event
ITC	Input Tax Credit
KPI	Key Performance Indicator
LLCR	Loan Life Coverage Ratio
MCA	Model Concession Agreement
MCLR	Marginal Cost of Funds-Based Lending Rate
MDBs	Multilateral Development Banks
MoRTH	Ministry of Roads, Transport and Highways
NHAI	National Highways Authority of India
NMCG	National Mission for Clean Ganga
NPE	Non-Political Event
NPV	Net Present Value
O&M	Operation and Maintenance

PCC	Provisional Completion Certificate
PE	Political Event
PFI	Private Finance Initiative
PIM	Price Index Multiple
PPP	Public-Private Partnership
R&R	Resettlement and Rehabilitation
REIT	Real Estate Investment Trust
RFP	Request for Proposal
RoW	Right of Way
SCOD	Scheduled Commercial Operation Date
SEBI	Securities and Exchange Board of India
SPV	Special Purpose Vehicle
STP	Sewage Treatment Plant
VfM	Value for Money
VGF	Viability Gap Funding
WPI	Wholesale Price Index

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Part I
Introduction

Evolution of Hybrid PPPs

1

Public Private Partnerships (PPP/P3) have been widely accepted globally to encourage private sector participation in development of infrastructure sector and to bring efficiency in delivery of public services.

The implementation model for any PPP project depends on the context of the sector and the purpose/users for the project. The private sector participation can take place across the infrastructure project life cycle and may include design, construction, finance and/or maintenance of the asset depending upon the PPP modality employed. Similarly, the payment mechanism from to the private sector may also vary as availability based payments, usage based (incorporating elements of market or demand risk) or a mix of both.

The term PPP originated in the UK in the late 1990s. Initially, a system called PFI (Private Finance Initiative), which focuses on utilization of private capital, was introduced in the UK. Thereafter, the basic concept of PPP was established as a general term referring to various kinds of public-private partnerships, including PFI. PPP thereby spread from Europe to countries all over the world.

The projects tendered through PPP typically achieve more value for money (VfM). Many countries already have some experience using PPPs for procurement of infrastructure; and development for such projects are supported by large Multilateral Development Banks (MDBs) and Development Finance Institutions (DFIs) like Asian Development Bank (ADB), the World Bank, European Bank of Reconstruction and Development (EBRD), European Investment Bank (EIB) etc. Recently, two such development finance institutions were formed namely, Asian Infrastructure and Investment Bank (AIIB) and New Development Bank (NDB).

The concept of hybrid PPPs was initially promoted with an objective to utilize the grant financing available from state/federal governments and the commercial bank financing available via involvement of the private sector participants in such infrastructure projects. Such hybridization enabled the reduction in perceived financial risk or bankability of such projects, thus catalyzing larger infrastructure developments which were not financially viable on their own.

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Box: Hybrid PPPs in the European Union (EU)

The concept of hybrid PPP's was first introduced in the European Union (EU) in early 2000s. A hybrid PPP model is defined by the EU as a PPP structure where EU funds were used to finance a specific element of the infrastructure project [1]. In hybrid projects, funds can be combined under a single contract for the entire infrastructure project; or a part of the infrastructure project is financed from the EU funds, while the privates partner finances the construction of the remaining part of the infrastructure project. In either case, the private sector would typically operate and maintain the entire project on a long-term. Hybrid projects are used in many areas namely, roads, waste, urban and social infrastructure sectors.

It was seen in the case of hybrid projects; involvement of a private partner improved effectiveness and value for money (VfM) while the involvement of EU played a very important role in enhancing credit worthiness of the project. In addition, it was ensured that the initial cost of the project feasibility studies were paid and institutional supported provided for such projects.

Source European Union (EU), Public Information

Evolution of Hybrid PPPs also find its roots in innovative financing models wherein new and involving models beyond commercial debt finance that are able to attract private and institutional capital into the infrastructure sector development for public delivery. Such innovate and hybrid PPP models are driven by the increased demand for infrastructure (which results in an infrastructure gap between current spending and required spending) as well as sustainability considerations for infrastructure development and the need to reduce the impact of climate change.

In the subsequent section, we discuss how Hybrid Annuity Model (HAM) evolved in India to revitalize the private sector participation in roads sector in the country; and it has led to an increase in the pace of award and construction of national highways apart from de-risking the developers and lenders from inherent shortcomings associated with conventional toll and annuity based Build-Operate-Transfer (BOT) PPP model.

1.1 Evolution of Hybrid Annuity Model (HAM) in India

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

erstwhile BOT model; and to also encourage EPC players to deliver highway projects as developers instead of construction contractors.

A brief summary description various models of private sector participation in the roads sector in India, is below.

1. ***Engineering Procurement Construction (EPC) model***

   Engineering Procurement Construction or EPC/Turnkey projects are awarded with full payment by government authority for road construction, without any deferred payouts mechanism. The obligations of the EPC contractor are till project commercial operation date (CoD); and the government authority has the responsibility for operation and maintenance of the project.

   Another variant of such contracts is Modified Design-Build contracts. In this particular PPP model, along with the construction/EPC obligation, the private sector also had the operation and maintenance (O&M) obligation for a period of around 5–7 years.

2. ***Build-Operate-Transfer (BOT) model***

   The Build-Operate-Transfer (BOT) model was widely used for long-term private sector participation in the roads sector in India; can be further categorized in two models based on the allocation of market risk to public or private sector.
   (a) BOT-Toll—These operate on a user-charge recovery base (e.g., tolls) which may also be supported by some form of capital cost support or viability gap fund from the public sector. Thus, the revenue risk transfer is completely passed to the private concessionaire.
   (b) BOT-Annuity—These relate to projects, where it is infeasible for sizable cost recovery through user charges. No construction-stage payments are made, and payments are made through contracts based on availability/performance payments over an extended length of time (10–15 years post construction).

3. ***Hybrid Annuity Model (HAM)***

   As mentioned earlier. HAM is a blend of EPC and BOT models. A substantial cost of the project (40%) is paid during the construction stage and the balance of payments are made in an annuity mode (linked to concession agreement based on availability of the road asset) over an extended period of time of about 15 years.

The subsequent chapters further detail the timeline of evolution of HAM in India, key principals, contractual structure, risk allocation and detailed discussion on the contractual, commercial, taxation and accounting aspects of this particular PPP model.

Traditionally, in early 2000s, road projects in India were awarded to private sector using BOT-Toll model with success, mainly connecting important cities with steady and growing traffic. But it was clear that in some road segments may not have adequate toll paying traffic thus requiring partial government support.

Hence, the government introduced Viability Gap Funding (VGF) in 2005–06 wherein the government would provide a 20–40% of project cost as grant under the BOT-Toll model and the concessionaire asking for minimum VGF grant could get the project.

For projects which were not commercially viable due to their poor toll collection prospects, government offered 100% support by annuity payment over the concession period under BOT-Annuity model which was introduced in 2002–03. As per this model, the bidder asking for lowest annuity was awarded project without toll collection responsibility.

Until 2011, the number of PPP projects in India was steadily increasing, but this resulted in a sharp decline from 2012 onwards. Behind this decline is the fact that excessive competition among operators, delays in business activities due to delays in land acquisition, and other factors caused a rise in the debt ratios of operators and non-performing loans of financial institutions that provided loans, resulting in the growing reluctance of financial institutions to offer loans.

Further, the BOT-Annuity model is not sustainable in the long term since it puts aggressive burden on the balance sheet of government authority in terms of committed annuities over a long term. BOT-Annuity model was slowly curtailed.

Since the new union government was formed in India in May 2014, there was great emphasis on finding solutions to enhance private sector participation in road construction while avoiding a significant burden on government balance sheet in the long term. Hence, the HAM model was proposed in 2015 and subsequently, approved in 2016 for road projects in the country and has been widely successful with around 150 projects awarded in 4 years since it was notified.

Box: National Highway 56 Expansion—From BOT to HAM

In Aug-16, NHAI awarded National Highway 56 expansion project toll road PPP to Dilip Buildcon at a cost of an INR 2016 Cr. The project is to expand the 123 km Lucknow-Sultanpur section of National Highway 56 in the northern state of Uttar Pradesh from two to four lanes. The SPV was incorporated as DBL Lucknow Sultanpur Highways.

This project was previously procured and awarded on a build, operate and transfer basis to a joint venture of Essar and Atlanta, but the contract was subsequently terminated.

This project is one of the first projects awarded under HAM for which completion certificate (CC) has been issued and the project is in operation phase.

In the initial models of EPC/BOT (Annuity), the revenue risk was completely taken by the government and fixed annuity payments were made to the private concessionaire. This was subsequently followed by the BOT (Toll) model wherein the complete revenue risk was transferred to the private sector concessionaire through toll collection. However, the private sector interest slowly declined due to this particular risk allocation. Now, the PPP model of HAM brings back the concept of availability payments from government to the private sector which was primarily done to revitalize the private sector participation in the road sector.

1.2 Key Principals—Hybrid Annuity Model (HAM)

The key principles of the HAM based PPP projects in roads sector in India can be summarized as below:

- Design and construction risks are entirely passed on to concessionaire. Land risk for the project site is passed to the government agency.
- Milestone payments are made during construction period, at which the concessionaire only gets the part of capital cost incurred until that point.
  - As per model concession agreement, 40% of the bid project cost shall be payable to the concessionaire by the authority in ten (10) equal instalments linked to physical progress of the project during construction period.
  - Concessionaire shall have to initially bear the balance 60% of the project cost through a combination of debt and equity
- Below payments will be made by government agency to the concessionaire on a semi-annual basis during the operation period:
  - Balance of deferred capital cost payments (i.e. 60% as per model concession agreement),
  - Interest thereon (interest rate defined as average MCLR of top 5 scheduled commercial banks in India plus 1.25%), and
  - O&M costs (in accordance with the amount quoted which will be inflation indexed).
- Concession period comprises
  - Construction period, which shall be project specific (730 days as per model concession agreement), and
  - Operations period of up to 15 years.
- Bid parameter in HAM PPP projects for roads sector is Project life cycle cost which is defined as sum of below components:
  - NPV of quoted bid project cost, and
  - NPV of the operations and maintenance (O&M) cost for the entire operations period
  - Bid is awarded to the developer quoting lowest NPV for project life cycle cost.

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Hybrid Annuity Model (HAM)—Timeline

2

Since its introduction in 2016, the Hybrid Annuity Model (HAM) has undergone multiple changes based on experience of implementation of highway projects in the Indian subcontinent. In the past six years starting 2016 till 2022, there have been multiple tweaks to this particular PPP model so as to bring risk allocation and contractual structure in line with global best practices so as to attract interest from both local as well as international investors in the roads sector in the country; and this has indeed enabled a sizable investment from international investors in this particular segment of infrastructure.

This chapter provides a detailed chronological timeline for such evolution of the Hybrid Annuity Model (HAM) along with a compilation of all the relevant government notifications and circulars issued by the government authorities in this regard. A summary description of all such circulars/notifications is also provided for ease of understanding of the readers.

This chapter would be extremely beneficial for readers to gain an understanding of how industry feedback has influenced the evolution of this particular PPP model and how the government agencies need to be flexible in their approach to ensure greater acceptability and bankability of notified PPP models to help enhance private sector participation in infrastructure delivery.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/978-981-19-2019-6_2.

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2.1 Key Circulars/Notifications

Table 2.1 provides a complete list of relevant circulars, bid documentation and notifications regarding implementation of road projects under the Hybrid Annuity Model (HAM) issued by two key government agencies namely:

- Ministry of Road Transport and Highways (MoRTH), Government of India (GoI)
- National Highways Authority of India (NHAI).

The table also provides a brief description of the contents key notifications/circulars [1, 2].

Table 2.1 Key circulars/notifications for HAM in India

#	Date	Circular No.	Title, Key contents	Issued by
1	16 November 2015	RW/NW-37011/15/2015-PPP	Cost Norms in respect of National Highway Projects to be implemented on Hybrid Annuity Mode *This circular, issued in 2015, was the first circular to provide the method and norms to compute estimated costs in respect of road highway projects to be implemented under HAM, besides the base civil construction cost. It is pertinent to mention here that at the time of issuing request for proposal (**RFP**) for any ham project, the relevant government agency provides an estimate of the cost of project (the **Estimated Project Cost**) as computed based on cost norms followed by the government.*	MoRTH
2	24 November 2015	–	1. Hybrid Annuity Model—RFP Document Part 1. 2. Hybrid Annuity Model—RFP Document Part 2. 3. Hybrid Annuity Model Bid Excel Sheet *MoRTH issued the above mentioned bid documentation for HAM projects.*	MoRTH

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
3	1 December 2015	NH·24028/14/2014·H (Vol 2)	Hybrid annuity model for implementing highway project—furnishing of clarification—reg. *This circular provides the public notification of responses from MoRTH provided regarding clarifications raised Department of Economic Affairs (DEA) on certain aspects of HAM PPP model.*	MoRTH
4	8 February 2016	NH·24028/14/2014·H (Vol 2)	Hybrid Annuity Model for implementing Highway Projects—reg. *This circular notifies HAM as one of the PPP models to be used for development of highways in roads sector and provides salient features of the concession agreement as approved by the competent authority.*	MoRTH
5	15 February 2016	8.1.21	Delegation of powers for approval of bids for award of works under Hybrid Annuity mode *Vide this circular, NHAI notified the delegation of power for award of HAM projects based on the response to bid*	NHAI
6	19 February 2016	RW/NH-24036/27/2017	Cost Norms in respect of National Highway Projects to be implemented on Hybrid Annuity Mode-Corrigendum *This circular provides a clarification regarding computation of escalation in project cost, to be computed from bid due date/bid submission date instead of appointed date. The same was reflected in the Model Concession Agreement issued for HAM model for highway projects.*	MoRTH
7	12 May 2016	12.16	Approval RFP document for appointment of Safety Consultants for all highway projects (BOT/HAM/OMT/EPC) under NHAI *Vide this circular, NHAI notified the RFP for appointment of safety consultants which is applicable for all highway projects under NHAI, including those being implemented under HAM.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
8	8 July 2016	NH·24028/14/2014·H (Vol 2)	Hybrid Annuity Model for Implementing Highway Projects—amendment in Model Concession Agreement—reg *Vide this circular, MoRTH had made certain changes in the mechanism for recovery of Mobilization Advance from Concessionaire for HAM based PPP projects. However, this was kept in abeyance shortly after as per a separate notification.*	MoRTH
9	16 November 2016	NH·24028/14/2014·H (Vol 2)	Hybrid Annuity Model for Implementing Highway Projects-amendment in Model Concession Agreement-reg. *Vide this circular, MoRTH clarified that the earlier circular dated 8 July 2016 was kept in abeyance.*	MoRTH
10	9 December 2016		Hybrid Annuity Model—Model Concession Agreement *Vide this notification, MoRTH notified the complete version of MCA for HAM model for highway project. However, an updated version of the MCA was notified in 2020 based on multiple changes made as per industry feedback. A detailed contractual review of the latest MCA (issued in Nov-20) has been provided in PART III of this book.*	MoRTH
11	1 June 2017	NH-37015/1/2009-H	Amendment to Model RFP for Hybrid Annuity projects (Amendment No.1/2017)—reg. *Vide this circular, the qualification criteria as per the Model RFP was modified for bidders/consortiums wherein more than 50% of the equity is held by persons outside of India. It was notified that the qualification of such bidders/consortiums shall be subject to approval of government authority from a national security and public interest perspective. Further, such decision made by the government authority shall be final, conclusive and binding of such bidders/consortiums.*	MoRTH

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
12	29 September 2017	3.3.14	Clarification on Applicability of GST on Hybrid Annuity Projects, which are in bidding stage for uniformity—reg. *Vide this circular, NHAI clarified the applicability of GST on payments made by NHAI during construction (GST to be applicable with 100% Input Tax Credit) and operations (GST to be paid by NHAI separately along with Annuity Payment)*	NHAI
13	23 October 2017	3.3.17	Implementation of GST Act, 2017 in NHAI—Exemption of application of GST on Annuity payments-reg. *Vide this circular, NHAI notified that no payment against GST shall be made by NHAI on Annuity Payments based on Notification No. 33/2017 issued by Ministry of Finance (Dept. of Revenue)*	NHAI
14	18 February 2018	NH-35014/3412017-H	Use of BIMS portal (www.bims.gov.in) for procurement of Highway Contracts on EPC/HAM/BOT Mode—reg. *Vide this circular, MoRTH has notified use of a single system called the Bidder Information Management System (BIMS) to be used for procurement of all national highway contracts and other works sponsored by the central government in India. BIMS is a comprehensive database comprising bidder-wise information covering basic details, civil work experience, cash accruals, net worth, annual turnover etc.*	MoRTH
15	25 April 2018	NH-35014/3412017-H	Re-Constitution of Committee of consultative mechanism for use of BIMS portal for procurement of Highways Contracts on EPC/HAM/BOT—reg *Vide this circular, MoRTH re-constituted a committee for consultive mechanism regarding use of BIMS portal.*	MoRTH

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
16	1 October 2018	3.1.24	Policy for release of Bank Guarantees submitted by the Concessionaires/Contractors towards Mobilization Advances in Hybrid Annuity (HAM)/EPC Contracts. *Vide this circular, NHAI clarified the mechanism for part release of Bank Guarantees (BGs) on recovery of part Mobilization Advance*	NHAI
17	31 December 2018	8.2.8	Delegation of power for declaration of financial closure date for the project under HAM/PPP mode-reg. *Vide this circular, NHAI clarified that Member (Finance) shall have full power of declaration of financial closure date for HAM based PPP projects.*	NHAI
18	29 March 2019	18.35	Regarding Revised delegation for award of projects on EPC and HAM Mode *Vide this circular, NHAI clarified that in case of HAM projects, if L1 bid is upto 5% above the updated bid price assessed by NHAI, Executive Committee is the Competent Authority to accept L1 bid and award the project.*	NHAI
19	29 July 2019	3.3.20	Standard Operating Procedure for HAM Concessionaire due to Change in Law on account of introduction of GST Act, 2017—reg. *Vide this circular, NHAI approved payment of GST on 40% bid price treating the same as construction support for HAM based PPP projects.*	NHAI
20	5 November 2019	9.2.29	Hybrid Annuity Model (HAM) Projects' Waiver of damages to the Concessionaires for delay in submission of the Performance Security BG or achieving the Financial Close for the cases where the Authority was not in a position to hand over RoW *Vide this circular, NHAI clarified that concessionaires will not be penalized for delay in those cases where there was a delay in handing over RoW by NHAI.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
21	9 November 2019	RO/MUM/NHDP-39/2015-16	Interest Bearing Working Capital Advance against unbilled executed work to mitigate the cash flow problems of HAM Concessionaire and EPC contractors and modification in Schedule-H of the EPC Contract. *Vide this circular, it was observed by MoRTH that certain road projects awarded on HAM basis were stalled/delayed due to cash flow problem faced by concessionaire since executed works did not qualify for milestone payments during construction as per terms of concession agreement. Hence, MoRTH notified that Interest bearing Working Capital Advance (IBWCA) will be extended against unbilled executed work, not qualifying for payment under milestone achievement-based payment conditions. Such advance @4% grant may be released at completion of every 10% of physical progress before achieving subsequent construction milestone as per concession agreement.*	MoRTH
22	19 November 2019	9.2.30	Interest Bearing Working Capital Advance against unbilled executed work to mitigate the cash flow problems of HAM Concessionaire and EPC contractors and modification in Schedule-H of the EPC Contract. *Vide this circular, NHAI made a minor change regarding disbursement process of IBWCA as notified by MoRTH. No other changes were made.*	NHAI
23	5 December 2019	3.2.12	Allowing securitization of future cash flows in Hybrid Annuity Projects in line with BOT (Toll) and BOT (Annuity) Projects *Vide this circular, the cash flow securitization was approved for HAM based road PPP projects by NHAI.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
24	6 March 2020	7.2.8	Inclusion of Utility Shifting works in the RFPs/Bids of Civil Work Contracts on Hybrid Annuity and EPC Modes. *Vide this circular, NHAI notified that the items of utility shifting will be included in the scope of work on concessionaire while inviting bids for HAM based PPP projects, to serve the twin objective of market/competitive discovery of rates and reduce delays in utility shifting works.*	NHAI
25	20 April 2021	RO/MUM/NHDP-39/2015-16	Interest Bearing Working Capital Advance against unbilled executed work to mitigate the cash flow problems of HAM Concessionaire & EPC contractors and modification in Schedule—H of the EPC Contract- Clarification on recovery schedule for mobilization advance and interest bearing working capital advance for HAM projects—reg. *Vide this circular, MoRTH clarified that the mobilization advance recovery shall be done during release of grants during construction period as per concession agreement, unless requested by concessionaire for recovery at time of release of IBWCA proportionately.*	MoRTH
26	27 May 2020	7.2.9	Inclusion of Utility Shifting works in the RFPs/Bids of Civil Work Contracts on Hybrid Annuity and EPC Modes. *Vide this circular, NHAI notified that the utility shifting works should also be incorporated in the RFPs/Bids of already approved HAM projects whose bids are not yet received.*	NHAI
27	10 June 2020	8.3.34	Guidelines for determination of Cost of Change of Scope (COS)/Reduction in Scope (RIS) due to Withdrawal of works/Alteration(Change/omission in existing item) in Works in Hybrid Annuity Mode (HAM) Projects- Applicable Schedule of Rates, Design Charges, Maintenance Charges regarding. *Vide this circular, NHAI clarified the provisions for COS/RIS in cases where the same has not been defined in concession agreements.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
28	12 June 2020	2.1.40	Delegation of Power to RO for signing for Supplementary Agreement in ongoing PPP/HAM/EPC/Item Rate Projects for adopting the procedure of Dispute Resolution Board. *Vide this circular, NHAI allocated delegation of power to regional officers for supplementary agreements due to restricted travel in view of COVID-19 situation.*	NHAI
29	9 July 2020	8.3.35	HAM Projects—SoP for removing from the scope of work the remaining site not provided to Concessionaire within the period of the Appointed Date plus 20% of construction period. *Vide this circular, NHAI clarified the provisions of change in scope and adjustment of relevant costs in those cases where 100% of project site was not handed over to Concessionaire within the period of the Appointed Date plus 20% of construction period.*	NHAI
30	14 August 2020	8.3.37	HAM Projects—SoP on Reduction in Scope of the Project Works in remaining sites not provided within the period of AD + 20% of CP *This circular was notified by NHAI in those specific cases where NHAI provided RoW after a period of AD+20% of CP, and the Concessionaire started work on those sites.*	NHAI
31	18 August 2020	2.1.41	Introduction of Dispute Resolution Board (DRB) in all ongoing and upcoming EPC/HAM/BOT Projects. *Vide this circular, NHAI notified the introduction of DRB through supplementary agreements for all road projects to ensure expeditious resolution of disputes in ongoing projects.*	NHAI
32	28 August 2020	2.1.42	Introduction of Dispute Resolution Board (DRB) in all ongoing and upcoming EPC/HAM/BOT Projects. *Notification to withdraw earlier NHAI circular no. 2.1.41 dated 18 August 2020*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
33	4 September 2020	2.1.43	Introduction of Dispute Resolution Board (DRB) in all ongoing and upcoming EPC/HAM/BOT Projects. *Re-notification for introduction of DRB by NHAI for all road projects with updated detailed clauses of the supplementary agreement.*	NHAI
34	13 October 2020	7.2.10	Inclusion of Utility Shifting works in the RFPs/Bids as part of Civil Construction under Hybrid Annuity and EPC Mode—Amendment in policy circular dated 06 March 2020—reg *Vide this circular, NHAI clarified that all utilities, not included in schedule B, shall be treated as change of scope whether overground or underground. It was also notified add the concessionaire is to be paid the cost of actual utility shifting work carried out at site as per the approved estimate of the utility owing agency in case the work is terminated prior to appointed date after signing of the construction agreement.*	NHAI
35	28 October 2020	NH-35014/25/2017	Relaxation in Technical and Financial Qualification for bidders of National Highways Project under Hybrid Annuity Mode (HAM) and Build, Operate, Transfer mode (BOT)—reg. *Vide this circular, MORTH notified changes in biding documents in respect of financial and technical capacity for HAM and BOT projects and general relaxation for tunnel and bridge projects related experience as applicable for HAM based road PPP mode in India.*	MoRTH

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
36	10 November 2020		Changes in the Model Concession Agreement (MCA) for NHs works under Hybrid Annuity Mode (HAM) Projects *Vide this circular, MoRTH introduced a series of changes to Model Concession Agreement (MCA) for PPP projects tendered in the roads sector in India under HAM. These changes were introduced in consultation with the industry experts; and are expected to give a boost to investor confidence and interest in implementation of HAM road projects in India. Based on these notified changes, the updated MCA document was also issued by the ministry.* *PART III of this book provides a detailed discussion on contractual aspects of the latest MCA document along with Numerical examples and competitions for the ease of reference and understanding of the readers.*	MoRTH
37	17 November 2020	18.58	Regarding replies being given by Technical Divisions as 'As per RFP' in response to the pre-bid queries in various contracts (BOT/HAM/EPC/TOT, etc.). *Vide this circular, NHAI clarified that for replies to pre-bid queries, answers cannot be given As per RFP and the provisions of bid documents to be explained to avoid litigation in future.*	NHAI
38	24 November 2020	11.21	Changes in Model Concession Agreement (MCA) of Hybrid Annuity Mode (HAM) Projects—reg. *NHAI notification with a copy of list of changes in HAM as notified by MoRTH on 10 November 2020*	NHAI
39	26 November 2020	8.4.21	Interest Rate Applicable for HAM Projects-Interest under clause 23.6.4. *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.34% for period of 01 October 2020 till 31 December 2021*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
40	2 December 2020	8.4.22	Clarification on calculation of Price Index Multiple in HAM Projects—reg. *Vide this circular, NHAI clarified the various scenarios for use of correct CPI (IW) as published for Centre as well as for different States in India.*	NHAI
41	2 December 2020	11.22	Amendment in Cl. 10.2.6 of Model Concession Agreement of HAM. *Very minor modification regarding use of word usufructuary in model concession agreement.*	NHAI
42	31 December 2020	8.3.39	Relaxation in the Change of Ownership clause in Hybrid Annuity Model (HAM) Projects after 6 months of completion—reg. *Vide this circular, MoRTH clarified that the developers of subsisting HAM contracts may be allowed to dilute their equity stake post 6 months from CoD, reducing it from a period of two years.*	NHAI
43	5 January 2021	8.4.23	Interest Rate Applicable for HAM Projects-Interest under clause 23.6.4 *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.28% for period of 01 January 2021 till 31 March 2021*	NHAI
44	15 January 2021	7.2.12	Inclusion of Utility Shifting works in the RFPs/Bids as part of Civil Construction under Hybrid Annuity and EPC Mode—Amendment in policy circular dated 13 October 2020—reg. *Vide this circular, NHAI notified the updated and amended Annexure-1 to Schedule B for the MCA of HAM based road PPP projects*	NHAI
45	1 April 2021	18.68	Clarification regarding applicability of Atmanirbhar Bharat relief upto 30 June 2021 for Contractors/Developers of Road Sector for Schedule-G in HAM projects. *Vide this circular, NHAI notified relaxation of Schedule-G in HAM contracts under Atmanirbhar Bharat scheme.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
46	7 April 2021	8.4.27	Interest Rate applicable for HAM Projects—Interest under Article 23.06.4—reg. *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.26% for period of 01 April 2021 till 30 June 2021*	NHAI
47	16 June 2021	11.29	Regarding amendment in the Standard Request for Proposal (RFP) and Model Concession Agreement (MCA) for National Highways and Centrally Sponsored Road works proposed to be implemented on HAM mode *Vide this circular, NHAI notified that Contract Price for bidding purposes shall be exclusive of GST instead of considering the Contract Price including base rate as well as applicable taxes including GST. Accordingly, this circular provides the list of changes in RFP and MCA for HAM PPP projects.*	NHAI
48	2 July 2021	8.4.28	Interest Rate applicable for HAM Projects—Interest under Article 23.6.4—reg. *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.23% for period of 01 July 2021 till 30 September 2021*	NHAI
49	1 September 2021	3.3.21	Clarification regarding applicability of GST on the activity of construction of road where considerations are received in deferred payment HAM (Annuity)—reg. *Vide this circular, NHAI and MoRTH provided detailed clarification regarding applicability of GST on HAM based PPP projects tendered over different periods of time, so as to clarify the key cash flows on which such tax will be applicable.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
50	6 October 2021	8.4.29	Interest Rate applicable for HAM Projects—Interest under Article 23.6.4—reg. *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.23% for period of 01 October 2021 till 31 December 21*	NHAI
51	14 October 2021	8.4.30	Interest Rate applicable for HAM Projects- Interest under Article 23.6.4 *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.21% for period of 01 October 2021 till 31 December 2021*	NHAI
52	7 December 2021	11.34	Amendment in the Standard Request for Proposal (RFP) and Model Concession Agreement for National Highways and other centrally sponsored road projects proposed to be implemented on Hybrid Annuity Model (HAM) mode of contract to make procurement compliant of Public Procurement (Preference to Make in India) Order, 2017. *Vide this circular, NHAI made multiple changes in the RFP document, primarily around the technical eligibility criteria of the bidders for HAM projects, including the local content requirement Class-I and Class-II suppliers and compliance with GoI order for all public procurement projects with preference to Make in India.*	NHAI
53	10 January 2022	8.4.31	Interest Rate applicable for HAM Projects- Interest under Article 23.6.4 *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.20% for period of 1 January 22 till 31 March 22*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
54	17 January 2022	8.3.43	Expenditure to be taken into account while considering a proposal for releasing Performance Security in reference to Article 9.3 of Model Concession Agreement (MCA) of Hybrid Annuity Mode (HAM) project *Vide this circular, NHAI linked the process of release of performance security to the breakup of expenditure incurred by the developer. Specific types/categories of expenditure to be taken into consideration to meet RFP requirements for release of performance security.*	NHAI
55	23 May 2022	E-134863	Changes in the model RFP and MCA of HAM project to allow Lowest quoted Bid Project Cost (BPC) as the basis for awarding HAM Project and O&M cost to be fixed as in EPC projects—reg. *Vide this circular, MoRTH proposed significant changes in the standard bid documents for HAM projects, around the bidding criteria and the payment of O&M costs during the operation period. The bids are to be awarded on lowest cost basis, instead of NPV of bid project cost and O&M costs. A detailed impact of these changes has been elaborated, with numerical examples, in PART III of the book.*	MoRTH
56	8 April 2022	8.4.32	Interest Rate applicable for HAM Projects- Interest under Article 23.6.4 *Vide this circular, NHAI declared the average 1 year MCLR of top 5 scheduled commercial banks as 7.20% for period of 1 April 22 till 30 June 2022*	NHAI
57	3 June 2022	9.1.13	List of Provisionally Qualified Bidders for EPC, HAM and BOT (Toll) Projects to avoid repetitive examination of bidding documents by Technical Divisions—reg. *Vide this circular, NHAI paved the way for faster process of bid evaluation. A list of provisionally qualified bidders have been notified (valid till 30 June 2022), and the technical capability of such bidders is not required to be evaluated for standard HAM projects.*	NHAI

(continued)

Table 2.1 (continued)

#	Date	Circular No.	Title, Key contents	Issued by
58	17 June 2022	11.39	Changes in the model RFP and MCA of HAM project to allow Lowest quoted Bid Project Cost (BPC) as the basis for awarding HAM Project and O&M cost to be fixed as in EPC projects—reg. *Vide this circular, NHAI confirmed the changes that were proposed by MoRTH in My'22; and exact language of the standard bidding documents is notified.*	NHAI

References

1. Ministry of Road Transport and Highways (MoRTH), List of circulars. https://morth.nic.in/OMs-Circular-Other-Notification
2. National Highways Authority of India (NAHI), List of circulars. http://library.nhai.org/. Last Accessed on June 30, 2022.

Part II

Hybrid Annuity Model (HAM) for Roads Sector, India

Contractual Structure and Risk Allocation Framework

3

This chapter reviews the contractual structure between different stakeholders under the Hybrid Annuity Model (HAM) along with the consequent risk allocation framework during the construction and operation phase of the project proposed as part of Model Concession Agreement (MCA) for HAM projects in roads sector in the country.

This chapter also lists down the various obligations of the concessionaire/private sector participant and the government authority as well as the key advantages from the perspective of both parties while delivering such HAM based PPP projects. The chapter further provides a profile of key players active in development of HAM based PPP road projects in India.

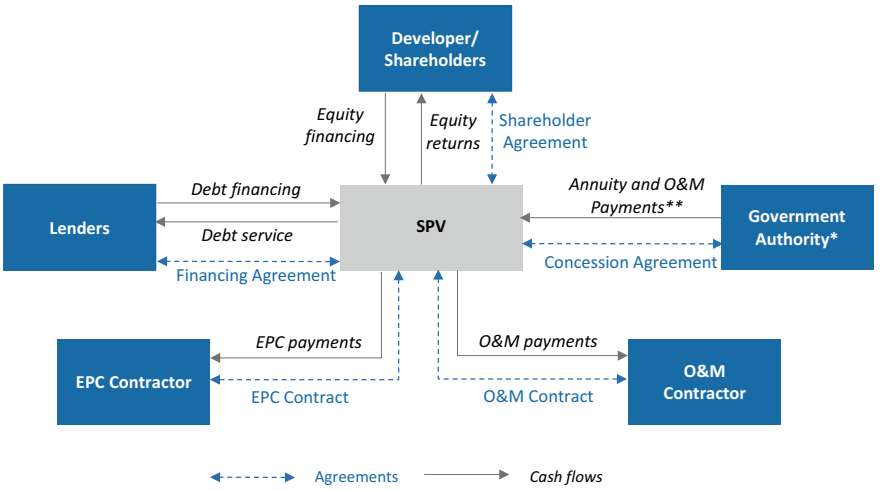
3.1 Contractual Structure

A key requirement for delivery of Hybrid Annuity Model (HAM) based PPP projects is creation of a Special Purpose/Project Vehicle (SPV). An SPV is a legal entity that undertakes the delivery of a project and all contractual agreements between the various parties are negotiated between themselves and the SPV.

SPV is also preferred mode of PPP project implementation and limited or non-recourse situations where the lenders rely on the project's cash flow and security over its asset as the only means to repay debts.

The below diagram provides the contractual structure in a typical HAM PPP project. The below structure is prepared as per the Model concession agreement (MCA) issued by Government of India. As mentioned earlier, HAM based road PPP projects are implemented through a SPV structure wherein the roles, responsibilities and liabilities of the project are ring-fenced from the SPV owner/developer (Fig. 3.1).

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_3



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

**Annuity Payments consist of

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

Fig. 3.1 Contractual Structure—HAM based PPP road project

Box: Special Purpose Vehicle (SPV)

A SPV is a company created specifically to enter into the respective PPP contract. The successful bidder (usually a consortium of companies) will constitute the SPV after being awarded the contract, but before signing it. The consortium members will subscribe for pre-agreed percentages of the shares in the company (as committed at bid submission). It will be the SPV that signs the contract with the procuring authority. In some countries it is not compulsory for a consortium to create an SPV to enter into the contract.

Creating a SPV brings the following benefits [1]:

- An SPV is a usual requirement by lenders in order to provide finance through project finance techniques, as this allows for better control of the credit risks. Project finance techniques allow equity investors to limit their exposure to risk, and they provide high leverage without the need for investors to (generally) provide corporate guarantees. Furthermore, the finance is commonly regarded as off balance sheet from the holding perspective of the equity investors
- The public party also benefits from the existence of a SPV, as it means that the public party's partner will only be dedicated to the specific PPP

contract. It is common for both the public party (through the Request for Proposals and the contract) and lenders to prohibit the SPV from developing other projects so that its only object is the delivery of the PPP works and services.

Source PPP Certification Program Guide, APMG International

Based on the contractual structure for HAM PPP project depicted above, this section describes the detailed steps of the process undertaken during the project lifecycle.

1. ***The winning bidder/consortium/concessionaire constitutes the SPV***

The SPV will sign the concession agreement with the government authority (also referred to as **Agreement Date**). By signing of the concession agreement, the concessionaire and government authority assume the obligations regarding the implementation of the project as summarized in Table 3.1.

Table 3.1 Obligations of Concessionaire and Government Authority—HAM PPP project

Stakeholder	Obligations
Concessionaire	• Design, engineering, procurement, construction, operation and maintenance of the project • Procure financing for the remaining portion of the construction cost besides construction annuity (60% as per model concession agreement) through a mix of debt and equity • Comply with all applicable laws and permits for the project • Procure Intellectual Property (IP) rights, technology know-how incorporated in the project, if any • Provide facilitation support to Authority to procure land, environmental and forest clearances, if requested by the Authority • Transfer the project to Authority upon end on concession period (or earlier in case of termination of the project agreement)
Government Authority	• Procure land and Right of Way (RoW) for the project site. As per clause 10 of the MCA, 80% of the project site should be made available before declaration of appointed date i.e. the start of construction date; with the remaining site to be procured within 90 days of appointed date • Provide assistance to Concessionaire for procuring Applicable Permits, necessary infrastructure facilities and utilities (like water, electricity) and government approvals for the project • Cooperate with Concessionaire in operation and maintenance of the project, as required by the provisions of the concession agreement • Undertake, at its own cost, rehabilitation and resettlement (R&R) of persons affected by construction of the project

2. ***The SPV executes financial agreements and implements downstream project contracts***

After the signing of concession agreement, the SPV will enter into financing agreements i.e., the loan agreements with lenders (also referred to as **financial close**). As per the model concession agreement, the financial close of a HAM based road PPP project needs to be achieved within 150 days from the date of concession agreement.

Post financial close, the SPV will also enter into downstream contracts:

- Engineering, Procurement, Construction (EPC) contract with construction or EPC contractor, and
- Operation and maintenance (O&M) contract with the O&M contractor.

3. ***Execution of construction work***

The construction work is executed post project site is made available to the private sector (**Appointed Date**) for a HAM based road PPP project. During the construction. Government authority would also disburse 40% of the adjusted bid project cost to the concessionaire upon achievement of predefined construction milestones or payment milestones as per the terms of the concession agreement. Please refer to Part III off the book for detailed explanation (along with the numerical computations and examples) for adjusted bid project cost for a typical HAM based road PPP project.

It is pertinent to mention here that all the cash flows for any project are deposited or disposed from an escrow account that needs to be opened by the SPV. All the proceeds of debt and equity contributions are dispersed into that escrow account, and the SPV pays the EPC contractor and the O&M contractor from the same escrow account.

4. ***Project Commercial Operations***

Once the construction is completed, the project is issued a completion certificate post inspection by the independent engineer appointed by the government authority. In a HAM contract, once the operations commence, the SPV would start receiving the annuity payments for remaining 60% of adjusted bit project cost or completion cost, O&M payments as per the quote submitted by the concessionaire, and interest payment on the reducing balance of annuity. The collected annuity payments will be used to pay taxes, O&M costs, debt services and distributions to shareholders.

In a HAM project, the O&M fees to be paid to O&M contractor is a fixed semi-annual amount which is a lump-sum amount including all O&M activities; and hence, the O&M performance risk is typically transferred to the O&M contractor.

5. ***Debt repayment and equity distributions***

The debt service (principal repayment and interest profile) is defined in the financing agreements In a typical HAM project, such repayment profile is linked with the semiannual annuity payments to be received from the government agency to avoid any issues in the cash flow during the operations phase.

Financing agreements may include additional restrictions on distributions to shareholders till the debt is fully repaid. In most cases, the majority of the return to shareholders in form of dividends will only come during the later stage of the concession period.

6. ***Divestment of Asset***

Upon contract expiry (or earlier in case of a project termination), the road asset will be returned to the authority. This hand-back of the road asset to the government agency is also referred to as divestment of rights, title and interest of concessionaire from the project. Such divestment is complete once the vesting certificate is issued by the government agency.

7. ***Defects liability Period***

The concessionaires shall be responsible for all defects and deficiencies in the project for a defect liability period (typically 120 days after termination), and it shall have the obligation to repair or rectify, at its own cost, all such defects and deficiencies. In case such defects are repaired by the authority, costs incurred shall be reimbursed by the concessionaire. In the event the concessionaire does not reimburse such costs, the authority shall be entitled to recover the same from the funds retained in the escrow account all from the performance guarantee provided by the concessionaire.

3.2 Risk Allocation Framework

Optimal risk allocation is one of the key Value for Money (VfM) driver in any PPP delivery model. An optimal risk allocation in a concession agreement or under a PPP model allocates the various project risks (across the construction and operations lifecycle) to either the government sector or the private sector, based on the capability of best managing that risk. Such optimal risk allocation ensures highest VfM, bankability and a successful implementation of the PPP project.

Given below is the risk allocation of HAM PPP model structure as per MCA for roads sector during construction and operation phase (Table 3.2).

Table 3.2 Risk Allocation Framework—HAM PPP project

Risk	Allocation	Remarks
Project Design	Private	• Private sector to be responsible for design and procurement of relevant Intellectual property (IP), technical know-how as applicable
Project Site and applicable permits	Public	• Availability of Project site and right of way for the 80% length of project before appointed date, with the remaining land to be provided within 90 days of the appointed date as per the concession agreement • Government authority to procure relevant permits and undertake resettlement and rehabilitation (R&R) works, as required.
Project finance	Shared	• Government authority to provide project finance support during construction period for an amount of 40% of the adjusted bid project cost upon achievement of predefined construction milestones as per the concession agreement. • Given that bank debt can be arranged as well for the remaining 60% of the bid project cost or the construction cost; and assuming a debt: equity (D:E) ratio of 75:25, the equity commitment is c.15% of the total project cost. • There is a further provision an advance payment of maximum 10% of Bid Project Cost to Concessionaire (Mobilization Advance) in 2 equal installments. • Rate of interest on Mobilization Advance shall be equal to the average of 1 year MCLR of top five scheduled commercial banks[1] plus 1.25%, compounded annually. • Recently, there is also a provision of Interest bearing working capital advance (IBWCA) that will be extended against unbilled executed work, not qualifying for payment under milestone achievement-based payment conditions.

(continued)

[1] *The Authority shall declare the list of top five scheduled commercial banks on 1st September every calendar based on the balance sheet size as declared in the annual reports. The one year MCLR are of the top five (5) scheduled commercial banks shall be taken at the start of every quarter.*

Table 3.2 (continued)

Risk	Allocation	Remarks
Escalation in Project Costs	Public	• Project Capital Cost is inflation indexed (through a Price Index Multiple/PIM, which is the weighted average of Wholesale Price Index (WPI) and Consumer Price Index (CPI) (IW) in the ratio of 70:30
Revenue/Demand Risk	Public	• During operational phase, responsibility of toll collection is with government authority and hence, the demand risk is fully borne by the public sector/government authority • Cash flow to concessionaire is assured in the form of annuity payments on semi-annual basis covering 60% of the bid project cost; and interest shall be due and payable on the reducing balance of completion costs at an interest rate equal to average of 1 year MCLR of top five (5) scheduled commercial banks plus 1.25%
O&M Risk	Private	• Concessionaire is responsible for the operation and maintenance of the project. • The concessionaire receives semi-annual inflation indexed O&M payments (as quoted during the bid stage). • The inflation index used of indexation of O&M payment is Price index multiple (PIM)
Authority/Off-taker Risk	Public	• For national highways, the government authority is National Highways Authority of India (NHAI) which is rated CARE AAA/Stable; and is a strong off-taker. • NHAI has done multiple public private partnership road concessions in past, and has a strong track-record of timely payments • For state highways, the government authority may vary depending on the specific case. However, these projects are supported by toll collection, so off-taker risk is minimal.

Based on the contractual structure and risk allocation framework for the HAM based road PPP projects, listed below are key advantages of this PPP model from perspectives of government authority and the concessionaire/private sector (Table 3.3).

Table 3.3 Key Advantages—HAM PPP project

Stakeholder	Remarks
Government Authority	• Government keeps the deferred payment capital expenditure of up to 60% as off balance sheet in form of annuity payments. • Wider participation from many erstwhile engineering-procurement-construction (EPC) players in HAM based road PPP projects since there is much lower upfront equity investment needed and hence, higher value of money to government due to increased competition. • Timely project completion and on budget since the private sector has an incentive to complete and start annuity revenues and contractual incentives. • Since the HAM contractor bears a risk for a period of 15 years after project completion, the asset design and construction is expected to be of higher quality compared to EPC contracts. • Such higher asset quality of the road subsequently translates as higher service levels for road users.
Private Sector	• Lower equity requirements from the Sponsor since 40% of the project cost is financed by government authority during the construction period itself. Assuming a D:E ratio of 75:25 for the remaining funding to be arranged, the effective equity contribution by private sector/concessionaire is limited to c.15% of total project cost. • Provision for mobilization advances to the concessionaire at a competitive rate equal to the average of 1 year MCLR of top five scheduled commercial banks[2] plus 1.25%. • Provision of Interest bearing working capital advance (IBWCA) against unbilled executed work, not qualifying for payment under milestone achievement-based payment conditions. • Higher right of way availability for the project since 80% land is cleared before appointed date as per the terms of the concession agreement. • 60% of the project cost is paid as annuity payments during construction period, along with interest at a rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25%; and thus, providing significant cash flow support during the operation phase. • Inflation-linked adjustments for O&M payments during the operation phase; and thus, minimal risk of cash-flow mismatch due to inflation or external factors. • De-linking of the construction and operations period. Due to this de-linking, the timeline for annuity payments to be made to the concessionaire is independent of the construction period for the project.

[2] *The Authority shall declare the list of top five scheduled commercial banks on 1st September every calendar based on the balance sheet size as declared in the annual reports. The one year MCL are of the top five scheduled commercial banks shall be taken at the start of every quarter.*

Reference

1. PPP Certification Program Guide, APMG International. https://ppp-certification.com/ppp-certification-guide/about-ppp-guide

Success of HAM in the Indian Context

4

More than 250 national highway PPP projects have been tendered under the Hybrid Annuity Model (HAM) in the last six years between 2016 and 2022. Further, this particular PPP model has been widely accepted by the private sector and has seen participation from more than 40 players, a majority of them being erstwhile Engineering, Procurement and Construction (EPC) contractors. These statistics go to show that the model has allowed and enabled new private sector players to enter into infrastructure project delivery, a hallmark of success for any PPP model in the country since it promotes competition and efficiency in delivery of public services.

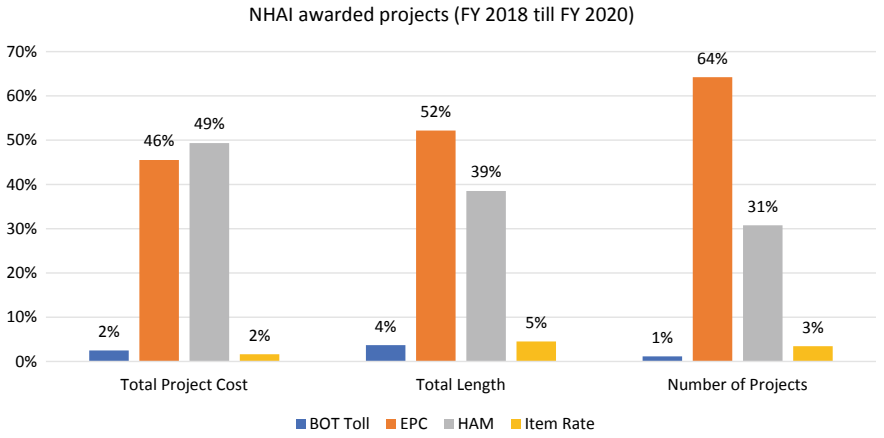
This chapter gives a quantitative review of projects awarded under different PPP modes in the road sector by National Highways Authority of India (NHAI) in recent years and goes to show how HAM has emerged as a preferred PPP mode of private sector participation in the country for high-value projects.

The chapter further provides a complete list of all the national highway projects tendered under HAM PPP model in the country with details such project name, key technical details, contractor name, issue of Letter of Award (LoA) date etc. Such compilation will be extremely valuable for readers to gain an understanding of evolving big strategies by the private sector players in the country.

4.1 HAM as Preferred PPP Model

The Cabinet Committee on Economic Affairs (CCEA) approved the implementation of an umbrella programme for the National Highways—Bharatmala Pariyojana Phase-I in its meeting held on 24th October 17, for construction/upgradation of National Highways of 34,800 km length over a period of 5 years (2017–18 to 2021–22) at an estimated outlay of INR 5,35,000 Cr.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_4



Source: Author research, publicly available information

Fig. 4.1 NHAI awarded road projects from FY 2018 till FY 2020

A majority of these projects were envisaged to be awarded through EPC and HAM models due to lackluster response to BOT model by the private sector.

Figure 4.1 provides a summary of distribution of road projects awarded by NHAI in FY 2020, FY 2019 and FY 2018.[1]

As can be seen from Fig. 4.1,

- More than 60% of projects awarded to private sector were through EPC model
- **The total project cost of HAM projects is higher than EPC model implying that HAM model has been widely accepted by NHAI and private sector for high-value road projects**
- Award of road projects via BOT Toll model is negligible (less than 5% across all parameters) signaling that the model may not be relevant soon for the roads sector in the country.

4.2 HAM Projects Awarded—A Quantitative Analysis

This section provides a quantitative analysis of the HAM PPP projects till date (as of March 22) in the roads sector since it was notified in 2016. As per publicly available information, NHAI has already awarded more than 250 projects

[1] *The financial year in India runs from 1 April of any calendar year to 31 March next year.*

Table 4.1 Summary status of HAM projects tendered till date

Financial Year	Number of Projects	Length (km)	Awarded Cost (INR Cr)
2016	28	1,656	25,058
2017	27	1,783	39,189
2018	58	3,079	71,095
2019	19	804	17,960
2020	54	1,926	58,652
2021	63	1,721	48,541
2022	9	214	13,762
Grand Total	**258**	**11,183**	**274,258**

Source Author research, publicly available information

[1] under HAM PPP model in a span of 6 years.[2] Out of the total projects tendered and awarded till date, c.7% of the projects were terminated with possible reasons being delays in financial close by concessionaire or land acquisition by government authority.

A summary of HAM projects tendered in recent years (as of March 22) is provided in Table 4.1.

The overall adoption of HAM PPP model has seen a variation across various states in India which often depends on the level of economic activity and traffic demand.

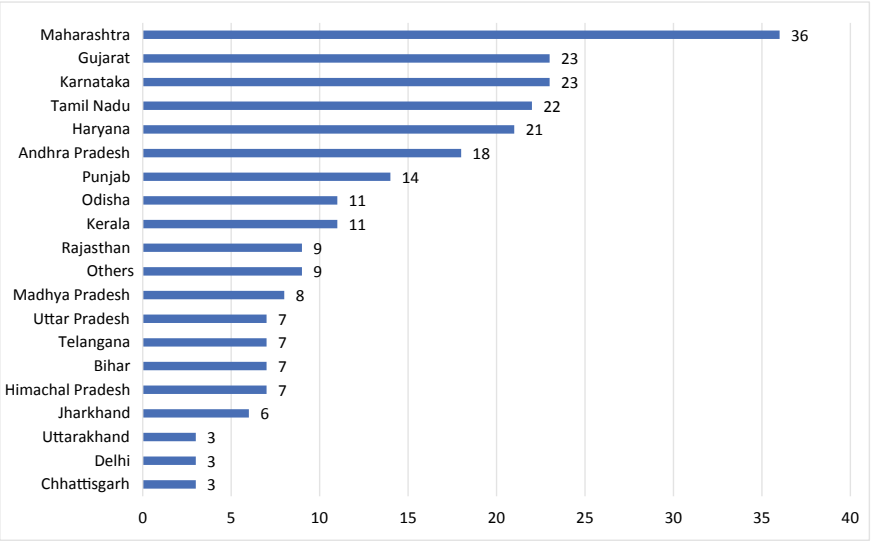
Five states (Maharashtra, Uttar Pradesh, Gujarat, Tamil Nadu and Karnataka) account for around 60% of the total number of HAM PPP projects awarded till date as can be seen from Fig. 4.2.

Since launch of HAM PPP model for road projects, certain players have won multiple projects partly due to their strong EPC capabilities and low equity requirements compared to traditional BOT-Toll projects. There has been a notable increase in the number of new developers bidding for HAM based road PPP projects in India.

A brief profile of key players is provided who have won multiple HAM road projects in last 6 years since its launch.[3] Please note that the list of key developers has been selected based on the original awardee of a HAM PPP project, and not the current equity holder which may have changed due to acquisitions or sale of such projects.

[2] *Apart from NHAI, HAM PPP projects have also been awarded by various state nodal agencies for state highways, however, the authors have summarized the status of NHAI awarded projects for national highways to elaborate upon the success of the HAM PPP model.*

[3] *The data provided in this section has been sourced from multiple sources and is based on analysis of such public information and may further change over time.*



Source: Author research, publicly available information

Fig. 4.2 Number of HAM projects—state-wise distribution

4.3 Key Players/Stakeholders

Given below is a list of major developers, who have been awarded HAM based road PPP projects in the past 6 years. Further, these players have also been provisionally qualified by NHAI (as on June 22) for award of HAM projects based on their financial bid submissions only, and no technical capability assessment is needed.[4] The below list also provides the threshold of project construction/EPC cost for each developer (Table 4.2).

4.4 HAM Projects Awarded—List of Projects

Table 4.3 provides a list of HAM based road PPP projects (as of March 22) as awarded by NHAI in India till date [1, 2]:

[4] *Notification 9.1.13 issued by NHAI dated 3.06.2022. List of Provisionally Qualified Bidders for EPC, HAM and BOT (Toll) Projects to avoid repetitive examination of bidding documents by Technical Divisions - reg.*

Table 4.2 List of Key Players for development of HAM based road PPP projects in India

S. No.	Name of the Bidder	Authority's EPC (INR Cr)
1	Anish lnfracon India Pvt. Ltd	578.22
2	NG PROJECTS LIMITED	625.96
3	Varindera Constructions Limited	637.94
4	ABCI Infrastructures Pvt Ltd	637.94
5	RR CONSTRUCTIONS AND INFRASTRUCTURE INDIA PVT. LTD	779.82
6	RITHWIK PROJECTS PRIVATE LIMITED	779.82
7	Prakash Asphaltings & Toll Highways (India) Ltd.	781.42
8	Shreeji Infrastructure India Pvt. Ltd.	781.42
9	Barbrik Project Limited	859.33
10	Kalthia Engineering and Construction Limited	880.08
11	KPC Projects Limited	911.47
12	BVSR Constructions Pvt. Ltd.	911.47
13	Raj Shyama Constructions Pvt Ltd	922.53
14	Raj Corporation Ltd	922.53
15	Ram Kripal Singh Construction Pvt. Ltd.	1002.07
16	Ravi lnfrabuild Projects Private Limited	1020.45
17	Roadway Solutions India Infra Ltd.	1036.16
18	NKG Infrastructure Limited	1036.16
19	MKC Infrastructure Ltd.	1049.88
20	VRC Construction (I) Pvt Ltd	1242.79
21	Krishna Constellation Private Limited	1242.79
22	KCC Buildcon Private Limited	1313.82
23	Vishwa Samudra Engineering Private Limited	1602.95
24	IRB Infrastructure Developers Limited	1602.95
25	Raj Path lnfracon Pvt Ltd	1606.85
26	Ramalingam Construction Company Private Limited	1606.85
27	M G Contractors Pvt Ltd	1608.23
28	Gawar Construction Limited	1608.23
29	IRCON International Limited	1685.46
30	RKC lnfrabuilt Private Limited	1690.03
31	KMV Projects Limited	1690.03
32	Adani Road Transport Limited	1690.03
33	SUSHEE INFRA & MINING LIMITED	1690.03
34	DP Jain and Company Infrastructure Private Limited	1690.14
35	Ceigall India Limited	1690.14
36	APCO lnfratech Pvt Ltd	1690.14
37	G R lnfraprojects Limited	1690.14

(continued)

Table 4.2 (continued)

S. No.	Name of the Bidder	Authority's EPC (INR Cr)
38	Shankaranarayana Construction Private Limited	1769.02
39	Patel Infrastructure Limited	1769.02
40	Dinesh Chandra R. Agrawal lnfracon Pvt. Ltd.	1769.02
41	H G Infra Engineering Limited	1769.02
42	Montecarlo Limited	1769.02
43	KNR Constructions Limited	1769.02
44	Oriental Structural Engineers Private Limited	1769.02
45	PNC lnfratech Limited	1769.02
46	Ashoka Buildcon Limited	1769.02
47	Dilip Buildcon Limited	1769.02
48	NCC Limited	1769.02
49	Megha Engineering & Infrastructure Limited	1769.02

Source Author research, publicly available information

Table 4.3 List of HAM projects awarded by NHAI (as of March 22)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
1	Delhi	Package-III- Delhi-Meerut Expressway- 6-laning of NH-24 from existing Km. 27.740 to existing Km. 49.346 (Dasna to Hapur)	22.27	APCO CHETAK EXPRESSWAY PVT. LTD.	1057.6	06 January 16
2	Uttar Pradesh	Shakarpur(Km 8.800) to Akbarpur (Km 73.512) of NH-235 in Uttar Pradesh (Meerut - Bulandshahar)	61.19	APCO Infratech Pvt. Ltd.	868.77	11 January 16
3	Delhi	Package-I- 6 laning of Delhi-Meerut Expressway and 8 laning of NH-24 from NH-24-Ring Road T-Junction to U.P. Gate (Km. 0.000 to Km. 8.360)	8.72	Welspun Delhi Meerut Expressway Private Limited	841.5	04 March 16
4	Uttarakhand	Chutmalpur Ganeshpur section and Roorkee Chutmalpur Gagalheri section	53.3	MBL (CGRG) Road Limited	942	30 March 16
5	Maharashtra	4 Lane Stand Alone Ring Road/Bypasses for Nagpur City, Package - I from Km 0.500 to Km 34.000. (Total Length - 33.500 Km) in the state of Maharashtra	33.5	MEP infrastructure Developer Ltd. & San Jose India Infrastructure and Construction Pvt. Ltd.	531	31 March 16

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
6	Maharashtra	Ring road/Bypasses for Nagpur city, Package-2 from km 34.000 to km 62.035 (Total length 28.035 km) in the state of Maharashtra	28.03	MEP infrastructure Developer Ltd. & San Jose India Infrastructure and Construction Pvt. Ltd.	639	31 March 16
7	Uttar Pradesh	Gagalheri-Saharanpur-Yamunanagar (UP/Haryana Border) Section of NH-73	51.45	MBL Infrastructure Ltd.	1184	31 March 16
8	Uttarakhand	Rampur - Rudrapur Section from km. 0.000 to km. 43.446 [Rampur Kathgodam (Package-1)]	43.45	Sadbhav Engineering Pvt. Ltd.	738	31 March 16
9	Uttarakhand	Rudrapur Kathgodam Section from km. 43.446 to km. 93.226 of Rampur Kathgodam (Package-2)	49.78	Sadbhav Engineering Pvt. Ltd.	738	31 March 16
10	Punjab	Laddowal Bypass (Km. 0.000) to (Km. 17.041) Linking with NH-95 with NH-1 Via Laddowal Seed Farm of NH-95 in Punjab	17.04	Eagle Infra Pvt. Ltd.	392	18 May 16
11	Gujarat	Bhavnagar - Talaja (Package-I)	48.04	Sadbhav Engineering Pvt. Ltd.	819	26 May 16
12	Gujarat	Talaja - Mahuva (Package-II)	45.46	MEP infrastructure Developer Ltd. & San Jose India Infrastructure and Construction Pvt. Ltd.	643.05	26 May 16
13	Gujarat	Kagvadar - Una (Package-IV)	40.98	Agroh Infrastructre & Developer Pvt. Ltd.	555	26 May 16
14	Gujarat	Four Laning of Una to Kodinar from km. 180.478 to km. 221.610 (Package-V)	40.95	Sadbhav Engineering Pvt. Ltd.	623	26 May 16
15	Rajasthan	Six lane of Greenfield proposed Udaipur Bypass (Connection between NH-76 at exiting Km 118-500 at Debari to NH-8 km 287-400 at kaya village) Udaipur Bypass (Package-IV) (Terminated)	23.883	M/s MBL (Udaipur Bypass) Road Limited	779	20 June 16
16	Gujarat	Mahuva to Kagvadar (Package III)	40.02	MEP infrastructure Developer Ltd. & San Jose India Infrastructure and Construction Pvt. Ltd.	604.68	25 June 16

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
17	Rajasthan	Salasar (Km 151.141) to Nagaur (Km 270.735) of NH-65 in Rajasthan	120	Dinesh Chandra R Agarwal Infracon Pvt Ltd	480	30 June 16
18	Gujarat	Kodinar - Veraval (Package VI) from km. 221.610 to km. 263.00 of NH-8E & km. 120.900 to km. 121.150 of NH-8D	41.75	Agroh Infrastructre & Developer Pvt. Ltd.	670	26 July 16
19	Rajasthan	Dausa - Lalsot - Kothun section of NH11 A Extn. (Ch. 0.000 to Ch. 83.453)	83.45	PNC Rajasthan Highways Pvt. Ltd.	881	28 July 16
20	Himachal Pradesh	4L of Shimla Bypass (Kaithlighat (Km 129.050) to Dhalli (Km 156.507) of Old NH-22	27.46	Shiv Valley Highways Private Limited	1480	08 August 16
21	Punjab	Kharar Km. 10.185 (Design Chainage) to Samrala Chowk, Ludhiana Km 86.199 (Design Chainage) In the State Of Punjab	76.01	Ashoka Buildcon Limited	1600	09 August 16
22	Uttar Pradesh	Lucknow (11.500) to Sultanpur (138.925) of NH-56 in Uttar Pradesh	127.43	DBL Lucknow-Sultanpur Highways Limited	2016	09 August 16
23	Punjab	4L of Phagwara - Rupnagar from km. 0.00 to km. 80.82 of NH-344A	80.82	GR Infraprojects Ltd	1367	22 August 16
24	Karnataka	BRT Tiger Reserve Boundary (Km.287.500) to Bangalore Section (Km.458.420) of NH-209 in Karnataka	170.92	Sadbhav Infrastructure Projects Ltd.	1008	26 September 16
25	Odisha	Binjhabahal - Telebani from km. 414.000 to km. 491.71	78.32	Oriental Structural Engineers Pvt. Ltd.	1161.4	13 October 16
26	Maharashtra	Tarsod - Fagne section of NH-6	87.3	MBL Infrastructure Ltd, JV with Agroh Infrastructure Developer Pvt.	1021	04 November 16
27	Maharashtra	4L of Chikhli - Tarsod section of NH-6 from km 360.00 - km 422.700	62.7	Vishwaraj Environmental Pvt. Ltd.	1048.1	04 November 16
28	Gujarat	Gadu - Porbandar (Package VII)	91.67	Kalthia Engineering & Construction Ltd.	370	15 December 16
29	Maharashtra	Four Laning of Tuljapur to Ausa section (including Tuljapur Bypass of 11.593 km.) of NH-361 from Km 0.000 to Km 55.835	67.43	Dilip Buildcon Ltd.	911.07	17 February 17

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
30	Maharashtra	Bodhre - Dhule (Terminated)	67.23	Sunil Hi - Tech Engineers Ltd - Varaha Infra Ltd.	982	02 March 17
31	Andhra Pradesh	Ranasthalam (Km.634.000) to Anandapuram (Km.681.000) of NH-16 in the State of Andhra Pradesh	47	Ashoka Buildcon Limited	1187.1	20 March 17
32	Karnataka	Six laning of Haveri (Km 340) to Hubli (Km 403.400) section of NH4 in Karnataka	63.4	Montecarlo Ltd.	1200	21 March 17
33	Delhi	Package-II- 6 laning of Delhi-Meerut Expressway and 8 laning of NH-24 from existing Km. 8.36 to existing Km. 27.74 (Delhi-UP Border to Dasna)	19.28	APCO CHETAK ULTRAWAY PVT. LTD.	1989	23 March 17
34	Madhya Pradesh	Jhansi-Khajuraho from Km. 76.3 to Km. 161.7 near Bamitha Town	85.4	PNC Infratech Limited	1310	28 March 17
35	Maharashtra	4 laning of Waranga - Mahagaon from km 253.700 - km 320.580	66.88	Sadbhav Vidharbh Highways Project Ltd.	1071	28 March 17
36	Maharashtra	Four Laning of Wardha - Butibori of NH-361 (Pkg-IV) from km. 465.50 to km. 524.69	59.19	Dilip Buildcon Ltd.	1065.51	28 March 17
37	Maharashtra	Four Laning of Yavatmal to Wardha (Pkg-III) of NH-361 from Km 400.575 to Km 465.500	64.93	Dilip Buildcon Ltd.	1043.28	28 March 17
38	Maharashtra	Four Laning of Mahagaon to Yavatmal (Pkg-II) of NH-361 from km. 320.580 to km. 400.575	80.19	Dilip Buildcon Ltd.	1160.64	28 March 17
39	Karnataka	Davanagere - Haveri of NH-48 (Old NH-4) from km. 260.00 to km. 338.923	78.92	IRCON International Limited	1177	29 March 17
40	Odisha	Singhara - Binjhabahal from km. 310.806 to km. 414.982	104.17	Montecarlo Limited	1420	29 March 17
41	Uttar Pradesh	Six Laning of Handia to Varanasi Section from Km. 713.146 to Km. 785.544	72.4	G R Infraprojects Limited	2447	29 March 17
42	Karnataka	Chitradurga - Davanagere including Chitradurga bypass of NH-48 (Old NH-4)	73	PNC Infratech Limited	1434	31 March 17
43	Madhya Pradesh	Jhansi - Khajuraho(PKG-I)	76.61	PNC Infratech Limited	1410	31 March 17

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
44	Rajasthan	Six Lane Greenfield Udaipur Bypass [Connection between NH-76 at Existing Km. 118.500 at Debari to NH-8 Km. 287.400 at Kaya Village] (Pkg-IV)	23.88	Sadbhav Infrastructure Projects Ltd.	891	27 April 17
45	Gujarat	Porbandar-Dwarka (Package VIII) from km. 379.100 to km. 496.848	117.74	G R INFRAPROJECTS LTD & VINOD KUMAR AGRAWAL	1600	02 June 17
46	Himachal Pradesh	Pandoh bypass (221.305) to Takoli (242.000) of NH-21 in the state of Himachal Pradesh	18.91	Shapoorji Paloonji	2604	19 June 17
47	Tamil Nadu	Cholapuram - Thanjavur section of NH-45C from km 116.4 to km 164.275	47.83	Patel Infrastructure Limited	1345.6	29 August 17
48	Bihar	Aunta - Simaria including Ganga Bridge	8.15	Welspun Enterprises Ltd. In consortium with Welspun Energy P. Ltd.	1161	31 August 17
49	Tamil Nadu	Sethiyathope - Cholapuram section of NH45C (Pkg-II)	50.48	Patel Infrastructure Limited	1461	29 September 17
50	Rajasthan	4 Lane from Km 299.000 to 346.540 (Darah-Jhalawar-Teendhar section) of NH-12	48.88	Patel Darah-Jhalawar Highway Private Limited	1123.63	04 October 17
51	Uttar Pradesh	6L of Chakeri - Allahabad from 483.687 to km. 628.753 of Old NH-02	145.07	PNC Infratech Pvt. Ltd.	2159	13 November 17
52	Andhra Pradesh	6 L of Narasannapeta - Ranastalam	54.2	APCO Infratech Pvt. Ltd.	1350	05 December 17
53	Jharkhand	Sahibganj - Manihari Ganga Bridge including Manihari Bypass (Terminated)	21.89	Consortium of China Harbour Engineering Company - Soma Enterprise Ltd.	2598	06 December 17
54	Rajasthan	Jodhpur Ring Road Package-I [4-laning of Dangiawas (Km. 96.595) to Jajiwal (Km. 283.500)	75	Sadbhav Infrastructure Projects Ltd.	1161	19 December 17
55	Odisha	Chandikhole (km 62.000) to Bhadrak (km136.500)	74.5	Dilip Buildcon Ltd.	1522	24 January 18

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
56	Odisha	Bhadrak (KM 136.500) to Baleshwar (KM 199.141)	62.64	Brij Gopal Construction Pvt. Ltd.	999	24 January 18
57	Kerala	Kozhikode Bypass (Calicut Bypass) Vengalam Jn. to Ramanattukara Jn.	28.4	KMC Construction Ltd.	1710	26 February 18
58	Gujarat	6L of Shamla ji to Motachilodha from km.401.200 to km. 494.410 of Old NH-8 (Pkg-VI)	93.21	Chetak Enterprises Pvt Limited	1361	27 February 18
59	Andhra Pradesh	6L of Anandapuram Pendurthi Anakapalli Section from km. 681.000 to km. 731.780 of NH-16	50.78	Dilip Buildcon Ltd.	2013	28 February 18
60	Karnataka	Nidagatta-Mysore (Pkg II)	61	Dilip Buildcon Ltd.	2283.5	28 February 18
61	Karnataka	Bangalore-Nidagatta (Pkg. I)	56.2	Dilip Buildcon Ltd.	2190	28 February 18
62	Tamil Nadu	Trichirapalli (Km 0.000) to Kallagam (Km. 38.700) of NH-227 in Tamil Nadu	38.7	KNR Constructions Limited	1020.6	28 February 18
63	Jharkhand	Khairatunda to Barwa Adda Section of NH 2 from km. 360.300 to km. 400.132 (Pkg II)	40.33	Ashoka Buildcon Limited	860.1	05 March 18
64	Jharkhand	6L of Gorhar to Khairatunda Section of NH-2 from Km. 320.810 to Km.360.300 (Pkg I)	40.19	Dilip Buildcon Ltd.	917	05 March 18
65	Haryana	Gurgaon Sohna Pkg-I (Km.2.74 to Km.11.682)	8.94	Oriental Structural Engineers Pvt. Ltd.	707	06 March 18
66	Haryana	sss	12.72	H.G. Infra Engineering Limited	606	06 March 18
67	Karnataka	Belgaum-Khanapur Pkg I (Km 0.000-Km 30.800) of NH-4A	30	Ashoka Buildcon Limited	856.2	07 March 18
68	Karnataka	Tumkur-Shimoga (Pkg-III) from Km 121.900 (Banawara) to Km 170.415 (Bettadahalli) of NH-206 (Terminated)	48.52	Sadbhav Infrastructure Projects Ltd.	933.81	07 March 18
69	Karnataka	Tumkur-Shimoga (Pkg-I) from Mallasandra to Karadi village of NH-206	52.89	Ashoka Buildcon Limited	877.51	07 March 18

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
70	Karnataka	Tumkur-Shimoga (Pkg-II) from Km 65.195 (Karadi) to Km 121.900 (Banawara) of NH-206	56.71	Ashoka Buildcon Limited	1218.5	07 March 18
71	Tamil Nadu	Meensurutti (Km.98.433) to Chidambaram (Km.129.965) of NH-227 in Tamil Nadu (Terminated)	31.53	KNR Constructions Limited	482.04	07 March 18
72	Andhra Pradesh	Gundugolanu Devarapalli Kovvuru	69.88	G R Infraprojects Limited	1827	13 March 18
73	Tamil Nadu	Poondiyankuppam (Km.67.000) to Sattanathapuram (Km.123.800) of NH-45A in Tamil Nadu (Terminated)	56.8	IRB Infrastructure Developers Ltd. in JV with Modern Road Makers Pvt. Ltd.	2169	14 March 18
74	Tamil Nadu	Puducherry (Km.29.000) to Poondiyankuppam (Km.67.000) of NH-45A (New NH-332) in Tamil Nadu (Terminated)	38	IRB Infrastructure Developers Ltd.	1296	14 March 18
75	Tamil Nadu	Viluppuram (Km.0.000) to Puducherry (Km.29.000) of NH-332 in Tamil Nadu (Terminated)	29	Oriental Structural Engineers Pvt. Ltd.	962.2	14 March 18
76	Tamil Nadu	Kallagam (km.38.700) to Meensurutti (Km.98.433) of NH-227 in Tamil Nadu	59.73	Oriental Structural Engineers Pvt. Ltd.	1071	16 March 18
77	Andhra Pradesh	Visakhapatnam Port Road from Km. 0.000 to Km. 12.700 (Terminated)	12.7	Sadbhav Infrastructure Projects Ltd.	549	20 March 18
78	Gujarat	Pipli Bhavnagar-Package 1 from km 136.025 to km 169.328	33.31	Kalthia Engineering & Construction Ltd. JP Iscon Pvt. Ltd. Consortium	820	20 March 18
79	Gujarat	Vadodara Mumbai Expressway (Padra to Vadodara) (Phase IA - Pkg I) [Km 355.00 to Km 378.740]	23.74	IRB Infrastructure Developers Ltd.	2043	20 March 18
80	Gujarat	Bhimasar-Bhuj (Terminated)	59.54	Sadbhav Infrastructure Projects Ltd.	1152	20 March 18
81	Uttar Pradesh	Aligarh-Kanpur (Pkg I) [Aligarh-Bhadwas]	45.83	Brij Gopal Construction Pvt. Ltd.	1065.7	20 March 18
82	Uttar Pradesh	Aligarh-Kanpur (Pkg II) [Bhadwas to Kalyanpur]	45.2	PNC Aligarh Highways Pvt Ltd	1197	20 March 18
83	Andhra Pradesh	Giddalur-Vinukonda from Design km 212.983 to Design km 322.800	112.8	BVSR Constructions Private Limited	678.69	26 March 18

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
84	Andhra Pradesh	Chittor (Design Km 0.000-Existing Km 158.000 of NH-4) to Mallavaram (Design Km 61.128-Existing Km 41.800 of NH-140)	61.13	KNR Constructions Limited	1730.07	26 March 18
85	Haryana	Four Laning of Rohna/Hassangarh section from Km.44.800 to km.80.250 (Package-2)	35.45	Gawar Constructions Ltd.	718	26 March 18
86	Karnataka	Byrapura to Challakere Section from km 308.550 to km 358.500 of NH-150 A	49.95	Dilip Buildcon Ltd.	841.7	26 March 18
87	Rajasthan	Munabao(NH-25E)-Sundra-Myajlar-Dhanana-Asutar - Ghotaru-Tanot [Design Chinange Km 0.0 to Km 46.00 and km 82.60 to Km 310.467]	273.87	Dineshchandra R. Agrawal Infracon Pvt. Ltd.	1438.29	26 March 18
88	Telangana	Mangloor to Telangana Maharashtra Border	49	Dilip Buildcon Ltd.	936	26 March 18
89	Telangana	Sangareddy - Nanded (Pkg. II) Ramsanpalle to Mangloor	46.8	KNR Constructions Limited	1234	26 March 18
90	Maharashtra	Four Laning of Akkalkot to Solapur (including Akkalkot Bypass of Length 7.35 km.) from km. 99.400 to km. 138.352 of NH-150 E	38.95	G R Infraprojects Limited	807	27 March 18
91	Maharashtra	Four Laning of Sangli - Solapur (Pkg I) [Sangli - Borgaon km 182.556 - km 224.00]	41.44	Dilip Buildcon Ltd.	1102.4	27 March 18
92	Maharashtra	Four Laning of Sangli - Solapur (Pkg II) [Boregaon-Watambare] from km. 224.00 to km. 276.00	52	Dilip Buildcon Ltd.	1029.4	27 March 18
93	Maharashtra	Four Laning of Sangli - Solapur (Pkg III) [Watambare-Mangalwedha] from km 276.0 - km 321.60	45.6	G R Infraprojects Limited	957	27 March 18
94	Maharashtra	Four Laning of Sangli - Solapur (Pkg IV) [Mangalwedha-Solapur] from km 321.6 - km 378.10	56.5	Dilip Buildcon Ltd.	1141	27 March 18

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
95	Maharashtra	Chakur Loha Section of NH-361 from km 114.600 to km 187.80	73.35	MEP Infrastructure Developers Ltd. - Long Jian Road & Bridge Co. Ltd. (JV)	1000.1	27 March 18
96	Maharashtra	Loha-Waranga Section of NH-361 from km 187.800 to km 244.369	56.57	MEP Infrastructure Developers Ltd. - Long Jian Road & Bridge Co. Ltd. (JV)	1073.1	27 March 18
97	Maharashtra	4L of Ausa-Chakur Section from km 55.835 to Km 114.345 of NH-361	58.51	MEP Infrastructure Developers Ltd. - Long Jian Road & Bridge Co. Ltd. (JV)	848.63	27 March 18
98	Rajasthan	Khajuwala-Poogal - Dantour- Jaggasar- Gokul-Goddu -Ranjeetpura-Charanwala- Naukh-Bap section of NH	212.11	Gawar Construction Ltd.	895	27 March 18
99	Uttar Pradesh	Aligarh-Kanpur (Pkg III) [Kalyanpur - Naviganj]	61.2	APCO Infratech Pvt. Ltd.	1332	27 March 18
100	Chhattisgarh	Bilaspur-Pathrapalli from km. 0.00 to km. 53.30	53.3	Aadani Enterprises Ltd. and Prakash Asphaltings & Toll Highways (India) Ltd.	1140.8	28 March 18
101	Gujarat	Vadodara Mumbai Expressway (Manubar to Sanpa) (Phase IA - Pkg III)	31	Patel Infrastructure Limited	1712	28 March 18
102	Gujarat	Vadodara Mumbai Expressway (Sanpa to Padra) (Phase IA - Pkg II) [Km 323.00 to Km 355.00]	32	IRCON International Limited	1865	28 March 18
103	Gujarat	Vadodara Mumbai Expressway (Ankleshwar to Manubar) (Phase IA - Pkg IV)	13	Ashoka Buildcon Limited	1687	28 March 18
104	Gujarat	Vadodara Mumbai Expressway (Kim to Ankleshwar) (Phase IA - Pkg V)	24.57	Sadbhav Infrastructure Projects Ltd.	1404	28 March 18
105	Madhya Pradesh	Churhat Bypass of Rewa Sidhi Section	15.35	Dilip Buildcon Ltd.	1004	28 March 18
106	Maharashtra	Vadape to Thane from km 539.202 to km 563.000 section of NH-3 new NH-848	20.71	MEP Infrastructure Developers Ltd. - Long Jian Road & Bridge Co. Ltd. (JV)	1182.87	28 March 18

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
107	Karnataka	Challakere to Hariyur section from km 358.500 to km 414.205 of NH-150 A	56	PNC Infratech Limited	1157	01 June 18
108	Karnataka	Bellary to Byrapura Section km 253.600 to km 308.550 of NH-150A	54.95	Dilip Buildcon Ltd.	1313.9	01 June 18
109	Tamil Nadu	Sattanathapuram to Nagapattinam from Km 123.800 to Km 180.624	56.824	Welspun Enterprises Ltd.	2004.51	05 July 18
110	Haryana	Paniyala Mor (NH-48 Jn) to Narnaul Sec. of NH-148B & Narnaul to Pacheri Kalan Sec. of NH-11 (Pkg-I)	45.3	Gawar Constructions Ltd.	1007.55	15 January 19
111	Tamil Nadu	Kamalapuram to Oddanchatram from km. 0.00 to km. 35.822	36.5	DRN Infrastructure Private Limited	720	11 February 19
112	Tamil Nadu	Madathukulam - Pollachi from km. 74.38 to km. 116.95	50.07	D.P.Jain & Co	724	13 February 19
113	Haryana	UP/HR Border - Sonepat - Jhajjar	40.5	Gawar Constructions Ltd.	1020	28 February 19
114	Haryana	Upgradation of 4 lane of Rewari-Ateli Mandi Section of NH-11 from Km11.780 to Rewari to Ex. Km 43.445 near Ateli Mandi	31	H.G. Infra Engineering Limited	564.98	28 February 19
115	Tamil Nadu	Oddanchatram - Madathukulam from km. 29.00 to km. 74.38	45.38	KNR Constructions Limited	920	07 March 19
116	Andhra Pradesh	6L of Chilkararupet bypass from km. 357.400 to km. 371.920 of NH-16	16.38	BSCPL Infrastructure Ltd.	712.44	08 March 19
117	Gujarat	Dwarka (Kuranga)-Khambhaliya - Devariya	71.89	G R Infraprojects Limited	1101	08 March 19
118	Haryana	Gohana - Sonipat (PKG-2)	38.24	Brij Gopal Construction Pvt. Ltd.	899	08 March 19
119	Haryana	4L of Jind-Gohana road (Package-1) from km. 0.00 to km. 40.601 of NH-352 A under NH(O)	40.6	Brij Gopal Construction Pvt. Ltd.	817	08 March 19
120	Haryana	Narnaul Bypass & Ateli Mandi to Narnaul section of NH-11 km 43.445 to km 56.900	40.8	H.G. Infra Engineering Limited	871.28	08 March 19

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
121	Karnataka	4L of Bettadahalli-Shivamogga section from Km.170.415 to km. 226.750 of NH-206 (Tumkur-Shivamogga Pkg-IV)	56.35	Ashoka Buildcon Limited	1249.8	08 March 19
122	Telangana	Suryapet to Khamam	58.62	Adani Transport Limited and Prakash Asphaltings	1566.3	08 March 19
123	Telangana	4L of Mancherial to Repallelwada km 251.900 to km 288.510	42	Adani Transport Limited and Prakash Asphaltings	1356.9	08 March 19
124	Maharashtra	Sinnar-Shirdi (including Sinnar Bypass)	50.94	Montecarlo Limited	1026	09 March 19
125	Jharkhand	4L of NH-80 from km 215.00 to km 260.00 Mirza Chauki to Farkka (Pkg-I)	42.71	Ram Kripal Singh Construction Pvt. Ltd	765	10 March 19
126	Telangana	Sangareddy - Nanded - Akola (Pkg-I) [From Kandi to Ramsanpalle]	40	Ashoka Concessions Limited	1000	19 November 19
127	Maharashtra	Balance Works of 4L Amravati - Chikhli (Pkg - I) [Amravati - Kurankhed from km. 166.00 to km. 220.00]	54	Raj Path Infracon Pvt Ltd - Eagle Infra Ltd (Consortium)	707	07 February 20
128	Maharashtra	Balance Works of 4L Amravati - Chikhli (Pkg - II) [Kurankhed - Shelad from km. 220.00 to km. 270.00]	50	Raj Path Infracon Pvt Ltd - Eagle Infra Ltd (Consortium)	677	07 February 20
129	Maharashtra	Balance Works of 4L Amravati - Chikhli (Pkg - III) [Shelad - Nandura from km. 270.00 to km. 315.00]	45	MonteCarlo Ltd.	682	07 February 20
130	Maharashtra	Balance Works of 4L Amravati - Chikhli (Pkg - IV) [Nandura - Chikhli from km. 315.00 to km. 360.00]	45	Kalyan Toll Infrastructure Ltd.	641	07 February 20
131	Karnataka	Tumkur-Shimoga (Pkg-III) from Km 121.900 (Banawara) to Km 170.415 (Bettadahalli) of Old NH-206	48.52	Ashoka Buildcon Limited	1035	14 February 20
132	Uttar Pradesh	Unnao - Lalganj Section from km 0.000 to 70.000	70	PNC Infratech Limited	1602	27 February 20
133	Haryana	Four Laning of Rewari Bypass Pkg-IV	14.4	H.G. Infra Engineering Limited	522.02	28 February 20

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
134	Andhra Pradesh	Six Laning of Vijayawada Bypass from Chinna Avutapalli to Gollapudi in Vijayawada - Gundugolanu Section from km. 0.00 to km. 30.00 (Pkg-III)	30	Megha Engineering and Infrastructure Ltd. - Navyuga Engineering Co. Ltd. (Consortium)	1148	06 March 20
135	Andhra Pradesh	Six Laning of Vijayawada Bypass from Gollapudi to Chinnakakani in Vijayawada - Gundugolanu Section from km. 30.00 to km. 47.881 (Pkg-IV)	17.88	Adani Enterprises Ltd. - Navyuga Engineering Co. Ltd. (Consortium)	1546.31	06 March 20
136	Uttar Pradesh	Four Lanning of Jagdishpur-Faizabad Section from km 47.930 to km 107.680 of NH-330A	60.22	PNC Infratech Limited	1530	09 March 20
137	Uttar Pradesh	Aligarh-Kanpur section (Package-IV from Naviganj - Mitrasen)	71	G R Infraprojects Limited	2200	09 March 20
138	Uttar Pradesh	Aligarh-Kanpur section (Package-V from Mitrasen-Kanpur)	60.6	PNC Infratech Limited	2052	09 March 20
139	Chhattisgarh	4 Laning with PS of Pathrapalli-Katghora km 53.3 to km 92.6 (Pkg-II of Bilaspur Kathghora)	39.3	Dilip Buildcon Ltd.	811.9	18 March 20
140	Tamil Nadu	Thorapalli - Agraharam - Jittandahalli Section from km 23.350 to km 60.100 [Hosur to Dhamrapuri Pkg-2]	36.75	Sunway Construction Sdn Bhd - RNS Infrastructure Ltd. (Consortium)	864.51	20 March 20
141	Tamil Nadu	Mahabalipuram - Pondicherry (Pkg-I) [Mamallapuram to Mugaiyur]	31	JSR Infra Developers Pvt. Ltd.	770	23 March 20
142	Tamil Nadu	Jittandahalli to Dharampuri Section of NH-844 from km 60.100 to km 94.460 [Hosur to Dhamrapuri Pkg-3]	34.36	Dineshchandra R. Agrawal Infracon Pvt. Ltd.	899.25	28 March 20
143	Madhya Pradesh	Indore - Harda (Pkg-III) [Nanasa to Pidgaon Section from km 95.000 to km 142.445]	47.445	Adani Enterprises Ltd.	866.64	30 March 20
144	Madhya Pradesh	Dhangaon - Borgaon section (km 81.000 to km 139.000) [Indore - Edlabad Pkg IV]	58	Prakash Asphaltings and Toll Highways (India) Ltd.	792.65	30 March 20
145	Uttar Pradesh	Meerut - Nazibabad 53.95Km Highway	53.95	PNC Infratech Limited	1417	–

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
146	Tamil Nadu	Two Laning Of Meensurutti To Chidambaram Section Of NH-227 PPP		Sunway Construction Sdn Bhd - RNS Infrastructure Ltd. (Consortium)		01 October 20
147	Kerala	Calicut 28.8km Expressway (Re-launch)	28.8	Wellspun Enterprises	1900	01 March 21
148	Himachal Pradesh	Upgradation of 28.7Km Highway Between Pathankot-Mandi PPP	28.7	IRB Infrastructre	778	01 March 21
149	Andhra Pradesh	Bangalore Chennai Expressway (Phase-II Pkg-I) from km.71.000 to Km 96.000 (Bethamangala in the state of Karnataka to Byreddypalli)	25	Montecarlo		01 March 21
150	Andhra Pradesh	Bangalore Chennai Expressway (Phase-II Pkg-III) from km.127.000 to Km 156.000 (Bangarupalem to Gudipala section)	29	Dilip Buildcon Ltd.		01 March 21
151	Karnataka	Package 1 (26.40 km): Bangalore to Malur (Km 0.000 to Km 26.400)		Dilip Buildcon Ltd.	1079.23	01 February 21
152	Karnataka	Construction of 8 lane Bangalore – Chennai Expressway from Km 26.400 to Km 53.500 (Malur to Bangarpet Section)		Dilip Buildcon Ltd.	1186.94	01 February 21
153	Tamil Nadu	Package 1 (24 km): Gudipala to Walajahpet (Km 156.000 to Km 180.000)		Montecarlo	1104.46	01 February 21
154	Tamil Nadu	Package 2 (24.5 km): Walajahpet to Arakkonam (Km 180.000 to Km 204.500)		KCC Buildcon		–
155	Tamil Nadu	Package 3 (25.5 km): Arakkonam to Kancheepuram (Km 204.500 to Km 230.000)		DP Jain	1005.44	01 February 21
156	Bihar	Bakhtiyarpur-Rajauli Pkg-II from km. 54.405 to km.101.630	47.2	Gawar Construction ltd.	1065	01 September 20
157	Bihar	Bakhtiyarpur-Rajauli Pkg-III from km. 101.630 to km.152.520	50.9	Gawar Construction ltd.	2310	01 September 20

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
158	Bihar	4L from km. 34.600 to km. 79.970 & 2LPS from km. 79.970 to km. 82.000 of Narenpur - Purnea Section of NH-131A	49	Dilip Buildcon Ltd.	1905	01 September 20
159	Gujarat	Vadodara Mumbai Expressway (Ena-Kim) (Phase IB - Pkg VI) [Km 217.500 to Km 254.430]	37.43	G R infraprojects	2180	01 July 20
160	Gujarat	Vadodara Mumbai Expressway (Gandeva to Ena) (Phase IB - Pkg VII) [Km 190.00 to Km 217.500	27	IRB Infrastructure		01 September 20
161	Gujarat	Vadodara Mumbai Expressway (Jujuwa to Gandeva) (Phase IB - Pkg VIII) [Km 154.600 to Km 190.000]	36	Interbuild Infrastructure PVt LTd		–
162	Gujarat	4L of Dhrol-Bhadra (Between Ex. Km 5.700 to Km 13.600 of SH-25) and Bhadra Patiya-Pipaliya Section of NH-151A	50.4	Dilip Buildcon Ltd	882	01 July 20
163	Haryana	6L Access Controlled Highway from Jn. with Jaitpur - Pushta Road to Jn. with Sector 62/65 dividing road on Faridabad - Ballabhgarh Bypass of NH-148NA from km. 9.00 to km. 33.00 including Spur upto Badarpur Border	25.38			–
165	Haryana	Package 2 (26.80 km): Junction with Rohtak Panipat road (NH709) near Rukhi Paani village to Junction with Jind Panipat road (NH352A) near Gangana (Km 34.000 to Km 60.800)	26.8	Centrodorstroy	887.54	01 March 21
166	Haryana	Package 3 (30.6 km): Junction with Jind-Panipat road NH352A near Gangana village to Junction with Jind Karnal road NH709A near Alewa village (Km 60.800 to Km 91.400)	30.6	KCC Buildcon	1040.07	01 March 21

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
167	Haryana	Package 4 (28.85 km): Junction with Jind Karnal road NH709A near Alewa to Junction with Ambala Kaithal Hissar road NH152 near Kharak Pandwa village (Km 91.400 to 120.250)	28.85	NKC	930.6	01 March 21
168	Punjab	Package 6 (30.91 km): Junction with Patiala-Samana-Patran road (SH-10) near Ghagga village to Junction with Patiala-Bathinda road (NH-7) near Bhawanigarh (Km 157.920 to Km 188.830)	30.91	Shiv Build India	733	01 March 21
169	Punjab	Package 7 (36.94 km): Junction with Patiala-Bathinda road (NH-7) near Bhawanigarh to Junction with Ludhiana-Malerkotla road (SH-11) near Bhogiwal village (Km 188.830 to Km 225.770)	36.94	Ceigall India	881	01 March 21
170	Punjab	Package 8 (35.09 km): Junction with Ludhiana Malerkotla road SH11 near Bhogiwal village to Junction with Ludhiana Moga road NH-5 near Mullanpur Dakha (Km 225.770 to 260.860)	35.09	Evrascon – MKCIL JV	989.66	01 March 21
171	Punjab	Package 11 (43.02 km): Junction with Jalandhar-Kapurthala road NH-703A near Khojewal village to Junction with Amritsar-Tanda road NH-503A near Sri Hargobindpur (Km 319.400 to Km 362.420)	43.02	Evrascon – MKCIL JV	1296.96	01 April 21
172	Punjab	Package 12 (35.28 km): Junction with Amritsar-Tanda road (NH-503A) near Sri Hargobindpur to Junction with Pathankot-Gurdaspur road (NH-54) near Gurdaspur (Km 362.420 to Km 397.700)	35.28	Evrascon – MKCIL JV	853.66	01 March 21

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
173	Jharkhand	4L of Palma to Gumla from km. 26.00 to km. 89.170 of NH-23		RKC Construction		–
174	Karnataka	Bangalore Ring Road Pkg 2 [4 laning from km. 42.000 to km. 80.00 of Doddaballapura Bypass to Hoskote section of NH-648 (Old NH-207)		Dilip Buildcon	1278	01 August 20
175	Kerala	Upgradation of 43Km Highway from Azhiyur to Vengalam PPP	39.1	Azhiyur Vengalam Road Private Limited	1783	01 November 20
176	Madhya Pradesh	4L of Harda - Betul (Pkg-I) from Km.0 to Km.30.20 [Harda - Temagaon]	30			–
177	Madhya Pradesh	Harda - Betul (Pkg-III) from Km. 81.00 to Km.121.248 [Chicholi - Betul]	40.24			–
178	Maharashtra	Upgradation of 41.6Km Stretch between Ahmednagar and Mirajgaon PPP	41.6	Anish Infracon-GHV (India) JV	629	01 March 21
179	Maharashtra	Ganjad to talasari (Package 11)- Delhi Mumbai Expressway	26.4	RKC Infrabuilt	1260	01 September 20
180	Maharashtra	Shrisad to Masvan (Package 13)- Delhi Mumbai Expressway	27.1	G R infraprojects	2747	01 September 20
181	Maharashtra	Upgradation of 67.23Km Stretch Between Bodhre and Dhule PPP	67.23	Kalthia Engineering & Construction	1007	01 March 21
182	Puducherry, Tamilnadu	Upgradation of 29Km Stretch Between Puducherry and Villupuram PPP	29	Dilip Buildcon Ltd.	1013	01 February 21
183	Puducherry, Tamilnadu	Upgradation of 38Km Stretch Between Puducherry and Poondiyankuppam PPP	38	Dilip Buildcon Ltd.	1228	01 February 21
184		Four laning of NH-161 from Kandi (Design Km HAM 0.000) (Km 498.250 of NH-65) to Ramsanpalle (Design Km 39.980/Existing Km 44.757)	39.98	M/s. Ashoka Concessions Limited	736.27	22 November 19

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
185		Chilkararupet bypass	17	M/s.BSCPL Infrastructure Ltd.	902.83	03 August 19
186		Sattanathapuram to Nagapattinam (Design Ch Km 123.800 to Km 179.555)	55.76	M/s. Welspun Enterprises Ltd.	1872.68	07 May 18
187	Uttar Pradesh	Aligarh-Kanpur (Pkg I) [Aligarh-Bhadwas]	46	M/s BG Aligarh-Kanpur Highway Pvt. Ltd.	1482.18	20 March 18
188	Gujarat	Pipli Bhavnagar-Package 1	33.3	Kalthia Engineering & Construction Ltd. JP Iscon Pvt. Ltd.	798	20 March 18
189		Chakeri Allahabad	145	M/s PNC Triveni Sangam Highways Pvt Ltd	1926.93	13 November 17
190	Uttar Pradesh	Meerut-Nazibad from km 11.50 to km 39.24 & km 89.59 to km 112.545 of NH-119 (Pkg-1)	53.95	PNC Infratech	1412	24 June 20
191	Telegana	4L of NH-363 from Repallewada from km 288.510 to TL/MH Border km 342.00	52.602	Dilip Buildcon Ltd.	1140.5	01 March 21
192		Fariadabad-Ballabhgarh Bypass to Jn. With KMP Expressway with NH-148NA from km 33.00 to km 59.063	26.063	DRA		–
193	Himachal Pradesh	Balance work of Kiratpur Nerchowk (Pkg-2)[Green Field]	47.5	Gawar Constructions Ltd.	2098	16 October 20
194	Maharashtra	Vadodara Mumbai Expressway (Phase-II-Pkg-XI)[km 77.000 to km 103.400](Ganjad-Talsari)	26.4	RKC Infrabuilt Pvt Ltd	1757	15 October 20
195	Maharashtra	Vadodara Mumbai Expressway (Phase-II-Pkg-XII)[km 50.700 to km 77.000](Masvan-Ganjad)	26.3	Sunway Construction Sdn Bhd RNS Infrastructure Ltd. (Consortium)	2032	15 October 20
196	Maharashtra	Vadodara Mumbai Expressway (Phase-II-Pkg-XIII)[km 26.582 to km 50.700](Shirsad-Masvan)	27.118	GR Infra	4381	15 October 20

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
197	Madhya Pradesh	Dewas-Ujjain including Ujjain Bypass & Dewas Bypass	41.42	Gawar Constructions Ltd.	716	11 December 20
198	Haryana	62/65 Dividing Road on Fariabad - Ballabhgarh Bypass of NH-148NA from km 9.00 to km 33.00 including Spur upto Badarpur Border	24	DRA	908.2(EPC)	–
199	Kerala	6L Perole (Nileshwar Town) to Taliparamba from km 94.248 to km 134.650 of NH-66	40.4	Megha Engg. & Infrastructure Ltd.	3041.65	–
200	Kerala	6l of Chengala-Neeleshwaram from km 56.200 to km 93.468	37.27	Megha Engg. & Infrastructure Ltd.	1746.45	–
201	Haryana	4/6L of Gurgaon- Pataudi - Rewari from km 0.00 to km 43.87 of NH-352W	43.87	IRCON Interenational	900	–
202	Maharashtra	Ahmednagar Bypass	40.6	GHV (India) Ltd	715	06 January 21
203	Andhra Pradesh	Renigunta - Poyya - Naidupeta km 124.60 to km 183.4 of NH 71	57.04	Megha Engg. & Infrastructure Ltd.	1457.92	–
204	Gujarat	4L of Dhrol-Bhadra Patiya section from 0.000 to km 13.600 and Bhadra Patiya-Pipaliya section from 73.00 to km 24.00 of NH-151A		Dilip Buildcon Ltd.	882	14 December 20
205	West Bengal	4L of Gagalia- Bahadurganj section from km 0.000 to 49.000 (Pkg-I) of NH327E	49	GR Infraprojects Ltd	1051	10 January 22
206	West Bengal	4L of Badadurganj Araria section from km 49.000 to km 94.000 (Pkg II) of NH-327E	45	G R Infraprojects Limited	1081.70	–
207	Kerala	6L of Azhiyur -Vengalam from km 189.200 to km 230.400 of NH-66	41.2	Adani Enterprises Ltd.	1838	–
208	Kerala	6L of Taliparamba to Muzhappilangad from Km 134.650 to Km 170.6 of NH-66	29.95	VRC Constructions	2714.6	–

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
209	Punjab	6L Mandi Dabwali (Punjab/Harayana Border) Sangaria Road Section from proposed Mandi Dabwali Bypass to Chautala from km 27.400 to km 62.200 of NH-54	35	Vishwa Samudra	745.93	01 February 21
210	Bihar	4L of Munger-Mirzachauki section from start existing Bhagalpur bypass to Rasulpur from km 125+000 to km 157+350 (Pkg-3)	32.35	Montecarlo Limited	1017	–
211	Bihar	4L of Munger-Mirzachauki section from Munger to Kharia village junction from 69+520 to km 95+580 (Pkg-I)	26.06	Montecarlo Limited	981	–
212	Karnataka	Bangalore-Chennai Expressway- Pkg-I of Phase-I from km 0.00 to km 26.400 from Bangalore-Malur	27.1	Dilip Buildcon Ltd.	1079.23	–
213	Karnataka	Bangalore-Chennai Expressway- Pkg-II of Phase-I from km 26.400 to km 53.500 from Malur-Bangarpet	27.1	Dilip Buildcon Ltd.	1186.94	–
214	Haryana	Delhi-Amritsar-Katra Expressway (Phase-I Pkg-IV) from Junction with Jind-Karnal road (NH-709A) near Alewa village to Junction with Ambala-Kaithal-Hissar road (NH-152) near Kharak Pandwa village (km 91+400) to km 120+250)	28.85	NKC Projects Private Limited	930.6	–
215	Haryana	Delhi-Amritsar-Katra Expressway (Phase-I Pkg-I) from Jussur Kheri on NH-KMP Expressway to Junction with Rohtak-Panipat road (NH-709) near Rukhi Paani Village (km 0+000) to km 34+000)		KCC Buildcon Pvt. Ltd.	1130.58	–
216	Jharkhand	Hariharganj to Parwa Mod Section from km 23.284 to km 57.049 of NH-98	33.765	Shivalaya Construction Co. Pvt. Ltd.	585.5	18 December 20

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
217	Punjab	6L of Jodhpur Romana (Bathinda) - Mandi Dabwali (Punjab Haryana Border) section NH-54 from km 0.000 to km 27.400 of NH-54	27.4	Ceigall India Ltd.	621	–
218	Haryana	Delhi-Amritsar-Katra Expressway (Phase-I Pkg-II) from Junction with Jind-Panipat road (NH-709) near Gangana village to Junction with Jind-Karnal (NH-709A) near Alewa village (km 60+800) to km 91+400)	30.6	KCC Buildcon Pvt. Ltd.	1040.07	–
219	Haryana	Delhi-Amritsar-Katra Expressway (Phase-I Pkg-II) from Junction with Rohtak-Panipat road (NH-709) near Rukhi Paani Village to Junction with Jind-Panipat road (NH-352A) near Gangana village (km 34+000 to km 60+800)	26.8	CDS Infra Projects Limited	887.54	–
220	Bihar	4L of Munger-Mirzachauki section from km 95+580 to km 125+000 (Pkg-II)		APCO Infratech Pvt. Ltd.	892.00	–
221		4L of Munger-Mirzachauki section from km 157+350 to km 193+931 (Pkg-4)		APCO Infratech Pvt. Ltd.	902.00	–
222	Kerala	Six Laning of KT/KL Border (Thalapaddy) - Chengala from km 17.200 to km 57.200	39	Uralungal Labour Contract Co-operative Society Ltd	1981.07	–
223	Himachal Pradesh	4L of Bhangwar (Ranital) to Kangra Bypass Section of Old NH-88 (New NH-303,503) upto Intersection with NH-154 from km 175.270 to km 193.400 (Pkg-VB)	18.13	Gawar Constructions Ltd.		–
224		4L of Bilaspur to Urga (km 0.00 to 70.2) of NH-130-A	70.2	GR Infra		–
225	Kerala	6L of Ramanatukkara Junctiom start of Valanchery bypass section of NH-66		KNR Constructions Limited	2,116	21 January 22

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
226	Kerala	6L of Valanchery bypass to Kappirikkad of NH-66 from km 298+500 to km 335+850		KNR Constructions Limited	2,140	–
227	Karnataka	Bangalore - Chennai Expressway- Pkg-III of Phase-I from km 53.500 to km 71.00 from Bangarpet-Bethamangala	17.5	KCC Buildcon Pvt. Ltd.	809.5	–
228	Odisha	6L of Karki-Kaliagura Section from km 226.500 to km 249.000 of NH-130-CD [Pkg-OD-4]	22.5	NKC Projects Private Limited	494.22	14 July 21
229	Odisha	6L of Dhanara-Hatibena Section from km 126.611 to km 146.50 of NH-130-CD (Package-OD-1)	19.889	NKC Projects Private Limited	472.1	14 July 21
230	Chattisgarh	4 laning of Champa-Korba from km 0.00 to km 38.2	38.2	Gawar Constructions Ltd.	646.99	–
231	Himachal Pradesh	4L of Mo- Sihuni from km 42.00 to km 51.00 of Old NH-20 (new NH-154) of Pathankot - Mandi section in the state of Himachal Pradesh (Pkg-IB)	9	Gawar Constructions Ltd.	499.27	–
232	Tamil Nadu	Poondiyankuppam (Km 67.000) to Sattanathapuram (Km.123.800)	56.8	Oriental Structural Engineers Pvt. Ltd.	2080.00	–
233	Maharashtra	4L of Ahmednagar Mirajgaon Karmala - Tembhurni (Pkg-1) [Ahmednagar to Ghogargaon] from km. 0.00 to km. 38.775 of NH-516A	38.775	GHV (India) Pvt Ltd.	715	06 January 21
234	Odisha	6L of Badakumari- Karki Section from Km 179.000 to km 226.500 of NH-130-CD (Package-OD-3)	47.5	Adani Road Transport Ltd.	1169.10	02 April 21
235	Telegana	4L of Kodad (Design Km 0.00/Existing Km 185.00 of NH-65) to Khammam (Design Km 31.800/Existing Km 29.400) of NH-365A		Adani Road Transport Ltd.	1039.90	–
236	Andhra Pradesh	6L Jakkuva-Korlam Section of NH-130CD Road from km 396.800 to km 421.100 (Pkg 2)	24.3	NKC Projects Private Limited	598.8	–
237	Punjab	Malout Abohar-Sadhuwall		Ceigall India Ltd.	918	–

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
238	Himachal Pradesh	4L of HP/Punjab Border-Mo from km 11.00 to km 42.00 of Old NH-20 (New NH-154) (Package-IA)	31	IRB Infrastructure Developers Ltd.	828	–
239	Karnataka	4L of Sannur to Bikarnakatte section from Km 691.350 to Km 736.362 of NH-169 Karkala - Mangalore (Package-III)	45.012	Dilip Buildcon Ltd.	1137	01 March 21
240	Odisha	6L of Hatibena-Badakumari Section from Km 146.50 to km 179.00 of NH-130-CD (Pkg-OD-2)	32.5	Barbrik Projects Ltd.		–
241	Maharashtra	4L of Ahmednagar Mirajgaon- Karmala Tembhurni (Pkg-1) [Ghogargaon to Ahmednagar- Solapur District Border] from km. 38.775 to km. 80.390 of NH-516A	41.615	Anish Infracon India Pvt. Ltd.-GHV (India) Pvt Ltd.	629	–
242	Andhra Pradesh	6L Korlam-Kantakapalle Section of NH-130CD Road from Km 421.100 to Km 445.100 (Pkg-3)	24	PSK Infrastructure and Pvt. Ltd.	836.7	30 July 21
243	Punjab	4L of Amritsar-Ghoman - Tanda - Una Section from Km 8.270 to Km 54.000 of NH-503A (Package-1)	45.73	Chetak Enterprises Pvt Limited	552.64	–
244	Punjab	6L Amritsar-Bathinda Greenfield section from village Tiba on NE-5A to jn. with Moga Jalandhar road (NH-703) near Dharamkot from km 0.000 to km 39.000 of NH-754A (Pkg-1)	39	G R Infraprojects Limited	927	–
245	Maharashtra	Vadodara Mumbai Expressway (Talasari to Karvad) (Phase IB-Pkg X)[km 103.400 to Km 128.000]	24.6	Roadway Solutions India Infra Ltd	980	–
246	Haryana	Delhi-Amritsar-Katra Expressway (Phase-I Pkg-V) from Junction with Ambala-Kaithal-Hissar road (NH-152) near Kharak Pandwa village to Junction with Patiala-Samana-Patran road (SH-10) near Ghagga village (Km 120+250 to Km 157+920)	37.67	CDS Infra Projects Limited	1260.8	–

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
247	Punjab	4/6L Greenfield Ludhiana-Rupnagar highway from Jn. with NE-5 village near to Manewal(Ludhiana) to Jn. with NH-205 near Bheora Village (Rupnagar) from Km. 0.00 to Km. 37.7 including spur to Kharar with Ludhiana bypass of NH-205K (Pkg-1)		G R Infraprojects Limited	951	21 February 22
248	Andhra Pradesh	6L Aluru-Jakkuva Section of NH-130CD Road from km 365.033 to km 396.800 (Pkg. 1)	31.767	H.G. Infra Engineering Limited	1060.11	–
249	Kerala	Kottankulangara- Start of Kollam Bypass		Vishwa Samudra Engineering Pvt. Ltd.	1185.27	07 September 21
250	Maharashtra	Vadodara Mumbai Expressway (Phase II Pkg-XV) (km 20.200 to km 43.000 of Spur) (Akloli-Amne)	22.8	Agroh Infrastructure & Developer Private Limited	944.47	–
251	Tamil Nadu	Bangalore Chennai Expressway Phase-III-Package II (Walajahpet to Arakkonam) from Km 180.000 to Km 204.500	24.5	KCC Buildcon Pvt. Ltd.	779.74	–
252	Odisha	6L Greenfield Kaliagura-Baunsaguar Section of NH-130-CD Road from km 249+000 to km 293+000 (Package-OD-5)		H.G. Infra Engineering Limited	1492.11	–
253	Andhra Pradesh	Development of Six Lane Chittoor-Thatchur Highway Veera Kaveri Raja Puram to Pondavakkam from km 61.380 to km 96.040 of NH 716B (Pkg-III)	34.66	KNR Constructions Limited	1102.63	–
254	Karnataka	Bangalore Chennai Expressway Phase-III-Package I (Gudipala to Walajajhpet) from Km 156.000 to Km 180.000	24	Montecarlo Limited	1104.46	–
255	Andhra Pradesh	6L of Chittoor-Thatchur (Varadarajulu to Kumarajapet) from km 0.000 to km 43.800 of NH-716B (Pkg-1)	43.8	KCC Buildcon Pvt. Ltd.	1324	31 August 21

(continued)

Table 4.3 (continued)

S. No.	State	Project Name	Length	Private Sector Developer	Awarded Cost	Date
256	Odisha	6L Kantakapalle-Sabbavaram Section of NH-130CD Road from Km 445.100 to Km 464.662 (Pkg-4)	19.562	NKC Projects Private Limited	824	–
257	Rajasthan	2 lanes with paved shoulder from Sriganganagar to Raisinghnagar (Pkg-1) in the State of Rajasthan		VRC SR Highways Private Limited	644.61	–
258	Odisha	6L Greenfield Baunsaguar - Baraja Section of NH-130-CD Road from km 293+000 to km 338+500 (Package-OD-6)	45.5	H.G. Infra Engineering Limited	1123.11	–
259	Tamil Nadu	6L of Pondavakkam to Kannigaipair from km 96.040 to km 116.100 of NH 716B (Pkg-IV)	20.06	IRB Infrastructure Developers Ltd.	909	–

Source Author research, publicly available information

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Project Finance and Secondary Market Transactions

5

Project finance is a limited or non-recourse financing structure available for companies delivering long-term infrastructure projects where is the debt and equity used to finance the project are paid back from the cash flow generated by the project. Hence, project financing is a loan structure that relies on the cash flows from a particular project for repayment and the loan is collateralized using the assets rights and interests held by the SPV delivering such project.

This chapter provides an understanding of key financing considerations for a HAM based road PPP projects in country and gives a review of review of the financing of different projects by various commercial bands, along with indicative financing terms such as project tenor, interest rate/margins, key debt covenants etc.

There have been a large number of secondary market transactions (i.e., acquisitions) for HAM based road PPP projects. Both local and international investors (including infrastructure funds, pension funds and large corporates) have shown interest to acquire such projects; as well as the private sector developers have shown interest to sell these projects once they have reached Commercial Operation Date (CoD). This chapter provides a list of such transactions and a profile of few major investors who are very active in the secondary market Based on publicly available information.

5.1 Project Finance—Introduction

5.1.1 Special Purpose Vehicle (SPV)

Project finance, also known as non-recourse lending, essentially relies on the future cash flows from a specific infrastructure project for debt service rather than recourse on borrower's financials. Typically, for project finance transactions, sponsors/shareholders would need to form of a stand-alone project company or a special purpose vehicle (SPV) which will enter into a PPP agreement with the government

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for the infrastructure project delivery. Same is the case with HAM based road PPP projects in India wherein a SPV is established for each project won by the private sector. In this chapter, the typical contractual structure for such SPV has been discussed.

Such SPV will have a pre-defined life which is equal to duration of the concession agreement (equal to 15–17 years in case of HAM based road PPP projects, as the case maybe). The sponsors are the only shareholders of the project company and their exposure is limited to the amount of equity investment that has been made in the project. Lenders will perform a detailed due-diligence process for non-recourse debt finance since there is no past operating history of such SPVs, and such due-diligence is necessary to get requisite bank credit committee approvals.

5.1.2 Lender Due-Diligence Process

As part of debt provider's due-diligence process, the lenders will examine the technical and financial feasibility of the project, and review of sponsor capability (including past experience of sponsor/shareholder/borrower to implement and operate similar projects).

The technical feasibility of the project is examined to ascertain below[1]:

- Project can be constructed within the proposed schedule and within budget;
- Once completed, the project will be able to operate at the planned capacity; and
- Construction cost estimates, along with the contingencies for various scenarios, will prove adequate for the completion of the project.

In evaluating the technical feasibility, it is necessary to take into account the external factors for construction or operation of the project (such as legal, policy, regulations, environmental factors) on the construction of the proposed facilities and/or operation of the constructed facilities. When the technological processes and/or design envisaged for the project are either unproven or on a scale not tried before, there will be a need to verify the processes and optimize the design as part of evaluating the project's technical feasibility.

The financial viability of the project is assessed by determining whether the net present value (NPV) is positive. NPV will be positive if the expected present value of the free cash flow is greater than the expected present value of the construction costs. However, in addition to or in lieu of the NPV, lenders will use debt ratios such as the Debt Service Cover Ratio (DSCR) and Life Loan Cover Ratio (LLCR) as the main ratios to measure bankability of a project.

On the basis of the projected cash flows of the SPV, including the debt profile under analysis, lenders will determine the debt amount and term of providing such debt finance.

[1] *Source: APMG International*.

Box: Lenders' Due-Diligence Process—Role of Model Concession Agreement (MCA)

To ensure project bankability, standardized concession contracts (like the Model Concession Agreement (MCA) for HAM based road PPP projects in India) has an important role to play. In determining financial viability and related to the reliability of cash flows and the guarantees offered by the contract (especially termination provisions), the lenders will analyze the risk structure of the concession contract. So, if there are standardized concession contracts which have been prepared through stakeholder discussions and are bankable, the financial close is relatively easier for such projects.

5.2 Financial Close for HAM Based Road PPP Projects in India

As per the model concession agreement, HAM projects must achieve financial closure within 150 days of signing the concession agreement. The financial close process for such HAM based road PPP projects has seen mixed response, and the reasons are elaborated in this section.

5.2.1 The Positives

Commercial banks in India had a positive response to provide debt to HAM based projects primarily due to two reasons:

- The concessionaire gets 80% land upfront while the concession period is linked to the commercial operations date (COD) and not to the date of concession agreement (signing date) or to the date of 80% land availability (appointed date). In another words, the land acquisition period and the construction period are essentially excluded from the annuity. Hence, the construction overrun and time overrun risks as well as land acquisition risks are mitigated.
- As net equity injection by the developer is minimized, the non-availability of funds from the concessionaire is unlikely to hinder the construction progress.

5.2.2 The Hurdles

There have also been multiple instances of financial closure delays in case of HAM based road PPP projects primarily due to below reasons:

- A number of HAM projects have been won by new entrants in the market (erstwhile EPC players) who are have little or no experience in project financing. Further, such players have no past experience as developers and primarily have done work as contractors. So, such players find it difficult to get the bank credit committee approvals for non-recourse debt finance. The average or low credit ratings of such small and medium developers limits their capability to raise debt.
- Some of the new entrants have also bid aggressively to win HAM projects; however, upon lenders' due-diligence, the cash flows from the project do not support minimum debt covenants due to such aggressive bidding. Further, many of the existing developers of HAM projects are over-leveraged and do not have the bandwidth to take additional loads.

In authors' view, the risk allocation framework for HAM based road PPP projects as per the model concession agreement is robust and bankable. Due to this reason, established developers and larger players have not faced any major issues in achieving financial closure for projects on a non-recourse basis. As the new players gain experience and are able to showcase capability for delivering such projects, the financial closure process would ease as well.

5.2.3 Updates to Model Concession Agreement in November 20

The Ministry of Road Transport and Highways (MoRTH), vide office memorandum dated 10 November 20, introduced a series of changes to Model Concession Agreement (MCA) for PPP projects tendered in the roads sector in India under the Hybrid Annuity Model (HAM). These changes have improved the bankability of the projects since a number of comments were incorporated in consultation with the industry experts and financial institutions.

A couple of key changes have been listed in Table 5.1 in this section since they led to an improvement in project bankability, had a positive impact the financial close process and led to increased secondary market transactions for HAM based road PPP projects in India.

5.2.4 Commercial Banks

Given below is a list of select HAM based road PPP projects which have achieved financial close in FY 2020 and FY 2021, along with a list of banks who have provided debt financing for such projects (Table 5.2).

Table 5.1 HAM PPP concession agreement—enhancement in bankability

Clause	Erstwhile provision in MCA	Updated provision w.e.f. 10 November 20	Impact
Interest Rate for Annuity Payments during Operation period	Interest due and payable on the reducing balance of Completion Cost (due to Annuity payments during operation period) shall be equal to the applicable Bank Rate plus 3%. Bank Rate is rate of interest specified by Reserve Bank of India as per section 49 of the Reserve Bank of India Act, 1934 or any replacement thereof.	Interest due and payable on the reducing balance of Completion Cost (due to Annuity payments during operation period) shall be equal to average of 1-year MCLR of top 5 scheduled commercial banks plus 1.25%. The government authority shall declare the list of top 5 scheduled commercial banks on 1st September every calendar year based on the balance sheet size as declared in their annual reports.	This change is very positive development as per long time demand of this industry. Since the interest payment by developers on commercial debt is based on MCLR of the commercial bank, this move would help to mitigate the mismatch between the interest inflow and outflow for the developers during the operation period.
Change in Ownership	Private concessionaire required to hold minimum 26% of issued and paid-up equity during construction period and 2 years thereafter	Private concessionaire required to hold minimum 26% of issued and paid-up equity during construction period and 6 months thereafter.	This change is beneficial especially for EPC players who have a strong project development capability; and would prefer to exit the project post commissioning to continue to build other such road projects. This will give a boost to the number of secondary market transactions.

5.2.5 Development Finance Institutions (DFIs)

HAM based road PPP projects have been supported by Development Finance Institutions (DFIs) or multilateral banks, most notably the Asian Development Bank (ADB). Such support is primarily to the governments of various states in India to support nodal government authorities of HAM based road PPP projects to fulfill their obligation of annuity payments to concessionaire during construction and operation period.

Table 5.2 List of commercial banks—Debt finance for HAM PPP projects

Project Name	State	Financial Close Date	Transaction Loan Amount (USD MN)	Lenders/Commercial Banks
Upgradation of 58Km Lane between Dhangaon and Boregaon PPP	Madhya Pradesh	June 21	37.00	• Punjab & Sind Bank • Axis Bank
Two Laning Of Meensurutti To Chidambaram Section Of NH-227 PPP	Tamil Nadu	May 21	35.36	• Sumitomo Mitsui Banking Corporation (SMBC) • HSBC
Meerut - Nazibabad 53.95Km Highway	Uttar Pradesh	March 21	71.00	• Axis Bank
Upgradation of Repallewada to Telangana/Maharashtra Border 52.6Km Highway PPP	Maharashtra Telangana	February 21	46.30	• Punjab National Bank (PNB)
Upgradation of 27.5Km from Gandeva to Ena Stretch PPP	Gujarat	January 21	101.82	• Union Bank of India
Jagdishpur - Faizabad 60Km Highway PPP	Uttar Pradesh	January 21	76.41	• HDFC
Upgradation Of Unnao-Lalganj Section NH 232 PPP	Uttar Pradesh	January 21	86.24	• Union Bank of India
Mitrasen - Kanpur 60Km Highway PPP	Uttar Pradesh	December 20	105.88	• Axis Bank
Naviganj - Mitrasen Pur Highway PPP	Uttar Pradesh	December 20	126.14	• HDFC • State Bank of Mauritius • Union Bank of India
Solapur-Bijapur NH-13 (New NH-52) Highway Section PPP	Karnataka Maharashtra	September 20	160.00	• HSBC • Standard Chartered Bank • United Overseas Bank (UOB) • Axis Bank
Mumbai-Pune Expressway PPP (Formerly Yashwantrao Chavan Expressway) New Concession (2020)	Maharashtra	June 20	868.58	• State Bank of India • Union Bank of India
Oddanchatram-Madathukulam 45.4Km Highway PPP	Tamil Nadu	May 20	41.71	• Axis Bank
Ashoka Ankleshwar Manubar Expressway	Gujarat	December 19	84.21	• United Bank of India (UBI) • India Infrastructure Finance Company Ltd • Axis Bank

(continued)

Table 5.2 (continued)

Project Name	State	Financial Close Date	Transaction Loan Amount (USD MN)	Lenders/Commercial Banks
Four Laning of Ausa-Chakur Section of NH 361 Project	Maharashtra	March 19	58.60	• Yes Bank
Churhat Bypass PPP	Madhya Pradesh	October 18	38.51	• Canara Bank

Source Author research, publicly available information

Box: ADB's Support for Madhya Pradesh Road Sector Project (2019)

Aware of the critical necessity of upgrading its road infrastructure to meet connectivity requirements as also to cope with the steady increase in vehicular growth over 10% annually, the Government of Madhya Pradesh (GOMP) chalked out a road sector master plan for 2013–2033. The plan envisions connecting all regional and district headquarters by two lane roads and connecting all villages by all-weather roads.

The ADB-supported $490 million Public-Private Partnership (PPP) in Madhya Pradesh Road Sector Project, approved in November 2019, aligns with the GOMP's long-term road strategy. The project will improve transport connectivity in the state by rehabilitating and upgrading about 1600 km of newly declared state highways and single-lane major district roads (MDRs) to two-lane widths.

This is the sixth ADB loan to the state's road sector since 2002. The previous five loans have helped develop about 7300 km road length in the state. However, this is the first loan by ADB to the Madhya Pradesh government which adopts a hybrid-annuity model (HAM) compared to BOT models supported in the past by ADB in the state.

The scope of the project includes:

- upgrade 750 km of newly declared state highways to two-lane widths,
- upgrade 850 km of single-lane and/or deteriorated MDRs to two-lane widths, and
- improve HAM implementation capacity and road asset maintenance and management.

All project roads will be surfaced with asphalt concrete instead of the existing double bituminous surface treatment. The project will be implemented as a PPP adopting the contract modality of HAM.

Table 5.3 List of development finance institutions—financing support for HAM PPP projects

Transaction Name	Government Authority	Support Provided (USD MN)	Transaction Month, Year
Madhya Pradesh Road Development PPP	Government of Madhya Pradesh	490	November 19
Maharashtra Rural Roads Upgrade	Government of Maharashtra	200	August 19
Bihar State Roads Upgrade (230 km)	Bihar State Road Development Corp. Ltd	200	October 18
Karnataka Highways Upgrade (420 km)	Government of Karnataka	346	August 18
Karnataka Highways Upgrade (420 km) Additional Facility	Government of Karnataka	251	August 18

Source Author research, publicly available information

ADB will assist MPRDC in increasing private sector involvement and financing to leverage government financing for the project. Hand-holding support will be provided through capacity building of the agency's engineers, consultants and contractors.

To ensure closer monitoring of road infrastructure and timely repairs, the project will develop an e-maintenance asset management system for state highways and MDRs. The system will include a software that can record the location, types of defect or maintenance required. An online module on the MPRDC website will enable the public to inform the agency of road defects for necessary action.

Source Asian Development Bank

Table 5.3 provides a list of project in the last 5 years wherein the various state governments of India have been supported by ADB for implementation of HAM based road PPP projects.

5.3 Emerging Trend—Acquisitions/Secondary Market Transactions

There has been an emerging trend in terms of the acquisition of ongoing or completed HAM projects. In recent couple of years, there has been a number of secondary market activity in roads sector in India, wherein a large number of investment vehicles like pooled funds, pension funds and infrastructure investment trusts (InvIT) have acquired a majority stake in SPVs operating such HAM based PPP projects in the road sector.

Box: What Is Infrastructure Investment Trusts (InvIT)?

An Infrastructure Investment Trust (InvITs) is collective investment scheme similar to a mutual fund, which enables direct investment of money from individual and institutional investors in infrastructure projects to earn a small portion of the income as return. InvITs can be treated as the modified version of real estate investment trusts (REITs) designed to suit the specific circumstances of the infrastructure sector.

The InvIT is designed as a tiered structure with Sponsor setting up the InvIT which in turn invests into the eligible infrastructure projects either directly or via special purpose vehicles (SPVs).

An InvIT is established as a trust and is registered with the Securities and Exchange Board of India (SEBI). The InvITs are regulated by the SEBI (Infrastructure Investment Trusts) Regulations, 2014. SEBI, vide its circular CIR/IMD/DF/55/2016 dated May 11, 2016, provided the detailed guidelines for the public issue of units of InvITs.

Typically, infrastructure investment trust SEBI comprises 4 elements:

1. Trustee: Required to be registered with SEBI as debenture trustees; and required to invest at least 80% into infra assets that generate steady revenue.
2. Promoter/Sponsor(s): Typically, this is a body corporate, LLP, promoter or a company with a net worth of at least INR 100 Cr. Further, they must hold at least 25% of the total InvITs with a minimum lock-in period of 3 years or as notified by any regulatory requirement.
3. Investment manager: As a body corporate of LLP, an investment manager supervises all the operational activities surrounding InvITs.
4. Project manager: Refers to the person responsible for executing projects. However, in the case of PPP projects, it serves as an entity that also supervises ancillary responsibilities.

5.3.1 Recent Transactions

Table 5.4 provides a list of key secondary market transactions in last three (3) financial years (FY19-21) in the roads sector in India.

Though HAM projects have low financing risk, the volume of projects and consequent investment requirement puts pressure on commercial banks and financing institutions and there is a liquidity constraint, due to which it can be expected that secondary transaction will continue to grow for HAM based projects.

Table 5.4 List of secondary market transactions—HAM PPP projects

Transaction Name	Investor/Sponsor	Transaction Value (USD MN)	Transaction Month, Year
Acquisition of 15% in Indinfravit	Canada Pension Plan Investment Board (CPPIB)	136.2	May 21
Acquisition of Thorapalli - Agraharam - Jittandahalli Section	Cube Highways and Infrastructure	Undisclosed	November 20
Acquisition of stakes in 5 Dilip buildcon projects	Cube Highways and Infrastructure	Undisclosed	November 20
Essel Devanhalli PPP and Dichpally PPP Roads Sale (2020)	National Investment and Infrastructure Fund (NIIF)	201	November 20
Acquisition of 25% in Indinfravit	Allianz Capital Partners	Undisclosed	July 20
Acquisition of Navayuga Annuity Roads	Edelweiss Infrastructure Yield Plus	150	June 20
Acquisition of Highway Concessions One Platform	Caisse de depot et placement du Quebec	317.18	May 20
Acquisition of Ahmedabad Ring Road (76.31KM)	IndInfravit Trust	Undisclosed	March 20
Acquisition of Sadbhav Infrastructure Toll Roads Portfolio	IndInfravit Trust	880.12	March 20
Acquisition of 49% in IRB Infrastructure Developers Indian Toll Road Portfolio (1200KM)	Government of Singapore Investment Corporation	587.15	February 20
Acquisition of Walayar–Vadakkancherry Toll Road (53.89KM)	Cube Highways and Infrastructure	74.25	January 20
Acquisition of Tamil Nadu Highway (160KM) PPP	Cube Highways and Infrastructure	Undisclosed	August 19
Acquisition of a Stake in SBI Macquarie Infrastructure Trust Indian Road Portfolio	I Squared Capital, National Investment and Infrastructure Fund	Undisclosed	July 19
Acquisition of Ghaziabad-Aligarh Expressway (126KM)	Cube Highways and Infrastructure	255.44	May 19
Acquisition of 30% in Indinfravit	Canada Pension Plan Investment Board CPPIB	154.5	May 19
Acquisition of 13% in Bhopal – Dewas Road (140KM)	India Infrastructure Fund II	8.09	December 18

(continued)

Table 5.4 (continued)

Transaction Name	Investor/Sponsor	Transaction Value (USD MN)	Transaction Month, Year
Acquisition of Farakka-Raiganj Highway (100KM) PPP	Cube Highways and Infrastructure	51.3	September 18
Acquisition of Asian Infrastructure & Related Resources Opportunity Platform	Rohatyn Group	Undisclosed	May 18
Acquisition of 49% Stake in NH-72A & NH-73 PPPs	Welspun	36.03	January 18

Source Author research, publicly available information

5.3.2 Profile of Major Investors

This section provides a profile of key investors who have been involved in secondary market transactions to acquire HAM based road PPP projects in India.

National Investment and Infrastructure Fund
The National Infrastructure and Investment Fund (NIIF) is India's first-ever sovereign wealth fund (SWF) was set up in February 15. The primary goal of setting up NIIF was to optimize the economic impact largely through investing in infrastructure-related projects. An institution anchored by the Government of India (GoI), NIIF is a collaborative investment platform for international and Indian investors who are looking for investment opportunities in infrastructure and other high-growth sectors of the country. NIIFL invests across asset classes such as infrastructure, private equity and other diversified sectors in India.

NIIF manages around USD 4.5 BN of capital commitments across its three funds: Master Fund, Fund of Funds and Strategic Fund.

Cube Highways and Infrastructure
In 2015, I Squared and the IFC formed Singapore- based Cube Highways, Indian highways investment vehicle. Cube Highways was IFC's first investment in India's roads sector. At its establishment, IFC committed $100 million equity and I Squared $400 million. The vehicle was established for the purpose of acquiring operational road assets in India. IFC also committed to providing $150 million of debt toward potential refinancing.

In November 17, Sovereign fund Abu Dhabi Investment Authority (ADIA) acquired a minority stake in Cube Highways, without disclosing the purchase price.

Canada Pension Plan Investment Board (CPPIB)
CPPIB, operating as CPP investments, is a professional investment management organization that invests the assets of the Canada Pension Plan not currently needed to pay pension, disability, and survivor benefits.

Infrastructure is part of the fund's real assets allocation, along with real estate, infrastructure, energy and resources, and power and renewables. The group focuses on investing in lower-risk, asset-intensive business with long term returns. As of March 19, the infrastructure portfolio has 19 direct investments, consisting of 79.3% in developed markets such as North America, Western Europe, and Australia and 20.7% in emerging markets, primarily in Latin America and India.

IndInfravit Trust
IndInfravit was established by L&T Infrastructure Development Projects Limited (L&T IDPL) in March 18; and was registered as an infrastructure investment trust under the SEBI (InvIT) Regulations. L&T IDPL is the sponsor of the InvIT and the project manager for the SPVs. LTIDPL INDVIT Services Limited and IDBI Trusteeship Services Limited are the investment manager and trustee, respectively.

The key investors of the InvIT include:

- Canada Pension Plan Investment Board (CPPIB) that holds 27.9%
- Allianz Capital Partners (ACP) that holds 22.7%
- OMERS Infrastructure Asia Holdings Pte. Ltd that holds 20.0% stake
- L&T IDPL that holds 15.0%.

Part III

360° Review of Hybrid Annuity Model (HAM)

Case Study—Project Highway

6

This chapter provides an introduction to this case-study of Project Highway and a detailed list of assumptions including timeline, construction phasing, technical details, operation costs, capital structure (debt and equity assumptions), macroeconomics (inflation), tax rates etc.

The authors have used a novel case-study based approach with 100+ numerical examples throughout this part of the book to explain and discuss contractual/commercial, taxation (direct and indirect taxes) and accounting aspects of Hybrid Annuity Model (HAM).

A detailed financial model was prepared for the case study of Project Highway which was the bid financial model used for a real-life project and the values therein were subsequently modified. This financial model is used to explain the various concepts and computations in subsequent chapters in PART III of the book.

The subsequent chapters of the book would be immensely helpful for the readers who want to get a complete and a 360-degree understanding of HAM based road PPP project and would help the users to prepare the financial/cash flow projections for any project for accurate estimation of returns for developers as well as investors.

6.1 Introduction

The case study assumes an award of a national highway project in India called **Project Highway** by National Highways Authority of India (NHAI) as the government agency to a private sector player. The private sector player has incorporated a Special Purpose Vehicle (SPV) namely, **ABC Constructions Private Limited** (ACPL) who will be the Concessionaire for this Project.

Given below are the key assumptions for the Project Highway which were incorporated as part of the bid financial model by the private sector player. Basis

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
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upon this assumptions, the remaining chapters of the book provide 100+ numerical examples to explain various concepts related to Model Concession Agreement (MCA), indirect taxes, direct taxes and the accounting treatment.

Project Timeline		
Construction Start date	*dd-mm-yy*	13 November 21
Construction Period	*days*	910
Commercial Operation Date (CoD)—Target	*dd-mm-yy*	12 May 24
Operation Period	*#months*	180
Operation End Date	*dd-mm-yy*	11 May 39

Project Summary		
Estimated Project Cost (Authority Cost)	*INR Cr*	1200.00
Project Length	*km*	50.00
Bid Project Cost—Quoted (BPC)	*INR Cr*	1500.00
EPC Cost (Actual)	*INR Cr*	1200.00
O&M Cost per year—Quoted	*INR Cr*	5.00
O&M Cost per year—Actual	*INR Cr*	4.00

The detailed assumptions in the next section are categorized as below:

- Detailed Project timelines and construction milestones as per the bid document for Project Highway
- Capital Expenditure/CAPEX
- Annuity Payment milestones during construction period
- Mobilization Advance during construction period
- Capital Structure/Funding Plan
- Project finance/debt assumptions
- Revenue assumptions during operation period
- Macroeconomics.

6.2 Key Assumptions—Project Highway

This sections provides the detailed list of assumptions for the case study of Project Highway based on a detailed financial bid model prepared for a project. The assumptions have been categorized for ease of understanding of the user.

1. ***Project Timelines***—refers to key project timelines for construction and operation period for the project.

Project Timelines				
Financial Close			*#days from previous date*	
Bid Due Date	*dd-mm-yy*	15 January 21		
Date of LOA	*dd-mm-yy*	16 March 21	60	
Date of Signing CA	*dd-mm-yy*	29 April 21	44	
Date of Financial Close	*dd-mm-yy*	26 September 21	150	
Construction				
Construction Start date	*dd-mm-yy*	13 November 21	*Appointed Date*	
Construction Milestones		**Date**	**#days**	**% completion—cumulative**
Milestone 1	*dd-mm-yy*	30 August 22	290	20%
Milestone 2	*dd-mm-yy*	17 January 23	430	35%
Milestone 3	*dd-mm-yy*	4 October 23	690	75%
Milestone 4	*dd-mm-yy*	11 May 24	910	100%
Commercial Operation Date (CoD)—Scheduled	*dd-mm-yy*	12 May 24		
Commercial Operation Date (CoD)—Target		12 May 24		
Operations				
1st Annuity Payment Date	*dd-mm-yy*	7 November 24	180	
Operation Period	*#months*	180		
Concession end date	*dd-mm-yy*	11 May 39		

2. ***Capital Expenditure***—For simplicity, only EPC costs have been assumed in the case study. In a typical HAM based road PPP project, capital expenditure may include other costs such as Preoperative Expenses, Advisor and Legal Expenses, Insurance, Bank Guarantee Charges etc.

Engineering, Procurement and Construction		**Amount**
Civil and Structural Work	*INR Cr*	1200
Other Costs		
Interest During Construction—Debt	*INR Cr*	19
Initial DSRA funding	*INR Cr*	30

Operating Expenses till 1st Annuity Payment	*INR Cr*	–
Mobilization Advance Interest	*INR Cr*	–
Total	*INR Cr*	1249

3. ***Annuity Payments—Construction***—refers to the annuity payments during construction period upon achievement of specific construction milestones as per the concession agreement. Total construction payments equal to 40% of adjusted bid project cost.

Annuity Payments—Construction				
Achievement of % physical progress	%	5%	10%	20%
Payment Milestone	#	1	2	3
Payment Amount—% of BPC	%	4%	4%	4%
Payment Amount (without Price Index adjustment)	*INR Cr*	60.00	60.00	60.00
Incremental % physical progress	%	5%	5%	10%
Payment Milestone—date	*dd-mm-yy*	1 January 22	1 April 22	1 August 22

30%	40%	50%	60%	70%	80%	90%
4	5	6	7	8	9	10
4%	4%	4%	4%	4%	4%	4%
60.00	60.00	60.00	60.00	60.00	60.00	60.00
10%	10%	10%	10%	10%	10%	10%
1 December 22	1 February 23	1 April 23	1 June 23	1 September 23	1 November 23	1 February 24

4. ***Mobilization Advance***—refers to the key assumptions regarding Mobilization Advance taken by ACPL from NHAI during the construction period.

Mobilization Advance		**Installment 1**	**Installment 2**
Availed? (1 = Yes, 0 = No)	*choice*	1	1
Days from Appointed Date	*days*	25	80
Date of receipt	*dd-mm-yy*	8 December 21	1 February 22

Loan Amount—% of BPC	%	5%	5%
Loan Amount	*INR Cr*	75.00	75.00
Principal Repayment Installments	#	8	
Principal Repayment	*INR Cr*	18.75	
Interest Payment Installments	#	2	
Base Rate	%	MCLR (top 5 scheduled banks)	
Margin	%	1.25%	
Applicable Rate	%	8.50%	

5. ***Capital Structure***—refers to key assumptions regarding project funding/capital structure i.e. proportion of debt and equity upon financial close of the project.

Capital Structure			
Total Project Costs	*INR Cr*		1249
Annuity Payments—Construction	*INR Cr*		650
Project Funding Requirement	*INR Cr*		599
Debt Contribution	%	70%	419
Equity Contribution	%	30%	180

6. ***Debt finance***—refers to key debt financing assumptions (non-recourse project finance) such as tenor, base interest rates, margin, repayment profile etc.

Debt		Senior Debt
Availed? (1 = Yes, 0 = No)	*choice*	1
% of Total Debt Funding	%	100%
Loan Amount	*INR Cr*	419.23
Loan Tenor (door-to-door)	*#years*	15.50
Drawdown Start Date	*dd-mm-yy*	13 November 21
Drawdown End Date	*dd-mm-yy*	12 May 24
Grace Period (After Scheduled COD)	*days*	180
End of Grace Period	*dd-mm-yy*	7 November 24
1st Principal Repayment	*dd-mm-yy*	8 November 24
Loan Maturity Date	*dd-mm-yy*	13 May 37
Repayment Profile		Sculpted
Bullet Repayment Date	*dd-mm-yy*	13 May 37

Target DSCR	*x*	1.10
Average Cost of Debt	%	7.45%

Pricing		
Upfront Fees	%	0.00%
Commitment Fees	*% per annum*	0.00%
Interest Rates		
Base Rate	%	MCLR (top 5 scheduled banks)
Bank Rate (RBI)		
MCLR (top 5 scheduled banks)		
Margin during Construction	%	0.86%
Margin (COD)	%	0.00%
Margin (COD + 5 years)	%	0.00%
Margin (COD + 10 years)	%	0.00%
Margin (COD + 15 years)	%	0.00%
Margin (COD + 20 years)	%	0.00%
Interest Capitalisation Period		
Start Date	*dd-mm-yy*	13 November 21
End Date	*dd-mm-yy*	12 May 24

7. ***Revenue***—refers to assumptions related to annuity payments, interest thereon and O&M payments by NHAI to ACPL during the operation period of the project.

Revenue		
Annuity Payments—Operations		
Base Rate	*Choice*	MCLR (top 5 scheduled banks)
Margin	%	1.25%
Applicable Rate	%	8.50%
O&M Payments—Operations		
O&M cost per year—Quoted	*INR Cr*	5.00

8. ***Operating Expenses***—refers to assumptions for O&M expenses and Major Maintenance expenses during the operation period for the project.

Operating Expenses			
Fixed O&M		Year 1	Indexed? (1 = Yes, 0 = No)
Routine Maintenance	*INR Cr*	4.00	1
Major Maintenance			
Major Maintenance Reserve Account (MMRA)			
MMRA in Use? (1 = Yes, 0 = No)	*choice*	1	
MMRA Funding Periods	*#quarters*	12	
Interest on MMRA			
Interest Income? (1 = Yes, 0 = No)		1	
Base Rate	*choice*	MCLR (top 5 scheduled banks)	
Margin (Discount)	%	−1.50%	
Applicable Rate	%	5.75%	
MM Capex Amount, Real		**Real Amount**	**Years from CoD**
MM Capex 1	*INR Cr*	30.00	7
MM Capex 2	*INR Cr*	30.00	14

9. ***Macroeconomics***—refers to macroeconomic assumptions like inflation, escalation rates and interest rates.

Macroeconomics		
Price Index		*Annual Inflation*
Quarterly Inflation	%	4.00%
Price Index—as on bid date	#	
Price Index	#	
Opex Escalation Rates		
Escalation Period		*Annual Inflation*
Escalation Rate—O&M Costs	%	5.00%
Escalation Rate—Major Maintenance	%	5.00%
Interest Rate Curves		*Annual rates*
Bank Rate (RBI)	%	4.25%
MCLR (top 5 scheduled banks)	%	7.25%

Contract Review—Model Concession Agreement (MCA)

7

The concession agreement is cornerstone for any PPP project since this particular document provides the rights and obligations of both the government agency and the private sector/concessionaire and is the main instrument for risk allocation framework for delivery of the infrastructure project for public good. This contractual relationship is applicable throughout the life of the project (typically 15 years in case of HAM based road PPP projects) and a deep understanding of such agreement is essential for any practitioner or stakeholder who is involved in delivery of the project.

Standardization of such concession agreements help streamline the procurement process and enhance the stability of the regulatory and policy framework. A Model Concession Agreement (MCA) is available for Hybrid Annuity Model (HAM) based road PPP projects in India issued by the National Highways Authority of India (NHAI), Government of India.

This chapter provides a detailed review of key clauses of MCA, and provides numerical computations and examples based on the case study of Project Highway so that the reader understands the implication of important clauses in different scenarios This chapter would help in ease of understanding and interpretation of key terms of MCA which is very important for private sector developers who want to bid for these project and to develop long-term financial projections to understand their true returns for such project delivery.

A detailed analysis has been presented for all the clauses relevant during the construction as well as operation phase of the project including a list of recurring costs and obligations of the private sector besides the road maintenance (e.g., independent engineer renumeration, monthly reports, audited accounts etc.)

Such analysis is intended to help readers to understand the risk allocation as per the MCA, which is a base template used for all HAM based PPP projects. The existing developers, who are already in the process of constructing the awarded projects, will find it very useful to review the key clauses to be considered during operation period as summarized in this section including Annuity Payments during Operation period; O&M obligations of Concessionaire; Other costs/expenses to be borne by Concessionaire; and Reporting requirements to be met by Concessionaire.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_7

7.1 Model Concession Agreement (MCA)—Introduction

Ministry of Road Transport and Highways (MoRTH), Government of India (GoI) issued the Model Concession Agreement (MCA) for implementation of Hybrid Annuity Model (HAM) based road PPP projects first on 9.12.2016. This model concession agreement has been adopted by National Highways Authority of India (NHAI) add the various state government agencies for implementation of national highway and state highway projects, respectively.

Since its first issuance in 2016, model concession agreement has undergone few changes over the years—for example, introduction of mobilization advance via MoRTH circular dated 8.07.2016. Further in November 20, there were significant changes done to this concession agreement based on industry feedback and the issues faced by private sector developers/concessionaires in construction and delivery of such HAM based road PPP projects.

Due to the uncertainty caused by COVID-19 pandemic, developers were facing a lot of issued in cash flow cycle and working capital management during the construction period. Further, due to the reduction of bank rate by the Reserve Bank of India during 2020, there was a significant gap in the interest payments on annuity received from government agency (which were erstwhile linked to Bank Rate of RBI) and the interest payments to be made for debt service by the developers (which is often linked to the Marginal Cost of Funds based Lending Rate/MCLR of scheduled commercial banks in India).

The MCA document is divided into broad articles/sections as listed in Table 7.1.

Table 7.1 Model Concession Agreement (MCA)—List of Articles

PART	Articles/Sections
PART I—Preliminary	1. Definitions and Interpretation
PART II—The Concession	2. Scope of The Project 3. Grant of Concession 4. Conditions Precedent 5. Obligations of The Concessionaire 6. Obligations of The Authority 7. Representations and Warranties 8. Disclaimer
PART III—Development and Operations	9. Performance Security 10. Right of Way 11. Utilities, Associated Roads and Trees 12. Construction of the Project 13. Monitoring of Construction 14. Completion Certificate 15. Entry into Commercial Service

(continued)

Table 7.1 (continued)

PART	Articles/Sections
	16. Change of Scope 17. Operation and Maintenance 18. Safety requirements 19. Monitoring of operation and maintenance 20. Regulation and Management 21. Independent Engineer
PART IV—Financial Covenants	22. Financial Close 23. Payment of Bid Project Cost 24. Escrow Account 25. Insurance 26. Accounts and Audit
PART V—Force Majeure And Termination	27. Force Majeure 28. Compensation for Breach of Agreement 29. Suspension of Concessionaires Rights 30. Termination 31. Divestment of Rights and Interest 32. Defects Liability After Termination
PART VI—Other Provisions	33. Assessment Assignment and Charges 34. Change in Law 35. Liability and Indemnity 36. Rights and Title Over the Site 37. Dispute Resolution 38. Disclosure 39. Redressal of Public Grievances 40. Miscellaneous
Schedules	A. Site of The Project B. Development of The Project C. Project Facilities D. Specifications and Standards E. Applicable Permits F. Performance Security G. Project Completion Schedule H. Drawings I. Tests J. Completion Certificate K. Maintenance Requirements L. Safety Requirements M. Selection of Independent Engineer N. Terms of Reference for Independent Engineer O. Escrow Account Agreement P. Panel of Chartered Accountants Q. Vesting Certificate R. Substitution Agreement S. Procedure for Dispute Resolution Board

In the subsequent sections, the chapter provides a detailed discussion and commercial review of this model concession agreement. The provisions of various articles/sections are explained in summary; and such explanation is accompanied by numerical examples and competitions through the use of case study of Project Highway elaborated in Chap. 6 of the book. It is pertinent to mention here that the readers need to have an understanding of the case study of Project Highway so that they can understand the numerical computations (highlighted in color box) provided in this chapter; which would help the readers to develop detailed financial projections for any HAM based road PPP project.

7.2 Development and Operations

Based on the past experience of project tendered till date, the construction period for such projects typically ranges from 2 years to 2.5 years; and the operation period is 15 years for such projects. Given below are the key clauses of PART III of MCA document during construction and operations period of a HAM based PPP road project (Table 7.2).

Table 7.2 Key Articles—PART III of Model Concession Agreement (MCA) for HAM PPP projects

MCA Reference	Item	Description
Article 4	Conditions Precedent	The Authority needs to satisfy the below mentioned conditions precedent within a period of 120 days from the date of issue of notice by the concessionaire (upon payment of performance security) • Procurement of the right of way to the site for the concessionaire • Procurement of all applicable permits regarding environmental protection and conservation in respect of the land forming part of the right of way • Forest clearance for the land • Approval of general arrangement drawings for the road over bridges/under bridges at level crossings, if applicable The Concessionaire needs to fulfill the below mentioned condition precedents within 150 days from date of Agreement: • Submission of performance security to Authority • Execution of escrow agreement and substitution agreement • Procurement of applicable permits for the project • Execution of financing agreement • Delivery to the Authority a copy of financial package, financial model submitted to financial lenders • Confirmation on representations and warranties as per clause 7 of the Agreement In case of delay of such conditions precedent due to Concessionaire's fault, it will pay damages at a rate of 0.3% of performance security for each day of delay, subject to maximum limit equal to amount of bid security ***Project Highway*** *Performance security—3% of estimated project cost = 3% * 1200 = INR 36 Cr Concessionaire to pay damages at a rate of INR 10.8 lakhs for each day of delay of CPs beyond 150 days*

(continued)

Table 7.2 (continued)

MCA Reference	Item	Description
Article 9	Performance Security	• The concessionaire to provide performance security to authority within 30 days from the date of the agreement and until search performance security is provided by the concessionaire, the bid security remains in force and effect. In the event performance security is not provided within 30 days from the date of the agreement, the Authority may encash the bid security and Agreement shall be terminated. • Authority may encash performance security in event of Concessionaire default under Agreement; and Concessionaire to replenish the same within 15 days of such encashment. • Performance Security should remain in force of a period of 1 year from Appointed Date but shall be released earlier upon expense of more than 30% of bid project cost. ***Project Highway*** *Appointed Date = 13 November 21* *Bid Project Cost (BPC) = INR 1500 Cr* *Concessionaire to provide INR 36 Cr as performance security to remain in force for a period earlier of:* *– 13 November 22 (1 year from Appointed Date—13 November 21)* *– Upon expense of more than INR 450 Cr (=30% * 1500 Cr) by Concessionaire* • The concessionaire may need to provide additional performance security to the Authority if the Bid Project Cost of the selected bidder is lower by more than 10% with respect to the Estimated Project Cost (as estimated by the Authority).
Article 10	Right of Way	• The Authority shall grant vacant access and Right of Way to the extent of at least 80% of the length of the project to the Concessionaire. In the event of financial close is delayed on account of delay in grant of such vacant access and right of way, the Authority shall be liable to pay the damages to the Concessionaire (under provisions of Article 4—Conditions Precedent) • The right of way for the remaining project site to be procured by Authority within 90 days of Appointed Date and in the event of delay, the Authority shall pay damages @Re. 1 per 10 m^2 for 90 days. Post a delay of 180 days, the remaining site is removed from scope of work of concessionaire (as per Article 16—Change of Scope) ***Project Highway*** *– Authority to procure RoW for 80% of project length (i.e. 80% of 50 km = 40 km) before Appointed date i.e. 13 November 21* *– RoW for remaining 10 km within 90 days i.e. 10 February 22* • Authority is not liable for vacant plots and building; and these are deemed as right of way granted to concessionaire. Any encroachment on vacant land subsequently is responsible of Concessionaire in terms of costs and effort.
Article 11	Utilities, Associated Roads and Trees	• The concessionaire shall undertake shifting of any utility (including electric lines, water pipes and telephone cables) to an appropriate location alignment, if search utility or obstruction adversely affects the execution of works or maintenance of the project as per the Agreement. The cost of shifting of such utilities is assumed to be part of the Bid Project Cost. • The concessionaire shall execute such utilities shifting works under the supervision of utility owing agency and Independent Engineer (IE). The supervision charges only shall be paid by the authority to the utility owning entity.

(continued)

Table 7.2 (continued)

MCA Reference	Item	Description
Article 12	Construction of the Project	Project Construction: • The completion schedule of the project, along with each milestone is defined in Schedule-G of the Agreement which includes the different construction milestones as well as Scheduled Commercial Operation Date (SCOD) of the Project. • In the event that the concessionaire fails to achieve any project milestone within a period of 90 days from the date set forth Schedule-G, it shall pay damages to the authority @0.1% of the amount of performance security for each day until such project milestone is achieved. • In the event that the project is not completed, and commercial operation date (CoD) does not occur within 270 days from the scheduled completion date, the authority is entitled to terminate the Agreement ***Project Highway*** *Performance Security = INR 36 Cr* *Scheduled CoD = 12 May 24* *– Concessionaire to pay damages at rate of INR 3.6 lakhs (0.1% * 36 Cr) for each day of delay in each construction milestone* *– Authority can terminate Agreement is project not commissioned by 6 February 25 i.e. 270 days from scheduled CoD of 12 May 24* Project Maintenance during Construction Period: • Concessionaire, at its own cost, to ensure that existing/completed highway is in pothole free condition and ensure safe operation. In the event of default, the Authority may recover damages @0.2% of performance security for each day of default.
Article 13	Monitoring of Construction	Monthly progress reports: • Concessionaire to provide monthly construction progress reports, within 7 days of closing of each month to Authority and independent engineer (IE). Inspection: • During the construction period, the IE shall inspect construction each month and prepare Inspection Report; and Concessionaire shall rectify any defects identified in Inspection Report. Tests: • Concessionaire to do multiple tests as recommended by IE to check construction quality; and 50% cost of such tests, as approved by IE, will be reimbursed by Authority to Concessionaire • Any defects identified during such tests are to be rectified by Concessionaire at its own cost. Video recording: • During the construction period, the concessionaire shall provide 03 hour video recording to the Authority every calendar quarter showcasing the status and progress of construction works in that quarter.
Article 14	Completion certificate	• Concessionaire to notify IE, 30 days prior to likely completion date, so that IE can perform necessary tests required for completion as per Schedule-I. • Cost of all such tests to be borne by Concessionaire • Upon successful tests, Completion Certificate/CC (as per Schedule-J) will be issued by IE to Authority and Concessionaire • Upon request by Concessionaire, IE can issue Provisional Certificate/PC in case project can be safely put into operation, but certain works are not yet complete (such items are attached with provisional certificate as punch list). • Punch list to be completed by the Concessionaire within 90 days of issuance of such provisional certificate for the Project.

(continued)

Table 7.2 (continued)

MCA Reference	Item	Description
Article 15	Entry into Commercial Service	• Commercial Operation Date (COD) for the project is defined as date of issue of completion certificate or provisional certificate, as the case may be. • In the event that COD does not occur prior to 91st day after the Scheduled Completion Date defined in Agreement and such delay is not due to Authority default or Force Majeure, then damages are payable by Concessionaire @0.2% of Performance Security for each day of delay until COO is achieved. ***Project Highway*** *Performance Security = INR 36 Cr* *Scheduled CoD = 12 May 24* *– If concessionaire achieves all construction milestone except the last milestone, then if there is a delay of more than 90 days from scheduled CoD in such last milestone i.e. the CoD occurs post 9 August 24, Concessionaire to pay additional INR 7.2 lakhs (0.2% * 36 Cr) for each day of delay till CoD is achieved.*
Article 16	Change in Scope	• This Article of the Agreement is applicable in case there is any change in scope of work of Concessionaire i.e., reduction or addition in scope of the Project. • All costs for such Change in Scope to be agreed between Concessionaire and Authority with assistance from IE; and the same to be reimbursed to Concessionaire. Further, the Authority reserves the right to undertake additional work through open competitive bidding; and the concessionaire shall have the option to match the first ranked bidder in case of such bid process. • In case Change in Scope leads to reduction or increase in length of the project, O&M costs payable during Operation Period to be reduced or increased in same proportion.
Article 17	Operation and Maintenance	During the operation, the concessionaire shall operate and maintain the Project in accordance with the agreement either by itself, or through the O&M contractor to ensure a smooth, safe and uninterrupted use of the project. The concessioner shall ensure that at all times during the operation., the project conforms to Schedule K (Maintenance Requirements) of the Agreement. Maintenance Manual: • Concessionaire to prepare a maintenance manual in consultation with IE for regular and preventive maintenance of the project within 90 days of CoD. • Such manual to be updated every 3 years Maintenance Program: • Concessionaire to provide proposed annual program of preventive, urgent and scheduled maintenance to Authority and IE on and before CoD; and within 45 days of start of each accounting year. Project Closure and Re-opening: • Written approval required from IE (copy to Authority) for any project closure by Concessionaire • In case of delay in re-opening such closed part, Concessionaire to pay damages @0.5% of Performance Security for each day of delay till such closed part has been re-opened

(continued)

Table 7.2 (continued)

MCA Reference	Item	Description
		Damages for breach of maintenance obligations: • In case Concessionaire fails to repair or rectify any defect, it shall be considered as breach of maintenance obligations; and Authority can recover damages from Concessionaire payable for each day of delay till breach is cured. • Such damages are computed as higher of: i. 2% of Performance Security ii. 0.1% of cost of repair as estimated by IE Authority's right for remedial measures: • In case of any breach, if Concessionaire doesn't take any remedial action within 15 days of such breach, Authority can take remedial action and recover from concessionaire below costs: i. Cost of repair; and ii. Additional 20% of cost as damages • The above amounts to be recovered by Authority from the Escrow Account opened as per Agreement Overriding Powers of Authority: • In case of any material breach and failure of Concessionaire to take action to rectify the same, Authority can take over performance of any or all obligations of Concessionaire • Any costs incurred by Authority shall be deemed as O&M expenses which Authority can recover from Concessionaire along with damages specified in Clause 17.9 above Modifications to the Project: • For any material modifications to the project, Concessionaire to notify IE and reasonably incorporate IE's suggestions, if any Installation and operation of CCTV • Concessionaire to install and operate CCTV as necessary for safe and secure operation of the project Advertisement on the Site • Concessionaire to ensure no commercial advertisements, hoarding on the Site of the Project
Article 18	Safety Requirements	• Concessionaire to develop, implement and administer a safety program to meet requirements of Schedule-L (Safety Requirements) of the Agreement • Concessionaire to appoint a firm to perform safety audits and to bear all costs for the same
Article 19	Monitoring of Operation and Maintenance	Monthly Status Report: • The Concessionaire to submit a monthly status stating the condition of the project including its compliance with the maintenance requirements, maintenance manual, maintenance program and safety requirements. • Such report is to be submitted within 7 days after close of each month. Monthly management report: • The Concessionaire to submit, no later than 10 days after close of each month, a monthly management report with a summary of below items: a) Performance indicators achieved b) Operational hurdles, if any c) Financial parameters Inspection: • During the operation period, the independent engineer (IE) will prepare a O&M Inspection Report each month within 7 days of such monthly inspection and send a copy to Authority and Concessionaire.

(continued)

Table 7.2 (continued)

MCA Reference	Item	Description
		Test: • IE shall require Concessionaire to carry out certain tests, according to Good Industry Practice, to determine if project conforms to maintenance requirements • 50% cost of such tests, after certification from IE, shall be reimbursed by Authority to the Concessionaire Remedial measures: • In case of any rectification of breach takes more than 15 days from the breach, Concessionaire to submit a weekly remedial measures report to Authority till remedy is complete Report of unusual occurrences: • The concessionaire to submit such report. within 3 days of closing of each week and month, with a summary of below items: a) Death or injury to any person b) Damage of equipment c) Damage or obstruction on the Project d) Smoke, fire, flooding etc.
Article 20	Regulation and Management	Police Assistance and recurring expenditure: • Authority will assist Concessionaire to procure police assistance for regulation of project as per applicable laws • Concessionaire to construct, at its own cost, buildings for traffic aid posts as required 60 days prior to CoD • Recurring expenditure for operating cost of one police vehicle; along with operating costs (fuel, salaries and allowance of chauffeur) to be borne by Concessionaire Medical Aid Posts and recurring expenditure • Medical aid-posts required for providing emergency medical-aid during operation period • Concessionaire to construct, at its own cost, an aid post building and 2 residential quarters 30 days prior to CoD and hand them over to Authority • Below recurring expenditure on medical aid posts to be borne by Concessionaire a) Operating cost of one ambulance; along with operating costs (fuel, salaries and allowance of round-the-clock chauffeurs) b) Actual expenditure every year made by State Medical Department on medical equipment, pay and allowances of 2 medical personnel deployed for Medical Aid Posts c) Maintenance expenses of Medical Aid Post buildings
Article 21	Independent Engineer	Independent Engineer remuneration: • Authority will appoint a engineering consulting firm as IE within 60 days of the Agreement • Concessionaire shall reimburse 50% of remuneration, costs and expenses of the IE to Authority within 15 days of receiving a statement of expenditure from Authority

7.3 Financial Covenants

Given below are the key clauses of PART IV of MCA document during construction and operations period of a HAM based PPP road project. Detailed numerical computations are included to explain each article/section herein.

MCA Reference	Item	Description
Article 22	Financial Close	Financial Close: • The concessionaire to achieve financial close for an amount not lower than either: – Total Project Cost; or – 10% less than (Estimated Project Cost minus 40% of Bid Project Cost) ***Project Highway*** *Bid Project Cost = INR 1500 Cr* *Estimated Project Cost = INR 1200 Cr* *– Total Project Cost = 60% of Bid Project Cost = 60% * 1500 Cr = INR 900 Cr* *– 10% less than (Estimated Project Cost − 40% of Bid Project Cost)* *= (1200 − 40% * 1500) * (1–10%)* *= (1200 − 600) * 90%* *= INR 540 Cr* *Minimum amount of financial close (total debt and equity financing) is lower of the above two amounts = INR 540 Cr* • Concessionaire to achieve Financial Close of the project within 150 days of Agreement
		Project Highway *– Date of signing of concession agreement = 29 April 21* *– Financial close to be completed by 26 September 21 (150 days from 29 April 21)* • In event of delay beyond 150 days, Concessionaire is entitled to additional 120 days, subject to payment of damages to Authority @0.05% of performance security for each day of such delay. In event of delay beyond 270 days, Concessionaire may be granted additional 95 days, subject to payment of damages to Authority @0.1% of performance security for each day of such delay. • In case Financial Close does not occur even after additional periods, the Agreement shall stand terminated and Authority will encash the bid security to appropriate the proceeds as damages ***Project Highway*** *For delay beyond 26 September 21,* *– Concessionaire to pay damages of INR 3 lakhs for each day of delay till 120 days; and* *– INR 6 lakhs for additional 95 days.* *In case of further delay, the Authority can terminate Agreement and encash bid security of INR 8 Cr*

<table>
<tr><th>MCA Reference</th><th>Item</th><th>Description</th></tr>
<tr><td>Article 23</td><td>Payment of Bid Project Cost—<u>Construction Period</u></td><td>
Adjusted Bid Project Cost:
• Bid Project Cost shall be adjusted for Price Index Multiple (PIM) every month which refers to the change in Reference Index from the bid submission date
• Reference Index comprises of 70% WPI and 30% CPI

<u>Project Highway</u>
– Price Index = 4% as per case study assumption.

Payment of Bid Project Cost:
• 40% of such adjusted Bid Project Cost is payable to Concessionaire in 10 equal installments of 4% each during the Construction Period
• The remaining 60% of adjusted Bid Project Cost, shall be due and payable in 30 biannual installments commencing from the 180th day of COD during the operation period.
Payment during Construction period:
• Total 10 payment milestones during construction period; and 4% of Bid Project Cost (adjusted for Price Index Multiple) paid by Authority to the Concessionaire upon achievement of each milestone.

<table>
<tr><th>Payment Milestone</th><th>Description</th></tr>
<tr><td>1</td><td>On achievement of 5% Physical Progress</td></tr>
<tr><td>2</td><td>On achievement of 10% Physical Progress</td></tr>
<tr><td>3</td><td>On achievement of 20% Physical Progress</td></tr>
<tr><td>4</td><td>On achievement of 30% Physical Progress</td></tr>
<tr><td>5</td><td>On achievement of 40% Physical Progress</td></tr>
<tr><td>6</td><td>On achievement of 50% Physical Progress</td></tr>
<tr><td>7</td><td>On achievement of 60% Physical Progress</td></tr>
<tr><td>8</td><td>On achievement of 70% Physical Progress</td></tr>
<tr><td>9</td><td>On achievement of 80% Physical Progress</td></tr>
<tr><td>10</td><td>On achievement of 90% Physical Progress</td></tr>
</table>

<u>Project Highway</u>
Payments to be made by Authority for each payment milestone is provided in the table below:

<table>
<tr><th>Milestone</th><th>Construction progress</th><th>Price Index Multiple (PIM)</th><th>Adjusted Bid Project Cost as per PIM</th><th>Payment by Authority to Concessionaire</th></tr>
<tr><td>#</td><td>%</td><td></td><td>(INR Cr)</td><td>(INR Cr)</td></tr>
<tr><td>A</td><td></td><td>B</td><td>D = 1500 * B/100</td><td>D = 4% * C</td></tr>
<tr><td>1</td><td>5%</td><td>104.00</td><td>1560.00</td><td>62.40</td></tr>
<tr><td>2</td><td>10%</td><td>105.02</td><td>1575.37</td><td>63.01</td></tr>
</table>
</td></tr>
</table>

MCA Reference	Item	Description				
		3	20%	106.06	1590.89	63.64
		4	30%	107.10	1606.57	64.26
		5	40%	108.16	1622.40	64.90
		6	50%	109.23	1638.39	65.54
		7	60%	109.23	1638.39	65.54
		8	70%	110.30	1654.53	66.18
		9	80%	111.39	1670.83	66.83
		10	90%	112.49	1687.30	67.49
		Total				**649.79**
		Bonus on early completion • In case COD is achieved 30 days prior to scheduled completion date, Authority will pay Concessionaire a bonus @0.5% of 60% of Bid Project Cost for first 30 days by which CoD precede the scheduled completion date and thereafter, such bonus is calculated on pro-rata basis for each day preceding the 30 days' period. ***Project Highway*** *Illustrative computations of Early Payment Bonus under different scenarios is provided below:*				
		Scenario	**CoD date**	**Number of days of early completion**	**Bonus payable by Authority**	
		A	**B**	**C = (12 May 24) – B**	**D = (C/30) * (0.5% * 60% * 1500) only if C >= 30, else NIL**	
		1	15 April 24	27	–	
		2	1 April 24	41	6.15	
		3	15 March 24	58	8.70	

<table>
<tr><th>MCA Reference</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>Mobilization Advance:
• Authority shall, upon request, make an advance payment of maximum 10% of Bid Project Cost to Concessionaire (Mobilization Advance) in 2 equal installments in the following manner:
i. First installment can be requested at any time after Appointed Date, after furnishing a bank guarantee by Concessionaire
ii. Second installment can be requested at any time 60 days after Appointed Date, after furnishing a bank guarantee by Concessionaire
• Rate of interest on Mobilization Advance shall be Equal to the average of 1 year MCLR of top five scheduled commercial banks[a] plus 1.25%, compounded annually
• The Mobilization Advance to be recovered by Authority in 8 equal installments from each of the payments during construction period; and the interest shall be recovered from the 9th and 10th installments.
<u>Project Highway</u>
Bid Project Cost = INR 15000 Cr
1 year MCLR of top 5 scheduled commercial banks = 7.25%
• Mobilization Advance amount
= 10% * 1500 Cr = INR 150 Cr
• Applicable Interest Rate = 1 year MCLR + 1.25%
= 7.25% + 1.25% = 8.50% per annum</td></tr>
<tr><td>Article 23</td><td>Payment of Bid Project Cost—<u>Operation Period</u></td><td>Annuity Payments during Operation Period:
• The Completion Cost for the project to be computed based on adjustment of Bid Project Cost (as per applicable escalations in Price Index Multiple applicable) at time of each of the 10 construction milestones and upon COD.
<u>Project Highway</u>
Calculation of Completion Cost
<table>
<tr><th>% of Bid Project Cost to be adjusted</th><th>Amount of Bid Project Cost to be adjusted</th><th>Price Index</th><th>Completion Cost Computation</th></tr>
<tr><td>(%)</td><td>(INR Cr)</td><td></td><td>(INR Cr)</td></tr>
<tr><td>A</td><td>B = A * 1500</td><td>C</td><td>D = B * C/100</td></tr>
<tr><td>5%</td><td>75</td><td>104.00</td><td>78.00</td></tr>
<tr><td>5%</td><td>75</td><td>105.02</td><td>78.77</td></tr>
<tr><td>10%</td><td>150</td><td>106.06</td><td>159.09</td></tr>
<tr><td>10%</td><td>150</td><td>107.10</td><td>160.66</td></tr>
<tr><td>10%</td><td>150</td><td>108.16</td><td>162.24</td></tr>
<tr><td>10%</td><td>150</td><td>109.23</td><td>163.84</td></tr>
<tr><td>10%</td><td>150</td><td>109.23</td><td>163.84</td></tr>
</table></td></tr>
</table>

MCA Reference	Item	Description

10%	150	110.30	165.45
10%	150	111.39	167.08
10%	150	112.49	168.73
10%	150	113.59	170.39
Completion Cost			**1,638.09**

- Since a part of this Completion Cost is already paid by Authority to Concessionaire during construction, remaining cost to be paid by Authority in biannual installments over a period of 15 years

Project Highway

Calculation of Completion Cost due

Completion Cost (INR Cr)	A	1,638.09
Completion Cost paid	B	649.79
Completion Cost due (payable as annuity during operation period)	**C = A − B**	**988.30**

- The completion cost remaining to be paid shall be due and payable in BI annual installments over a period of 15 years commencing from COD (**Annuity Payments**)
- The first such annuity payment shall be paid after 180 days of CoD; and the Remaining installments shall be due and payable within 15 days of completion of each successive months (**Annuity Payment Date**).
- The schedule of annuity payments (as a % of remaining Completion Cost) is provided below.

Installment	Annuity (as % of Completion Cost due)
1	2.10%
2	2.17%
3	2.24%
4	2.31%
5	2.38%
6	2.45%
7	2.52%
8	2.60%
9	2.68%

MCA Reference	Item	Description	
		10	2.76%
		11	2.84%
		12	2.93%
		13	3.02%
		14	3.11%
		15	3.20%
		16	3.30%
		17	3.40%
		18	3.50%
		19	3.61%
		20	3.72%
		21	3.83%
		22	3.94%
		23	4.06%
		24	4.18%
		25	4.25%
		26	4.25%
		27	4.44%
		28	4.71%
		29	4.75%
		30	4.75%

- Interest Shall be due and payable on the reducing balance of completion costs at an interest rate equal to average of 1 year MCLR of top five scheduled commercial banks[b] plus 1.25% . Such interest shall be due and payable biannually along with each installment.

Project Highway

Interest Rate payable = 1 year MCLR + 1.25%

= 7.25% + 1.25% = 8.50% per annum

Calculation for the semi-annual payments is shown in the table below.

Installment	**Annuity**	**Annuity Amount**	**Outstanding amount for Interest computation**	**Interest**
#	**%**	**(INR Cr)**	**(INR Cr)**	**(INR Cr)**
A	**B**	**C**	**D**	**E = (D * 8.50%)/2**
1	2.10%	20.75	967.55	53.19
2	2.17%	21.45	946.10	40.89

MCA Reference	Item	Description				
		3	2.24%	22.14	923.96	40.21
		4	2.31%	22.83	901.14	39.05
		5	2.38%	23.52	877.61	38.30
		6	2.45%	24.21	853.40	37.09
		7	2.52%	24.91	828.49	36.27
		8	2.60%	25.7	802.80	35.21
		9	2.68%	26.49	776.31	34.12
		10	2.76%	27.28	749.04	32.81
		11	2.84%	28.07	720.97	31.83
		12	2.93%	28.96	692.01	30.47
		13	3.02%	29.85	662.16	29.41
		14	3.11%	30.74	631.43	27.99
		15	3.20%	31.63	599.80	26.84
		16	3.30%	32.61	567.19	12.75
		17	3.40%	33.60	533.59	23.97
		18	3.50%	34.59	498.99	22.93
		19	3.61%	35.68	463.32	21.09
		20	3.72%	36.76	426.55	19.91
		21	3.83%	37.85	388.70	18.03
		22	3.94%	38.94	349.76	16.70
		23	4.06%	40.13	309.64	14.78
		24	4.18%	41.31	268.32	13.23
		25	4.25%	42.00	226.32	11.34
		26	4.25%	42.00	184.32	9.73

MCA Reference	Item	Description

27	4.44%	43.88	140.44	7.79
28	4.71%	46.55	93.89	6.03
29	4.75%	46.94	46.94	3.97
30	4.75%	46.94	0.00	2.02
Total		**988.30**		**737.97**

O&M Payments:

- Lump sum O&M Payments is payable by Authority as per the submitted bid by Concessionaire and reflected in the Agreement, adjusted for inflation as per Price Index Multiple on the Reference Date preceding the due date of payment.
- Any O&M expenses beyond such O&M Payments to be borne solely by Concessionaire

Project Highway

Computation of O&M Costs during the Operation Period is provided below:
Price Index as on Bid-date = 100
First Year O&M cost quoted by the bidder = INR 5 Cr

O&M Payment Number	Price Index Multiple	O&M Payment Amount
#	#	(INR Cr)
A	B	C = B * 5/100/2
1	115.84	2.90
2	118.14	2.95
3	120.48	3.01
4	122.86	3.07
5	125.30	3.13
6	127.78	3.19
7	130.31	3.26
8	132.89	3.32
9	135.52	3.39
10	138.21	3.46

MCA Reference	Item	Description		
		11	140.94	3.52
		12	143.73	3.59
		13	146.58	3.66
		14	149.48	3.74
		15	152.44	3.81
		16	153.95	3.85
		17	156.99	3.92
		18	160.10	4.00
		19	163.27	4.08
		20	166.51	4.16
		21	169.80	4.25
		22	173.17	4.33
		23	176.60	4.41
		24	180.09	4.50
		25	183.66	4.59
		26	187.30	4.68
		27	191.01	4.78
		28	194.79	4.87
		29	198.65	4.97
		30	202.58	5.06
		Total		**116.47**

MCA Reference	Item	Description
Article 25	Escrow Account	• Concessionaire to establish an Escrow Account prior to the Appointed Date and maintain the same during concession period • Deposits in Escrow Account comprise: i. All debt and equity funds for the project ii. All revenues from the project including any rentals, deposits, insurance proceeds etc. iii. All payments by Authority • Waterfall/order of Withdrawal from Escrow Account as below: i. Taxes due and payable for the Project ii. Construction Payments/expenses iii. O&M expenses (concessionaire and Authority) iv. Any amounts due to Authority v. Debt service vi. Damages payable to Authority vii. Debt service for senior debt viii. Reserve requirements ix. Balance, if any, to be distributed as per instructions from concessionaire
Article 26	Insurance	• Concessionaire to effect and maintain, at its own cost, during the Construction and Operation Period, such insurance as per Good Industry Practice including below items: i. Property loss/damage insurance ii. Third Party liability iii. General liability iv. Workmen's compensation v. Any other insurance deemed necessary by concessionaire to protect it and its employees • Concessionaire shall provide detailed information about the planned insurance 45 days prior to start of construction or operation period, as the case may be • Within 15 days of obtaining insurance cover, Concessionaire to submit notarized true copies of insurance certificates to Authority • In case Concessionaire doesn't procure the required insurance, Authority can choose keep in force all necessary insurance and recover cost of all premiums from Concessionaire
Article 27	Accounts and Audit	Audited Accounts: • Concessionaire to submit below accounts to Authority a) Audited accounts, within 180 days from close of Accounting year b) Quarterly financials (unaudited), within 30 days of close of each quarter of Accounting Year • On or before 31st May of each year, a statement (audited by Statutory Auditors) with a summary of revenues from Project and any other information reasonably enquired by Authority Appointment of Auditors: • Concessionaire shall appoint statutory auditors for the project from a mutually agreed list (between Concessionaire and Authority) of 5 reputable chartered accountants (Panel of Chartered Accountants) • Concessionaire to bear all fees and expenses of such auditors Certification of claims by Statutory Auditors: • Any claim or document provided by the concessionaire to the authority in connection with or relating to receipts, income, payments, costs, expenses, accounts or audit, and any matter incidental thereto shall be valid and effective only if certified by its statutory auditors.

[a] *The Authority shall declare the list of top five scheduled commercial banks on 1st September every calendar based on the balance sheet size as declared in the annual reports. The one year MCLR are of the top five scheduled commercial banks shall be taken at the start of every quarter*

[b] *The Authority shall declare the list of top five scheduled commercial banks on 1st September every calendar based on the balance sheet size as declared in the annual reports. The one year MCL are of the top five scheduled commercial banks shall be taken at the start of every quarter*

7.4 Force Majeure and Termination

This section, along with the relevant clauses in MCA, provides a summary of different types of force majeure events, corresponding costs and its allocation among Concessionaire and Authority.

MCA Reference	Item	Description
Article 28	Force Majeure	Force Majeure: The expression force majeure or force majeure event, save and except as expressly provided otherwise, mean **occurrence in India** of any or all of non-political event, indirect political event and political event, as described below. Non-Political Event (NPE): • Covers one or more of the below events: a) Act of god, epidemic, earthquake etc. b) Strikes or boycotts interrupting supplies and services to project c) Court judgements d) Discovery of poor geological conditions, toxic contamination or archaeological remains e) Any other event of nature analogous to aforementioned events Indirect Political Event (IPE): • Covers one or more of the below events: a) Act of war, invasion etc. b) Political or economic upheaval c) Industry-wise or state-wide strikes or industrial action d) Failure of Authority to permit Concessionaire to continue construction e) Any indirect PE that causes NPE f) Any other event of nature analogous to aforementioned events Political Event (PE): • Covers one or more of the below event due to action of any government agency a) Change in law b) Compulsory acquisition of Project for national interest or expropriation c) Unlawful revocation or refusal to renew or grant any government approvals required by Concessionaire d) Any other event of nature analogous to aforementioned events Effect of Force Majeure • If Force Majeure event occurs before CoD, an extension will be granted in Scheduled Completion Date • If Force Majeure event occurs after CoD, Concessionaire is entitled to receive Annuity payments plus interest due and payable under Agreement

MCA Reference	Item	Description
		Allocation of Force Majeure Costs • Force Majeure costs to cover interest payments on debt due, O&M expenses, any increase in cost of construction due to inflation and all other costs directly attributable to Force Majeure event • Costs incurred or attributable to force majeure event to be allocated and paid as follows: a) NPE—each party to bear respective costs b) IPE—Force Majeure costs to be borne by Concessionaire to the extent of insurance cover, 50% of excess amount (above insurance cover) to be reimbursed by Authority c) PE—Force Majeure costs reimbursed by Authority Termination due to prolonged Force Majeure: • if any Force Majeure event persists for 180 days or more in a continuous period of 360 days, either party has the discretion to terminate the Agreement by issuing a 15 days' notice of such termination
Article 30	Suspension of Concessionaire Rights	Suspension upon Concessionaire Default: • Upon occurrence of a concessionaire default, the authority shall be entitled to suspend all rights of the concessionaire and exercise such rights itself and perform the obligations or authorize any other person to exercise or perform the same on its behalf during such suspension. Revocation of suspension: • In the event that authority rectifies or removes the cause of suspension within a period not exceeding 90 days from the date of suspension, it shall revoke the suspension and restore all rights of the concessionaire • Upon the concessioner having cured the concessional default within a period not more than 90 days from the date of suspension, authority shall revoke the suspension forthwith and restore all the rights of concession under the agreement Substitution of concessionaire • During period of suspension, the lender's representative, on behalf of senior lenders, shall be entitled to substitute the concessionaire under and in accordance with the substitution agreement.

<table>
<tr><th>MCA Reference</th><th>Item</th><th>Description</th></tr>
<tr><td>Article 31</td><td>Termination</td><td>Termination for Concessionaire Default:
• In case of Concessionaire default and no remedy within the cure period as defined for various types of default (minimum 60 days), Authority can terminate the Agreement with a 15 days' notice to Concessionaire and lenders to the project
• Authority shall pay the below mentioned termination payment
– During Operation Period—65% of the sum of annuity payments remaining unpaid for and respect of the concession, including interest thereon.
– During Construction Period—Termination payment shall be based on the payment milestone achieved rich is in terms of the physical progress made by the concessionaire in the project; and shall be as per the table below:
<table>
<tr><th>Payment Milestone</th><th>Termination Payment</th></tr>
<tr><td>1</td><td>NIL</td></tr>
<tr><td>2</td><td>NIL</td></tr>
<tr><td>3</td><td>50% of debt due or 3.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>4</td><td>55% of debt due or 5.78% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>5</td><td>60% of debt due or 9.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>6</td><td>65% of debt due or 12.68% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>7</td><td>70% of debt due or 16.80% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>8</td><td>75% of debt due or 21.38% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>9</td><td>80% of debt due or 26.40% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>10</td><td>85% of debt due or 31.88% of Bid Project Cost, whichever is lower</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>MCA Reference</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>Termination for Authority Default
• In case of Authority default and no remedy within the cure period as defined for various types of default (minimum 90 days), Concessionaire can terminate the Agreement with a 15 days' notice to Authority
• Authority shall pay the below mentioned termination payment
– During Operation Period—100% of the sum of annuity payments remaining unpaid for and respect of the concession, including interest thereon.
– During Construction Period—sum of 150% of adjusted equity invested in the project Debt due payment calculated as per table below less Insurance Cover
<table>
<tr><th>Payment Milestone</th><th>Termination Payment</th></tr>
<tr><td>1</td><td>Debt due or 0.75% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>2</td><td>Debt due or 1.50% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>3</td><td>Debt due or 6.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>4</td><td>Debt due or 10.50% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>5</td><td>Debt due or 15.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>6</td><td>Debt due or 19.50% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>7</td><td>Debt due or 24.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>8</td><td>Debt due or 28.50% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>9</td><td>Debt due or 33.00% of Bid Project Cost, whichever is lower</td></tr>
<tr><td>10</td><td>Debt due or 37.50% of Bid Project Cost, whichever is lower</td></tr>
</table></td></tr>
</table>

MCA Reference	Item	Description
Article 32	Divestment of Rights and Interest	Divestment requirements: • The concessionaire shall comply with following divestment requirements: a) Notify the location and particulars of all project assets b) Deliver the actual or constructive possession of the project, free and clear of all encumbrances c) Cure all the project assets, including the road, bridges, structures and equipment, of all defects and deficiencies d) Deliver and transfer relevant records, reports, intellectual property and other licenses pertaining to the project e) Transfer and deliver all applicable permits f) Execute such deeds of conveyance, documents and other writings as authority may require for divestment of all rights, title and interest of the concessionaire in the project assets g) Comply with all other requirements as maybe required under applicable laws for completing the divestment Inspection and cure: • The independent engineer, at prior to termination, shall verify compliance by the concession with the maintenance requirements, and if required, Cause S to be carried out at the concessionaire's cost for this purpose. • Defaults, if any, in the maintenance requirements shall be cured by concessioner at its own cost. Vesting Certificate: • The divestment of all rights, title and interest in the project shall be deemed to be complete on the date when all the divestment requirements have been fulfilled, and the authority shall issue a certificate substantially in the form set forth in schedule Q (the Vesting certificate)
Article 33	Defects Liability After Termination	Liability for Defects After Termination: • The concessionaires shall be responsible for all defects and deficiencies in the project for a period of 120 days after termination , and it shall have the obligation to repair or rectify, at its own cost, all such defects and deficiencies • In case search effects repaired by the authority, costs incurred shall be reimbursed by the concessionaire. In the event the concessioner does not reimburse such costs, the authority shall be entitled to recover the same from the funds retained in the escrow account all from the performance guarantee provided by the concessionaire

MCA Reference	Item	Description
		Retention in Escrow Account: • A sum equal to 15% of the annuity payment due and payable immediately preceding the transfer date shall be retained in the escrow account for a period of 120 days after termination for meeting the liabilities of concessionaire, if any, arising as for defects after termination • In lieu of such retention, the concessionaire may provide a bank guarantee for the same amount in the format provided in scheduled F (the :performance guarantee)

7.5 Changes to Model Concession Agreement (MCA)—June 22 Update

The Ministry of Road Transport and Highways (MoRTH), vide office memorandum dated 23 May 22, introduced a series of changes to Model Concession Agreement ("MCA") for PPP projects tendered in the roads sector in India under the Hybrid Annuity Model ("HAM"). These changes were further ratified and finalized by National Highways Authority of India ("NHAI") via notification dated 17 June 22.

These changes primarily aim to ensure that the awarded bidders have an incentive to operate the project for majority period of the concession period, thus helping to avoid cross-allocation of operating costs on to the construction cost. Also, clarity has been provided on treatment of GST for O&M payments during the operation period. This brings further clarity to bidders on their returns due to consistent tax and accounting assumptions for bids on HAM road projects in India.

This chapter provides a detailed analysis for these changes, and their impact on the financial projections for such projects. We have used a case study of "Project Highway" is used to explain the impact of various changes made to the MCA for Hybrid Annuity Projects in India.

Key relevant assumptions are as below:

- Cost of construction (civil and structural work) is INR 1200 Cr.
- O&M cost to be incurred each year = INR 4 Cr.
- Major Maintenance = During 7^{th} year and the 14^{th} year of operation period.
- ACPL has quoted Bid Project Cost = INR 1500 Cr in respect of construction activity
- ACPL has quoted O&M cost = INR 5 Cr per year in respect of O&M activities which is payable during the operation and maintenance period.
- Price Index is 4% per annum.

7.5.1 Changes in Bidding Process

Erstwhile Provision	Updated Provision w.e.f June 22
ACPL's bid would be evaluated based on Bid Price. Such bid price was computed as summation of NPV of Bid Project Cost during concession period and NPV of O&M cost during O&M period.	ACPL's bid now be evaluated based on the Bid Project Cost (INR 1500 Cr) and this will be the sole criteria for bid evaluation.

This change brings simplicity in the bid evaluation of HAM projects. Also, this will disincentivize bidders to do a cross-allocation of O&M expenses on upfront bid project cost payment.

7.5.2 Changes in O&M Payments

Erstwhile Provision	Updated Provision w.e.f June 22
ACPL will receive INR 5 Cr in two equal biannual instalments, adjusted for Price Index (from the bid due date), as O&M payments from NHAI.	ACPL will receive following amount for O&M payments as per different scenarios. It is also important to note below: • All amounts payable for maintenance shall be adjusted one account of variation of Price Index. • Bid Project Cost used for calculation of O&M payments shall be adjusted to the extent of change of scope and reduction in scope, but shall not include any price adjustments in pursuance of variation of Price Index • O&M payments will be subject to change in scope of the project of the concessionaire under Article 16 of the Concession Agreement
No provision with regards to GST taxability of O&M payments. However, the bids were called exclusive of GST	All O&M amounts for the performance of contractors' maintenance obligation shall be inclusive of all taxes.

The different possible scenarios for O&M payments and relevant computations are provided below.

CASE 1: For flexible perpetual pavement including structures with two (2) renewal layers, first at 7th year and second at 14th year:

- No maintenance charges shall be paid for the first year;
- 0.40% of the Bid Project Cost each for the second, third and fourth year;
- 0.80% of the original Bid Project Cost each till laying of the first renewal layer or end of concession period, whichever is earlier.

The requirement for the renewal layer shall be worked out based on the survey and investigation of the existing pavement and the cost of such renewal works shall be made separately to the Concessionaire @ 2.4% of Bid Project Cost.

After laying of the renewal layer, the Concessionaire shall be paid

- 0.40% of the original Bid Project Cost each for the next four years; and
- 0.80% of the original Bid Project Cost each till laying of the second renewal layer or end of concession period, whichever is earlier.

After laying of the second renewal layer, the Concessionaire shall be paid

- 40% of the original Bid Project Cost each for the remaining years till the end of concession period.

For avoidance of doubt, if there is end of renewal here during the initial 5 years and during the 5 years after laying off first renewal layer, then the cost of such remove a layer and any requirement or structure layer during the concession. In solely by the concessionaire.

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
1	30 November 24				–
2	31 May 25				–
3	30 November 25	0.40%	3.00	15%	3.46
4	31 May 26	0.40%	3.00	17%	3.52
5	30 November 26	0.40%	3.00	19%	3.58
6	31 May 27	0.40%	3.00	21%	3.64
7	30 November 27	0.40%	3.00	23%	3.70
8	31 May 28	0.40%	3.00	25%	3.76
9	30 November 28	0.80%	6.00	27%	7.64
10	31 May 29	0.80%	6.00	29%	7.76
11	30 November 29	0.80%	6.00	31%	7.88
12	31 May 30	0.80%	6.00	33%	8.00
13	**30 November 30**	**2.40%**	**18.00**	**35%**	**24.36**
14	**31 May 31**	**2.40%**	**18.00**	**37%**	**24.72**

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
15	30 November 31	0.40%	3.00	39%	4.18
16	31 May 32	0.40%	3.00	41%	4.24
17	30 November 32	0.40%	3.00	43%	4.30
18	31 May 33	0.40%	3.00	45%	4.36
19	30 November 33	0.40%	3.00	47%	4.42
20	31 May 34	0.40%	3.00	49%	4.48
21	30 November 34	0.40%	3.00	51%	4.54
22	31 May 35	0.80%	6.00	53%	9.20
23	30 November 35	0.80%	6.00	55%	9.32
24	31 May 36	0.80%	6.00	57%	9.44
25	30 November 36	0.80%	6.00	59%	9.56
26	31 May 37	0.80%	6.00	61%	9.68
27	**30 November 37**	**2.40%**	**18.00**	**63%**	**29.40**
28	**31 May 38**	**2.40%**	**18.00**	**65%**	**29.76**
29	30 November 38	0.40%	3.00	67%	5.02
30	31 May 39	0.40%	3.00	69%	5.08
Total					**249.00**

CASE 2: For flexible perpetual pavement including structures (without renewal layer)

- No maintenance charges shall be paid for the first year;
- 0.40% of the Bid Project Cost each for the second, third and fourth year;
- 0.60% of the Bid Project Cost each for the subsequent years till laying of the renewal layer or end of concession period, whichever is earlier.

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
1	30 November 24				–
2	31 May 25				–
3	30 November 25	0.40%	3.00	15%	3.46
4	31 May 26	0.40%	3.00	17%	3.52
5	30 November 26	0.40%	3.00	19%	3.58
6	31 May 27	0.40%	3.00	21%	3.64
7	30 November 27	0.40%	3.00	23%	3.70
8	31 May 28	0.40%	3.00	25%	3.76
9	30 November 28	0.60%	4.50	27%	5.73
10	31 May 29	0.60%	4.50	29%	5.82
11	30 November 29	0.60%	4.50	31%	5.91
12	31 May 30	0.60%	4.50	33%	6.00
13	30 November 30	0.60%	4.50	35%	6.09
14	31 May 31	0.60%	4.50	37%	6.18
15	30 November 31	0.60%	4.50	39%	6.27
16	31 May 32	0.60%	4.50	41%	6.36
17	30 November 32	0.60%	4.50	43%	6.45
18	31 May 33	0.60%	4.50	45%	6.54
19	30 November 33	0.60%	4.50	47%	6.63
20	31 May 34	0.60%	4.50	49%	6.72
21	30 November 34	0.60%	4.50	51%	6.81
22	31 May 35	0.60%	4.50	53%	6.90
23	30 November 35	0.60%	4.50	55%	6.99
24	31 May 36	0.60%	4.50	57%	7.08
25	30 November 36	0.60%	4.50	59%	7.17
26	31 May 37	0.60%	4.50	61%	7.26

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
27	30 November 37	0.60%	4.50	63%	7.35
28	31 May 38	0.60%	4.50	65%	7.44
29	30 November 38	0.60%	4.50	67%	7.53
30	31 May 39	0.60%	4.50	69%	7.62
Total					**168.51**

CASE 3: Construction of a rigid pavement with 10 years Maintenance Period including structures:

For rigid pavement with 10 years Maintenance Period including structures:

- no maintenance charges shall be paid for the first year;
- 0.20% of the Bid Project Cost each for the second, third and fourth year,
- 0.40% of the Bid Project Cost each for fifth, sixth, seventh and eighth year,
- 0.60% of the Bid Project Cost each till the end of concession period

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
1	30 November 24				–
2	31 May 25				–
3	30 November 25	0.20%	1.50	15%	1.73
4	31 May 26	0.20%	1.50	17%	1.76
5	30 November 26	0.20%	1.50	19%	1.79
6	31 May 27	0.20%	1.50	21%	1.82
7	30 November 27	0.20%	1.50	23%	1.85
8	31 May 28	0.20%	1.50	25%	1.88
9	30 November 28	0.40%	3.00	27%	3.82
10	31 May 29	0.40%	3.00	29%	3.88
11	30 November 29	0.40%	3.00	31%	3.94
12	31 May 30	0.40%	3.00	33%	4.00
13	30 November 30	0.40%	3.00	35%	4.06

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
14	31 May 31	0.40%	3.00	37%	4.12
15	30 November 31	0.40%	3.00	39%	4.18
16	31 May 32	0.40%	3.00	41%	4.24
17	30 November 32	0.60%	4.50	43%	6.45
18	31 May 33	0.60%	4.50	45%	6.54
19	30 November 33	0.60%	4.50	47%	6.63
20	31 May 34	0.60%	4.50	49%	6.72
21	30 November 34	0.60%	4.50	51%	6.81
22	31 May 35	0.60%	4.50	53%	6.90
23	30 November 35	0.60%	4.50	55%	6.99
24	31 May 36	0.60%	4.50	57%	7.08
25	30 November 36	0.60%	4.50	59%	7.17
26	31 May 37	0.60%	4.50	61%	7.26
27	30 November 37	0.60%	4.50	63%	7.35
28	31 May 38	0.60%	4.50	65%	7.44
29	30 November 38	0.60%	4.50	67%	7.53
30	31 May 39	0.60%	4.50	69%	7.62
Total					**141.56**

CASE 4: For stand-alone Bridge/Tunnel works:

The concessionaire shall be paid

- No maintenance charges shall be paid for the first year;
- 0.20% of the Bid Project Cost each for the next five years,
- 0.40% of the Bid Project Cost each for the remaining years till the end of concession period.

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
1	30 November 24				–
2	31 May 25				–
3	30 November 25	0.20%	1.50	15%	1.73
4	31 May 26	0.20%	1.50	17%	1.76
5	30 November 26	0.20%	1.50	19%	1.79
6	31 May 27	0.20%	1.50	21%	1.82
7	30 November 27	0.20%	1.50	23%	1.85
8	31 May 28	0.20%	1.50	25%	1.88
9	30 November 28	0.20%	1.50	27%	1.91
10	31 May 29	0.20%	1.50	29%	1.94
11	30 November 29	0.20%	1.50	31%	1.97
12	31 May 30	0.20%	1.50	33%	2.00
13	30 November 30	0.40%	3.00	35%	4.06
14	31 May 31	0.40%	3.00	37%	4.12
15	30 November 31	0.40%	3.00	39%	4.18
16	31 May 32	0.40%	3.00	41%	4.24
17	30 November 32	0.40%	3.00	43%	4.30
18	31 May 33	0.40%	3.00	45%	4.36
19	30 November 33	0.40%	3.00	47%	4.42
20	31 May 34	0.40%	3.00	49%	4.48
21	30 November 34	0.40%	3.00	51%	4.54
22	31 May 35	0.40%	3.00	53%	4.60
23	30 November 35	0.40%	3.00	55%	4.66
24	31 May 36	0.40%	3.00	57%	4.72
25	30 November 36	0.40%	3.00	59%	4.78
26	31 May 37	0.40%	3.00	61%	4.84

Instalments	Date of payment	% of BPC	Semi-annual Payment (In INR Cr)	Price Index Inflation (starting Bid Due Date)	Adjusted O&M Payments (In INR Cr)
27	30 November 37	0.40%	3.00	63%	4.90
28	31 May 38	0.40%	3.00	65%	4.96
29	30 November 38	0.40%	3.00	67%	5.02
30	31 May 39	0.40%	3.00	69%	5.08
Total					**100.91**

Tax Review—Indirect Taxes—GST

8

Goods and service tax (GST) is an indirect tax introduced in India and applicable from 1 July 2017 onwards. GST has replaced most of the indirect taxes that were applicable in India prior to introduction of GST such as Service tax, VAT, Central Excise duty, Entry Tax, etc.

In this chapter, the Authors have analyzed in detail the GST, being chargeability, rate of tax, time of supply, etc. in respect of the various aspects of HAM based PPP projects which, inter alia, includes the milestone payment received during the construction period, Operation and Maintenance (O&M) payments received during the operation period in bi-annual instalments, Balance of Bid Project Cost (BPC) to be paid by the government agency in form of Bi-annual annuity payment, Interest received by the contractor on such annuity payments, and Mobilization advance received by the Concessionaire/private sector developer.

The GST implications have been explained in theory and through numerical examples and calculations based on case study of Project Highway. This chapter include most of the issues that are relevant for the HAM model and also the Authors' opinion in respect of the said issues. Wherever possible the Authors have tried to provide the manner of mitigating risk associated with the said issues.

The HAM project is a case of inverted duty structure. Meaning thereby that the rate of tax on several inputs is higher than the rate of tax on output. Assessees are allowed to claim the refund of the Input Tax Credit (ITC) accumulated on account of inverted duty structure. In this chapter the Authors have also elaborated the provisions related to the refund of ITC accumulated on account of inverted duty structure and have also discussed the underlying issues. Judicial pronouncements of various courts have also been discussed to provide a detailed insight.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_8

8.1 Project Highway Case Study—Summary

The case study assumes an award of a national highway project in India called **Project Highway** by National Highways Authority of India (NHAI) as the government agency to a private sector player. The private sector player has incorporated a Special Purpose Vehicle (SPV) namely, **ABC Constructions Private Limited (ACPL)** who will be the Concessionaire for this Project; and will perform two (2) key activities:

- Construction of Highway; and
- After completion of Construction/Operation and maintenance (hereinafter referred to as **O&M**) of Highway for 15 years. Operation and maintenance activities would include regular maintenance as also major maintenance.

In terms of scope of O&M activities, ACPL is required to restore the asset at the end of the term of the concession agreement.

Key relevant assumptions are as below:

- Cost of construction (civil and structural work) is INR 1200 Cr
- O&M cost to be incurred each year = INR 4 Cr
- Major Maintenance = During 7^{th} year and the 14^{th} year of operation period. INR 30 Cr is estimated to be incurred in respect of major maintenance in each year (in real terms, without considering the impact of inflation)
- ACPL has quoted Bid Project Cost = INR 1500 Cr in respect of construction activity
- ACPL has quoted O&M cost = INR 5 Cr. per year in respect of O&M activities which is payable during the operation and maintenance period.

Estimated cost and revenue *(in real terms without considering the impact of inflation)* is summarized in Table 8.1.

The consideration agreed between NHAI and ACPL is to be paid by NHAI in the following manner:

- NHAI shall pay 40% of the cost of construction of the **Bid Project Cost (BPC)** on achievement of milestones linked with the physical completion of the project in ten (10) equal instalments of 4% of BPC.

Table 8.1 Case Study Summary—Project Highway—estimated costs and revenue

Activities/cost and revenue	Construction (INR Cr)	O&M (INR Cr)	Total (INR Cr)
Cost	1200	4 * 15 + 30 * 2 = 120	1320
Revenue quoted	1500	5 * 15 = 75	1575

- Upon Commercial Operation Date (COD), ACPL shall be entitled to demand and collect remaining 60% of BPC as Annuity payments. The said 60% shall be paid to the Concessionaire in 30 biannual Annuities, after completion of 180 days from COD, along with interest at the rate equal to equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25% on the balance of annuity payments.
- NHAI shall also pay operation and maintenance costs (as per the bid of the ACPL) during the 15 years of operations of the project.

We shall be using facts of this case study to elaborate different aspects of GST discussed in this chapter.

8.2 Levy and Exemption of GST

8.2.1 Levy of GST

Section 9 of the CGST Act provides for levy and collection of Central Goods and Services Tax. Corresponding provision for levy and collection of State Goods and Services Tax can be found in Section 9 of relevant SGST/UTGST Act.

Section 9(1) is the charging section for levy of GST. It provides that subject to Section (2), there shall be levied CGST:

- On all ***intra-state supplies***
- of ***goods or services*** or both,
- on the ***value determined under Section 15***
- and ***at such rates***, not exceeding 20%, as may be notified by the Government on the recommendations of the GST Council.

The relevant provision is extracted hereunder:

> ***9. Levy and collection.***
>
> *(1) Subject to the provisions of sub-section (2), there shall be levied a tax called the central goods and services tax on all intra-State supplies of goods or services or both, except on the supply of alcoholic liquor for human consumption, on the value determined under section 15 and at such rates, not exceeding twenty per cent., as may be notified by the Government on the recommendations of the Council and collected in such manner as may be prescribed and shall be paid by the taxable person.*
>
> ...

8.2.2 Exemption from GST

Section 11 of the CGST Act provides for power to grant exemption from tax. Vide Section 11(1) of the CGST Act, Government by notification, exempt goods or services or both from the whole or any part of the tax leviable thereon with effect from such date as may be specified in the said Notification.

The relevant provision is extracted hereunder:

> ***11. Power to grant exemption from tax.***
>
> *(1) Where the Government is satisfied that it is necessary in the public interest so to do, it may, on the recommendations of the Council, by notification, exempt generally, either absolutely or subject to such conditions as may be specified therein, goods or services or both of any specified description from the whole or any part of the tax leviable thereon with effect from such date as may be specified in such notification.*
>
> *...*

8.3 Taxability of Milestone Payments Received During Construction

8.3.1 Meaning of Works Contract

Section 2(119) of the CGST Act defines works contract in an exhaustive manner. It means inter-alia a contract for ***construction, repair, improvement, modification, maintenance, renovation of any immovable property*** wherein transfer of property in goods is involved in the execution of such contract. The activity of construction of road falls under the said definition. To quote:

> *(119). works contract means a contract for building, construction, fabrication, completion, erection, installation, fitting out, improvement, modification, repair, maintenance, renovation, alteration or commissioning of any immovable property wherein transfer of property in goods (whether as goods or in some other form) is involved in the execution of such contract;*

8.3.2 Composite Supply of Works Contract Treated as Supply of Services

Para 6 of the Schedule II provides that composite supply of works contract as defined in Section 2(119) of the CGST Act shall be treated as a supply of services. To quote:

> *SCHEDULE II*
>
> *[See section 7]*
>
> *ACTIVITIES OR TRANSACTIONS TO BE TREATED AS SUPPLY OF GOODS OR SUPPLY OF SERVICES*
>
> *6. Composite supply*
>
> *The following composite supplies shall be treated as a supply of services, namely:-*
>
> *(a) works contract as defined in clause (119) of section 2; and*

8.3.3 Rate of Tax

The Central Government has, in exercise of its power under Section 9(1) issued Rate Notification No. 11/2017-Central Tax (Rate) bearing F. No. 354/117/2017-TRU dated 28 June 2017, effective from 01 July 2017. The said Rate Notification prescribes the rate of central tax, on the intra-State supply of services. Similar Notification is issued under Section 9(1) of the respective SGST/UTGST Act. For instance, under Delhi GST Act, Notification No. Notification No. 11/2017-State Tax (Rate) Dated 30 June 2017 has been issued by the National Capital Territory of Delhi.

Reference is invited to S. No. 3(iv) of the above Central Tax (Rate) Notification No. 11/2017. The Serial No. 3(iv) prescribes rate of tax at 6% CGST for ***composite supply of works contract, supplied by way of construction, erection, commissioning, installation, completion, fitting out, repair, maintenance, renovation, or alteration of - a road, bridge, tunnel or terminal for road transportation for use by general public***.

Thus, the rate of tax applicable on the transaction of construction of road is 12% i.e. 6% CGST + 6% SGST. In case of inter-state supply, rate of IGST would be 12%.

The relevant extracts of the said Notification issued under the CGST Act is reproduced herein below:

[to be published in the gazette of India, extraordinary, part ii, section 3, sub-section (i)]

Government Of India

Ministry Of Finance

(Department Of Revenue)

Notification no. 11/2017-Central Tax (Rate)

New Delhi, the 28 June 2017

G.S.R (E).-In exercise of the powers conferred by sub-section(1), sub-section (3) and sub-section (4) of section 9, sub-section (1) of section 11, sub-section (5) of section 15, sub-section (1) of section 16 and section 148 of the Central Goods and Services Tax Act, 2017 (12 of 2017), the Central Government, on the recommendations of the Council, and on being satisfied that it is necessary in the public interest so to do, hereby notifies that the central tax, on the intra-State supply of services of description as specified in column (3) of the Table below, falling under Chapter, Section or Heading of scheme of classification of services as specified in column (2), shall be levied at the rate as specified in the corresponding entry in column (4), subject to the conditions as specified in the corresponding entry in column (5) of the said Table:-

Sl. No.	Chapter, Section or Heading	Description of Service	Rate (%)	Condition
(1)	(2)	(3)	(4)	(5)
3	Heading 9954 (Construction Services)	(iv) Composite supply of works contract as defined in clause (119) of section 2 of the Central Goods and Services Tax Act, 2017 other than that covered by items (i), (ia), (ib), (ic), (id), (ie) and (if) above, supplied by way of construction, erection, commissioning, installation, completion, fitting out, repair, maintenance, renovation, or alteration of,- a road, bridge, tunnel, or terminal for road transportation for use by general public; …	6	–

Project Highway
ACPL has quoted INR 1500 Cr as Bid Project Cost i.e. the bid price in respect of the construction activity. Further, in terms of the agreement 40% of the BPC is to be received during the construction period on the basis of milestones achieved. The said 40% is chargeable to GST and the rate of 12% is applicable in terms of entry 3(iv) of the Notification No. 11/2017-CT(R) dated 28 June 2017 effective from 01 July 2017.

8.3.4 Time of Supply in Respect of Milestones Payment Received by Concessionaire

Section 13(1) of CGST Act prescribes that the liability to pay tax on services shall arise at the time of supply. Further, the time of supply of services is determined in terms of Section 13 of the CGST Act. Thus, provisions relating of time of supply determines the point in time when the GST is required to be paid to the credit of the Government.

Section 13(2) provides that time of supply of services shall be the earliest of the following:

> *(a) the date of issuance of invoice by the supplier, if the invoice is issued within the period prescribed under section 31 or the date of receipt of payment, whichever is earlier; or*
>
> *(b) the date of provision of service, if the invoice is not issued within the period prescribed under section 31 or the date of receipt of payment, whichever is earlier; or*
>
> *(c) the date on which the recipient shows the receipt of services in his books of account, in a case where the provisions of clause (a) or clause (b) do not apply:*

Thus, time of supply, shall be earliest of the following:

a. Date of receipt of payment; or
b. Date of issuance of invoice by supplier. However, where the invoice is not issued with the period prescribed in Section 31, then the date of provision of service is to be considered for this purpose.

Note: for the present, we are ignoring the provisions of clause (c) above for that situation would not ordinarily arise.

Further, Section 31(5)(c) of CGST Act provides that in case of continuous supply of services where the payment is linked to the completion of an event, the invoice shall be issued on or before the date of completion of that event. Section 31(5) reads as under:

> *(5) Subject to the provisions of clause (d) of sub-section (3), in case of continuous supply of services,-*
>
> *(a) …*
>
> *(b)…*
>
> *(c) where the payment is linked to the completion of an event, the invoice shall be issued* ***on or before the date of completion of that event****.*

In the case of HAM, 40% of BPC, adjusted for Price Index Multiple, is linked with completion of event, i.e. on achieving the agreed milestone [as per para 23.4 of MCA]. For Example as per revised MCA the Concessionaire would receive 4% of the BPC on achievement of 5% of physical progress.

Thus, the Concessionaire is required to raise tax invoice in respect of milestone payments on or before when the said milestone is achieved, and the time of supply would be the point when the said invoice is issued. As per the MCA, the Authority shall disburse the payment within 15 days of receipt of report of IE certifying the achievement of payment milestone [Clause 23.4 of MCA]. Thus, it is the IE report certifying the physical progress that triggers the milestone payment by NHAI to the Concessionaire.

As per Section 31(5)(c), in case where payment is linked with the completion of an event, the invoice shall be issued **on or before the date of completion of that event**. In the present case as seen from clause 23.4 the payment is linked with achieving a specified milestone, however NHAI considers said milestone to be complete/achieved only upon the receiving the report of IE in this regard.

Thus, a question arises whether achievement of the milestone would be considered as achieved on the date that milestone is physically achieved by the contractor as perceived by him, or on the date when the inspection is carried out and communicated by the IE regarding physical progress to NHAI.

In the opinion of the authors, it seems that a plausible view can be taken that completion of the milestone is not a unilateral act and is considered to be achieved only when the IE certifies it. Even under the erstwhile regime of service tax, the CBIC came out with a Circular No. 144/13/2011 dated 18 July 2011 to clarify the position. In the said circular it was categorically noted as per the provisions of service tax rules, invoice is required to be issued within 14 days from the date of completion of service. The test for the determination whether a service has been

completed would be the completion of all the related activities such as measurement, quality testing etc. which may be essential pre-requisites for identification of completion of service and only after completion of all these related activities the service is said to be complete. Further, in the said circular it is noted that said interpretation also applies to determination of the date of completion of provision of service in case of "continuous supply of service". The relevant portion of circular is reproduced below:

> *2. These representations have been examined. The Service Tax Rules, 1994 require that invoice should be issued within a period of 14 days from the completion of the taxable service. The invoice needs to indicate interalia the value of service so completed. Thus it is important to identify the service so completed. This would include not only the physical part of providing the service but also the completion of all other auxiliary activities that enable the service provider to be in a position to issue the invoice. Such auxiliary activities could include activities like measurement, quality testing etc which may be essential pre-requisites for identification of completion of service. The test for the determination whether a service has been completed would be the completion of all the related activities that place the service provider in a situation to be able to issue an invoice. However such activities do not include flimsy or irrelevant grounds for delay in issuance of invoice.*
>
> *The above interpretation also applies to determination of the date of completion of provision of service in case of "continuous supply of service". ....*

In view of the authors, the said position should continue to apply even under the GST regime. Thus, as per authors' view the completion of event which requires issuance of invoice in terms of Section 31(5)(c) would be the day when the IE issues its report certifying the physical progress of work done.

We would like to highlight that in case of continuous supply of service such as road construction, Section 31(5)(c) of the CGST Act do not give any time period for complying with the requirement to issue of invoice after the event requiring making of payment gets triggered. As per the strict language of Section 31(5)(c) of the CGST Act, the invoice is required to be issued on or before the date of completion of *the event*. The event in the present case, being achievement of specified milestone. The extent of completion is based upon the IE's certification, which cannot be known to the contractor who has to raise the invoice. In this regard the provisions of rule 47 of the CGST Rules may be considered to come to the aid of the concessionaire which provides that the invoice referred to in Rule 46 may be issued within 30 days from the date of supply. This provision, even though contained in the rules and slightly at deviation with the Act, being a reasonable and practical one, should govern the field. It is well settled that procedural provisions such as time of issuance of invoice etc. are not to be read too strictly or technically but in a manner that aids the main objective of the act i.e. to collect revenue. Read thus, we feel that the Concessionaire should raise an invoice as soon as may be but in any case, within 30 days of certification of work by the IE.

At the end, to remind the reader, if the payment is received in advance i.e. prior to issuance of invoice or prior to the supply of service, then the time of supply would be the date of receipt of payment, and tax would be paid on advance as and when the same is received. For details, please refer to the next heading in this Chapter pertaining to taxation of mobilization advance.

8.3.5 Value of Taxable Supply

In accordance with Section 9(1) of the CGST Act, CGST is leviable on all intra-state supplies of goods or services or both, on the value determined under Section 15.

Section 15(1) provides that the value of a supply of goods or services or both shall be:

- ***transaction value***, i.e. the price actually paid or payable for the supply of goods or services or both
- where the supplier and the recipient of the supply are ***not related*** and
- the ***price is the sole consideration*** for the supply.

To quote,

> *15. Value of taxable supply.*
>
> *(1) The value of a supply of goods or services or both shall be the transaction value, which is the price actually paid or payable for the said supply of goods or services or both where the supplier and the recipient of the supply are not related and the price is the sole consideration for the supply.*

Thus, in view of Section 15(1) of the CGST Act, the value of the supply shall be the price actually paid or payable for the supply of goods or services or both. In respect of milestone payments the value of service would the amount of milestone payments actually payable by NHAI. In case any amount is payable in respect of inflation then the same would also be included in the taxable value.

Further, as per Section 15(2)(b), the value of supply shall include an amount that the supplier is liable to pay in relation to such supply but which has been incurred by the recipient of the supply and not included in the price actually paid or payable for the goods or services or both.

The relevant provision is extracted hereunder:

(2) The value of supply shall include,-

...

(b) any amount that the supplier is liable to pay in relation to such supply but which has been incurred by the recipient of the supply and not included in the price actually paid or payable for the goods or services or both;

...

Illustration 1
Where a concession is awarded by NHAI to A Ltd. for construction of road for INR 11 Cr. The terms of contract provides that all materials shall be arranged by A Ltd. A Ltd. asks NHAI to arrange bitumen worth INR 1.20 Cr and hence NHAI pays balance amount of INR 9.80 Cr to A Ltd for construction of road.

In this case, Value of supply = 9.80 Cr + 1.20 Cr

Illustration 2
Where a concession is awarded by NHAI to B Ltd. for construction of road for INR 5 Cr. The terms of contract provide that all materials shall be arranged by NHAI. Thus, all the materials were provided by NHAI as required under the contract. NHAI pays consideration of INR 5 Cr to B Ltd for construction of road.

In this case, Value of supply = INR 5 Cr

The above illustration, though not prevalent in HAM contracts as on date, have been provided for understanding of the concept.

8.4 Taxability of Mobilization Advance

In terms of Clause 23.8 of the MCA, the Authority/NHAI shall, on request of the Concessionaire, make an advance payment in a sum not exceeding 10% of the BPC (*this is called as Mobilization Advance*). The advance payment shall be made in 2 equal instalments.

Thus, the Concessionaire may request to NHAI to make an advance payment and pursuant to said request the NHAI may pay Mobilization advance to the Concessionaire.

The said mobilization advance is deducted by the Authority in 8 equal instalments from each of the payments to be made by the Authority to the Concessionaire.

Now the question arises that whether GST is payable on the said mobilization advance received by the concessionaire from the Authority.

In author's view, GST is required to be paid on the receipt of mobilization advance received by the Concessionaire from the Authority. Being advance for construction of road, it will be liable to the rate of tax as is for the time being applicable to road construction. This has already been discussed in the previous section of this chapter and hence not being repeated.

Time of supply will be the date of receipt of advance.

As per Section 31(3)(d) at the time of receiving the advance, the concessionaire is required to issue a receipt voucher or any other document, evidencing receipt of such payment. Further, such receipt voucher shall contain such particulars as prescribed in Rule 50 of the CGST Rules. To quote:

50. Receipt voucher.-

A receipt voucher referred to in clause (d) of sub-section (3) of section 31 shall contain the following particulars, namely,-

(a) name, address and Goods and Services Tax Identification Number of the supplier;

(b) a consecutive serial number not exceeding sixteen characters, in one or multiple series, containing alphabets or numerals or special charactershyphen or dash and slash symbolised as "-" and "/" respectively, and any combination thereof, unique for a financial year;

(c) date of its issue;

(d) name, address and Goods and Services Tax Identification Number or Unique Identity Number, if registered, of the recipient;

(e) description of goods or services;

(f) amount of advance taken;

(g) rate of tax (central tax, State tax, integrated tax, Union territory tax or cess);

(h) amount of tax charged in respect of taxable goods or services (central tax, State tax, integrated tax, Union territory tax or cess);

(i) place of supply along with the name of State and its code, in case of a supply in the course of inter-State trade or commerce;

(j) whether the tax is payable on reverse charge basis; and

(k) signature or digital signature of the supplier or his authorised representative:

Provided that where at the time of receipt of advance,-

(i) the rate of tax is not determinable, the tax shall be paid at the rate of eighteen per cent.;

(ii) the nature of supply is not determinable, the same shall be treated as inter-State supply.

The Concessionaire is required to pay interest on the said advance at the rate which is equal to the average of 1 year MCLR of top 5 Scheduled Commercial banks plus 1.25%, compounded annually.

Mobilization advance shall be deducted by the Authority in 8 equal installments from each of the payments to be made by the authority. Interest shall be recovered from 9th and 10th installments. When the advance shall be deducted, GST on the milestone payments will be paid only on the net amount i.e. after reducing the mobilization advance on which GST was paid at the time of receiving the advance.

8.5 Taxability of Operation and Maintenance Payments

Clause 17.1 of the Model Concession Agreement (MCA) includes the obligations of the Concessionaire under O&M for the HAM based road PPP Project.

Article 17.1 requires that during the Operation Period i.e. 15 years from COD, the Concessionaire shall operate and maintain the road. The obligations of the Concessionaire *inter alia* includes:

- Ensuring the safe and smooth use of the project road including prevention of loss or damage there to
- Minimising disruption in the event of accidents or any other incident which affects the safety and use of the project. For this purpose, the Concessionaire is also required to maintain liaison with emergency services of the state
- Carrying out preventive maintenance of the project
- undertaking routine maintenance including repair of potholes, cracks, joins, drains, embankments, structures, markings Kumar lighting, signage another control devices
- In the event that the project or any part thereof suffers any loss or damage during the concession period for any reason whatsoever, the concessionaire shall

at its own cost and expense rectify and remedy such loss or damage so that the Project confirms to the provisions of the MCA.

In sum, the Concessionaire is required to ensure that the road is always kept in working condition and for that purpose the Concessionaire is required to carry out routine repairs as also major maintenance. Further certain incidental facilities such as ambulance and jeep along with chauffer for taking instant action in case of any accident, are also to be provided by the Concessionaire.

O&M activity contemplated under the MCA is focused on ensuring that the road is operational at all times and is up to the mark as per the provisions of the MCA. As such the Concessionaire is not required to operate the road, say by regulating traffic, etc. Even the toll plaza is not operated by the Concessionaire. Then what does this clause require the Concessionaire to do? It is expected from the Concessionaire to carry out the physical repair and maintenance work and to ensure the safe and smooth use of the project road. That is what is contemplated in this clause. Even though the clause is termed to be Operation and Maintenance, materially and substantially the activity covered therein is that of repair and maintenance. Even going by the the major portion of the expenditure incurred by the Concessionaire, it is towards repair and maintenance of the road. The expenses towards maintaining ambulance and emergency services are minor portion and may be considered as incidental to the overall activity of repair and maintenance. On this basis, the expression Operation in O&M is really signified by repair and maintenance and there is no activity which can be separately classified as operating the road.

Since, the O&M involves the repair and maintenance of road, which is an immovable property, the activity of O&M would be covered within the definition of works contract as contained under Section 2(119) of the CGST Act.

The operation and maintenance work of the road project is leviable to GST and the same would be treated as supply of works contract service. Further, currently no exemption is available to the activity of operation and maintenance of road. Thus, the said supply of operation and maintenance services would remain taxable.

8.5.1 Rate of Tax

The operation and maintenance of road is a composite supply involving both, supply of goods as well as supply of services. Thus, the same would be covered within the definition of works contract as contained in Section 2(119) of the CGST Act [the same is reproduced above while discussing the taxability of milestone payments]. The operation and maintenance is chargeable to tax (CGST + SGST) at the rate of 12% in terms of entry 3(iv) of Notification No. 11/2017-CT(R) dated 28 June 2017 as effective from 01.07.2017. [The said entry was reproduced while discussing the rate of tax on milestone payments.

8.5.2 Time of Supply

As mentioned in the previous part of this chapter, time of supply shall be earliest of the following:

c. date of issue of invoice by the supplier, if the invoice is issued within the period prescribed under Section 31. However, where issue of invoice is not issued within the period prescribed under Section 31 then date of provision of service is to be considered;
d. date of receipt of payment

Further, in terms of Section 31(5) of the CGST Act, tax invoice in case of continuous supply of services shall be issued by

> *(a) where the due date of payment is ascertainable from the contract, the invoice shall be issued on or before the due date of payment;*
>
> *(b) where the due date of payment is not ascertainable from the contract, the invoice shall be issued before or at the time when the supplier of service receives the payment;*

As per Clause 23.7.2 of the MCA the O&M payments that are due and payable to the concessionaire shall be paid in 2 equal biannual installments and is disbursed by NHAI together with the corresponding installments of Annuity Payments. Further, as per Clause 23.6.2 the Annuity payments are payable in biannual installments over a period of 15 years commencing from COD. The first installment of annuity payments shall be due and payable within 15 days of 180th day of COD and the remaining instalments shall be due and payable within 15 days of completion of successive six months.

Since the O&M payments are linked with the time period and not with completion of any event thus, in our view the invoice for O&M payments shall be issued before the said date, i.e. the day on which the O&M payments is due for payment by NHAI.

In terms of Section 13 of the CGST Act, the issuance of tax invoice would be considered as time of supply and GST would be paid accordingly. Further, if invoice is not issued within the said prescribed time then the GST is payable on the basis of the event that triggers payment of O&M payments i.e. every six months.

Project Highway

ACPL has quoted Rs 5 Cr per annum (for the period of 15 years) payable biannually in respect of operation and maintenance. The whole of the amount received/receivable in respect of operation and maintenance is chargeable to

GST @ 12% in terms of entry 3(iv) of the Notification No. 11/2017-CT(R) dated 28 June2017 effective from 01 July 2017.

Further, the GST is payable for the month in which the said operation and maintenance payment is due from NHAI.

8.6 Taxability of Annuity Payments During Operation Period

For a HAM based road PPP project, 40% of BPC is paid during construction of road in 10 milestone payments. The remaining 60% of BPC is paid in equal bi-annual annuities spread across total period of operation and maintenance i.e. generally 15 years. In this part, the taxability of the bi-annual annuities is being discussed.

As per Clause 23.6.2 of the MCA the completion cost remaining to be paid in pursuance of the provisions of Clause 23.6.1. shall be due and payable in biannual installments over a period of 15 years commencing from the COD. The 1st installment of annuity payments shall be due and payable within 15th days of the 180th day of the COD and the remaining installments shall be due and payable within 15 days of completion of each of the successive 6 months.

8.6.1 Government Notifications and Recommendations of GST Council

In terms of powers conferred vide Section 11 of the CGST Act (exemption from tax) the Central Government has issued Notification No. 12/2017-CT(R) dated 28 June 2017 effective from 01 July 2017 to provide list of services that are exempt from GST. Vide ***Entry No. 23A of Notification No. 12/2017-Central Tax (Rate) dated 28 June 17*** the Central Government has exempted ***services by way of access to road or a bridge on payment of annuity*** from levy of GST. This entry was introduced vide Notification No. 32/2017-CT (Rate) with effect from 13 October 2017.

The relevant extract of the notification is reproduced as under:

S. No.	*Chapter, Section, Heading, Group or Service Code (Tariff)*	*Description of Services*	*Rate (%)*	*Condition*
23A	Heading 9967	Service by way of access to a road or a bridge on payment of annuity.	Nil	Nil

The above said exemption is provided on recommendation of the GST Council. Accordingly, to further analyse Entry No 23A of Notification No. 12/2017-CT(R) dated 28 June 2017, reference be made to the agenda and minutes of the ***22nd GST Council Meeting*** held on 06 October 2017 wherein the abovesaid exemption entry was recommended and approved. Relevant extract of the **agenda** of the 22nd GST Council meeting is reproduced as under:

Agenda	*Agenda of the 22nd GST Council Meeting*
Item 13(iv)	***Issue of Annuity being given in Place of Toll Charges to Developers of Public Infrastructure-exemption there on*** 1. Toll is exempt from GST. In service tax it was in the Negative List. 2. There is a difference between toll and annuity. While toll is a payment made by users of road to concessionaires for usage of roads, **annuity is an amount paid by National Highways Authority of India (NHAI) to concessionaires for construction of roads.** In other words, annuity is a consideration for the service provided by concessionaires to NHAI. 3. The works contract services by way of construction of road was exempt from service tax. However, service tax was leviable only on the service component of such works contract (40%). The material or goods component of the works contract was leviable to VAT. However, it was subject to State VAT (composition rate). 4. Construction of roads is now subject to 12% GST. EPC contractor (Engineering, Procurement and Construction) pays 12% GST on the service of road construction to the concessionaire. 5. In view of the above, there is a free flow of ITC from EPC Contractor to the concessionaire and thereafter to NHAI. As a result, the GST of 12% leviable on the service of road construction provided by concessionaire to NHAI would be paid partly from the ITC available with him. 6. A view may be taken for grant of exemption **to annuity paid by NHAI/**State Highways Construction Authority to concessionaires **for construction of roads**. This will amount to not taxing the value addition of the concessionaire. The argument for exempting annuity from GST is that the road construction service was exempt from service tax. However, GST would continue to be levied on the road construction service provided by the EPC contractor to the concessionaire.

From the agenda item, it is evident that by providing GST Exemption, the GST council has equated toll collected from users of the road with the annuity paid by NHAI to the contractors.

The GST Council deliberated on giving exemption to Annuity being given in place of Toll Charges to Developers of Public Infrastructure. The Council noted the difference between toll and annuity that while toll is a payment made by users of road to Concessionaires for usage of roads, **annuity is an amount paid by NHAI to Concessionaires for construction of roads**. In other words, annuity is a consideration for the service provided by Concessionaires to NHAI. From the agenda item reproduced above it can be categorically seen that the GST Council has clearly held entry 23A is introduced to cover the annuity payments made by NHAI to the Concessionaire for construction of road.

From the minutes of the 22nd GST Council Meeting it appears that the Ld. Joint Secretary (TRU-II), CBEC while introducing the agenda item, stated that annuity is an amount paid by NHAI to Concessionaires for construction of roads in order that the Concessionaire did not charge toll for access to such road. In other words, annuity is a consideration for service provided by Concessionaires to NHAI. Accordingly, the Council decided to treat Annuity at par with Toll and to exempt ***services by way of access to road or bridge on payment of annuity*** from levy of GST.

The relevant extracts of the Minutes of 22nd GST Council meeting are reproduced below:

Agenda	*Minutes of the 22nd GST Council Meeting*
Item 13(iv)	***Issue of Annuity being given in Toll Charges to Developers of Public Infrastructure – exemption thereon*** *61. Introducing this agenda item, the joint secretary (TRU-II), CBEC stated that while toll is a payment made by the user of road to concessionaries for usage of roads, annuity is an amount paid by the National Highways Authority of India (NHAI) to concessionaries for construction of roads in order that the concessionaire did not charge toll for access to a road or a bridge. In other words, annuity is a consideration for the service provided by the concessionaries to NHAI. He stated that construction of the roads was now subject to tax at the rate of 12% and due to this, there was free flow of input tax credit from EPC (Engineering, Procurement and Construction) contractor to the concessionaries and thereafter to NHAI. He stated that as a result, tax at the rate of 12% leviable on the service of road construction provided by concessionaries to NHAI would be paid partly from the input tax credit available with them. He stated that council may take a view for grant of exemption to annuity paid by NHAI/State Highways Construction Authority to concessionaries during construction of roads. He added that access to a road or bridge on payment of toll was already exempt from tax. The Hon'ble minister from Haryana suggested to also cover under this provision annuity paid by state owned Corporations. After discussion, the council decided to treat annuity at par with toll and to exempt from, tax service by way of access to a road or to a bridge on payment of annuity.* *[Emphasis Supplied]*

Thus, from perusal of the Agenda and Minutes of the 22nd GST Council meeting it is clear that the GST Council has recommended the exemption in respect of *Service by way of access to a road or a* bridge *on* ***payment of annuity.*** Further, from the above discussed agenda and minutes of the 22nd GST meeting it is evident that the exemption is recommended so as to include the service of construction of road provided by concessionaire to NHAI/State Authority where the consideration is received in annuity.

Even the press release dated 06 October 17 issued after 22nd GST Council meeting stated that Exemption to annuity paid by NHAI (and State authorities or State-owned development corporations for construction of roads) to concessionaires for construction of public roads.

At the cost of repetition, it is stated that after the above recommendation, and to give effect to the said recommendation, entry 23A was inserted in Notification 12/2017-CT (Rate) vide Notification No. 32/2017-CT (Rate) with effect from 13 October 2017. It shall be useful to extract the opening paragraph of the said notification:

Notification No.32/2017-CentralTax (Rate)

New Delhi, the 13th October, 2017

G.S.R.....(E).-In exercise of the powers conferred by sub-section (1) of section 11 of the Central Goods and Services Tax Act, 2017 (12 of 2017), the Central Government, on being satisfied that it is necessary in the public interest so to do, on the recommendations of the Council, hereby makes the following further amendments in the notification of the Government of India, in the Ministry of Finance (Department of Revenue), No.12/2017-Central Tax (Rate), dated the 28th June, 2017, published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-section (i), vide number G.S.R. 691(E),dated the 28th June 17, namely:

8.6.2 Importance/Relevance of Recommendations of GST Council

GST Council is a constitutional body established under Article 279A of the Constitution of India, entrusted with certain tasks including *inter-alia* making recommendations to the Union and the States on the goods and services that may be subjected to, or exempted from levy of GST under Article 279A(4)(b). The relevant extract of Article 279A is reproduced below:

…

(4) The Goods and Services Tax Council shall make recommendations to the Union and the States on—

(a)…

(b) the goods and services that may be subjected to, or exempted from the goods and services tax;

As discussed above Section 11 of CGST Act empowers the Government to grant exemption from tax. From a bare perusal of Section 11, it is clear that Government may grant exemption to any goods or services only on the recommendation of the GST Council.

The GST Council, being a body set up by Article 279A of the Constitution of India has a pivotal role to play in formulation of GST law and amendments therein. One of the functions entrusted to GST Council is to make recommendations to the Union and the States on the goods and services that may be exempted from GST. The said recommendations are the basis and foundation of the GST law and the Notifications made thereunder.

The methodology of working by GST Council is by way of meetings. The agenda of the meeting is clearly laid out and discussion is done in the meeting. The decisions taken with $3/4^{th}$ majority are recorded as recommendations in Minutes of Meetings (hereinafter referred as Minutes). The said recommendations form a basis for grant of exemption u/s 11.

The purpose of recommendations of the GST Council is also not far from sight. GST was brought as a unique tax raising measure whereby the entire nation becomes a harmonized national market and with an objective of having harmonized structure of goods and service tax. To this end, the GST Council was conceptualized, which is a Constitutional body responsible for providing recommendations on all aspects of GST law with a view to fulfill the objectives of introducing GST. Cooperative federalism being at the heart of the concept of GST, the GST Council has representation of the Centre and all States having the participation in such a manner that unless Centre and the States come together, no decision can be taken. More so when the parliament/legislature have legislatively provided that rate of tax and exemptions shall be notified on the basis of recommendations of the GST Council.

Thus, in the author's view, it is the most relevant guide for interpreting exemption entries.

8.6.3 Case Laws

It is a settled position of law, that for the purpose of ascertaining the mischief sought to be remedied by the legislation and the object and purpose for which the legislation is enacted, the speech made by the Mover of the Bill explaining the reason for the introduction of the Bill can certainly be referred. Reliance in this regard is placed upon ***K.P. Varghese Vs. Income Tax Officer, Ernakulam and Ors AIR 1981 SC 1922***.

Relevant provision is extracted as under:

> *8. …*
>
> *Now it is true that the speeches made by the Members of the Legislature on the floor of the House when a Bill for enacting a statutory provision is being debated are inadmissible for the purpose of interpreting the statutory provision* ***but the speech made by the Mover of the Bill explaining the reason for the introduction of the Bill can certainly be referred to for the purpose of ascertaining the mischief sought to be remedied by the legislation and the object and purpose for which the legislation is enacted.***
>
> *This is in accord with the recent trend in juristic thought not only in Western countries but also in India that interpretation of a statute being an exercise in the ascertainment of meaning, everything which is logically relevant should be admissible.*
>
> *…*

Reference is also invited to the interim order of Delhi High Court in the case of ***Manufacturers Traders Association v. Union of India in 2019 (10) TMI 667- Del HC*** wherein the issue was regarding the rate of tax on fabric items. It was the contention of the Petitioner that the GST Council in their 15th Meeting held on 03.06.2017 have decided the rate of tax on all varieties of fabric items at 5%. On the other hand, Respondents refuted the said claim by contending that the GST Council had specifically agreed that 5% rate of tax to be applicable on fabrics used for making apparels while 12% rate was recommended for technical fabrics, special fabrics, coated fabrics falling under Chapters 56 to 59 of the Tariff. The Court agreed with the submission of the Petitioner and directed the controversy to be specifically and pointedly be placed before the Council, in their next meeting.

To quote:

> *Keeping in view the aforesaid controversy, we are of the considered view that the aforesaid controversy should specifically and pointedly be placed before the Council,*

> *preferably in the next meeting. A copy of our order should also be circulated so that the controversy is brought before the Council.*

The said issue was placed before the GST Council in their 38th GST Council Meeting held on 18 December 2019 at New Delhi. In the Minutes of the Meeting, the JS, TRU-I while introducing the agenda item stated that in its 15th GST Council Meeting, the rate of 5% was prescribed on fabrics used for making apparels and 12% GST rate was prescribed on specialized and industrial fabrics. The Council in their deliberations took note of the order dated 11 October 2019 of the Hon'ble Delhi High Court and the decision of the Council to levy 12% GST on specialized and industrial fabrics and technical textiles of Chapters 56–59 was confirmed.

This shows that the courts recognizes the importance of the GST Council in interpreting and understanding the GST provisions and even rely on the minutes of the GST council for interpreting the GST law and to get their understanding on the disputed matter.

The constitutional role of GST Council was discussed by the Gujarat High Court in the case of ***Mohit Minerals v. Union of India in RCA 726 of 2018-MANU/GJ/0990/2020***, wherein it was observed that Goods and Services Tax Council is a constitutional body constituted under Article 279A of the Constitution of India and plays a pivot role under the GST, which brings uniformity in the law as also a cooperative federalism. The Council comprises, as its members the Finance Ministers of the Union and the States including Union Territories with Legislatures. It has the authority to recommend to the Union and the States on various facets of GST, including Model GST laws, principles to determine the place of supply, levy of the tax, design of GST, dispute settlement, special provisions for a special category of States, and so forth. Adopting the recommendation of the GST Council, Parliament has enacted these pieces of legislation:

(1) The Central Goods and Services Tax Act, 2017: it levies a tax on intra-State supplies of goods and services in all supplies within a State
(2) The Integrated Goods and Goods and Services Tax Act, 2017: it levies a tax on inter-State supplies of goods and services;
(3) The Union Territory Goods and Services Tax Act, 2017: it levies a tax on intra-State supplies of goods and service.

The relevant portion of the judgment in Mohit Minerals supra has been reproduced below for ready reference:

> *110. The GST Council, constituted in September 2016, is a constitutional institution comprising as its members the Finance Ministers of the Union and the States including Union Territories with Legislatures. It has the authority to recommend to the Union and the States on various facets of GST, including Model GST laws, principles to determine the place of supply, levy of the tax, design of GST, dispute settlement, special provisions for a special category of States, and so forth.*

111. Adopting the recommendation of the GST Council, Parliament has enacted these pieces of legislation:

(1) The Central Goods and Services Tax Act, 2017: it levies a tax on intra-State supplies of goods and services in all supplies within a State

(2) the Integrated Goods and Goods and Services Tax Act, 2017: it levies a tax on inter-State supplies of goods and services;

(3) the Union Territory Goods and Services Tax Act, 2017: it levies a tax on intra-State supplies of goods and service.

The recent judgment of the Supreme Court in ***Mohit Minerals 2022 5 TMI 968 SC*** case has affirmed that position that in so far as the secondary legislation (rate of tax/exemptions) are concerned, the law itself having provided that these shall be based upon the recommendations of the GST Council, the same shall be binding upon the government.

From the above, it can be noted that, to correctly interpret the intent and object behind introducing an exemption entry, reliance can very well be placed upon minutes of the GST Council wherein the said entry was recommended and basis which the Government has exempted the said service. This is clearly borne out from Article 279A & Section 11 of CGST Act.

Thus, based on entry 23A, when understood and interpreted in the light of agenda and minutes of 22nd GST Council meeting, it can be safely concluded that the Annuity payable by Authority to Concessionaire, for construction of road, would fall within this exemption entry.

Further, on the basis of the Minutes of the 22nd meeting of the GST council held on 6th October 2017, even the NHAI was of the view that annuity paid by NHAI or State Authorities or State-owned development Corporations for construction of Roads to Concessionaire is exempt from payment of GST. The said view was communicated by NHAI vide its memorandum dated 09 October 2017. Relevant part of the said Memorandum is reproduced below:

Subsequently, the GST Council in its 22nd Meeting held on 6th October, 2017 has taken some decisions and has communicated its decision through its web site for general information.

The following decisions are relevant for NHAI:

2. Exemption to annuity paid by NHAI (and State authorities or State owned development Corporations for construction of roads) to concessionaires for construction of public roads.

Accordingly, all concerned including ROs/PDs may please take note of it. It is further advised that NO PAYMENT OF GST shall be made by NHAI ON ANNUITY PAYMENTS, in view of the above decision by the GST Council

Here it is pertinent to refer prior to the date of 22nd GST Council, NHAI was of the view that GST would be paid on annuity and in its circular (3.3.14) NHAI had categorically mentioned that in respect of annuity payments GST shall be applicable at the time of Annuities payments at the applicable rate of GST and it shall be paid by NHAI to the Concessionaire separately at the time of making annuity payments.

However, post the 22nd GST Council Meeting the NHAI[1] stated that the annuity payments are exempt for payment of GST and NHAI will not pay any GST on the annuities paid by them to the Concessionaires.

Thus, even the Government Authority post the 22nd GST Council meeting was of an understanding the no GST is to be paid on the annuity payments made by them to the Concessionaire.

The Rajasthan Appellate Authority for Advance Ruling in the matter of Nagaur Mukundgarh Highways Pvt. Ltd.[2] it was held that the annuity payments made by NHAI to the Concessionaire is exempt in terms of Entry 23A of the Exemption Notification No. 11/2017-CT(R) dated 28 June 2021.

8.6.4 Taxability of Interest on Annuity Payments During Operations

Further, the interest amount that is paid by NHAI along with the bi-annual instalment may also be regarded as annuity i.e. consideration for access of road and thus the interest would also be exempt in terms of entry 23A of Notification No. 12/2017-CT(R) dated 28 June 2017 w.e.f. 01 July 2017.

Thus, if it is considered that the annuity payment received from NHAI is exempt in terms of entry 23A of Notification No. 28 June 2017 then it would be safe to treat the amount of interest received along with annuity payments as exempt and the concessionaire is not required to pay any GST on the said interest. As per Circular dated 05 March 18 NHAI has also clarified that GST shall not be payable on the interest paid along with annuity payments since, interest is payable on the reducing balance of the completion cost as per Clause no. 23.6.4 of MCA.

Further, it is important to note that the entry 23A of the exemption notification only exempts the annuity payments and does not exempt **any** other payments

[1] Reference placed on memorandum of NHAI dated 09 October 2017 and Circular No. 3.3.17 dated 23 October 2017 issued by NHAI.

[2] Order No.RAJ/AAAR/06/2018–19 dated 12 February 2019.

made by Authority to the Concessionaire. Meaning thereby that the milestone payments or other payments (excluding annuity payments) made by Authority to Concessionaire remains taxable as explained in the earlier sections of this chapter.

8.6.5 Later Developments in Respect of the Taxability of Annuity Payments Made by NHAI in Respect of Construction of Road

On the basis of the agenda and minutes of the 22nd meeting of the GST Council supra, NHAI as well as industry players were of the view GST is exempt on the annuity payments made by NHAI to the Concessionaire for construction of road. As mentioned above NHAI in its clarification provided that GST is not payable on the annuity payments made by it to the concessionaire for construction of road. Also, the industry players were bidding for the HAM projects assuming that no GST liability is payable on the annuity payments.

Although there was clarity regarding the intention of the GST Council (evident by way of Agenda and minutes of the 22nd GST Council meeting) that they recommended the exemption of annuity payments made by NHAI to concessionaire to bring it in parity with the exemption of toll charges but the wordings of Entry 23A left room for ambiguity that whether the annuity payments are actually exempt or not.

GST Council In the 43rd GST Council meeting in the agenda item 11(iii)(6) discussed regarding exemption of annuity payments made by NHAI. The agenda item is extracted as under:

Sl. No.	Proposal	Justification	Comments and Fitment Committee's recommendation
6	Exemption to The Hybrid Annuity Model Project SPV from GST output tax liability	1. In HAM Project, NHAI contributes 40% of the Bid Project Cost during construction phase and balance construction cost, invested by private operators is paid back to the concessionaire in 30 defined installments along with interest as may be applicable. The payments made towards balance construction are paid as Annuities. Annuity payment is exempted from GST as per entry 23A, which is now also confirmed by the appellate bench, vide order no RAJ/AAAR/06/2018-19 dated 12 February 2019. However, the following decision in the said order is being contested by the HAM Developers (a) That ONLY 40% of input tax credit used in the construction phase is available to the concessionaire (b) Full ITC of the GST paid on the inputs and input services used in the O&M phase is available to the concessionaires 2. Industries want to have 100% ITC, so that no cash out go is there from the SPV, as sufficient ITC is available it is utilized against GST. The un -utilized portion of the ITC can be potentially utilized during the O&M phase, which may be remote. Eventually, as it is not refundable, it is written off in the books of the SPV as a cost over the O&M period in case of non -utilization 3. HAM projects are at disadvantageous position vis - å -vis EPC and BOT Projects. The input tax credit provisions are clear in both EPC as well as BOT projects. In EPC projects, 100% ITC is available to the contractors during construction. In BOT projects, whole of the project is developed and managed by the Private Partner (referred as Concessionaire)	**Recommendation: Clarification may be issued by way of a circular that entry 23A of notification No. 12/2017-CT(R) does not exempt annuity paid for construction of roads. It only exempts services provided by way of access to a road or bridge on payment of annuity for it** 1 The entry 23A of notification No. 12/2017-CT(R) provides exemption to any service provided for access of road on payment of annuity. This entry reads as below: Service by way of access to a road or a bridge on payment of annuity 2. However, the service being provided by the concessionaire to NHAI is construction service (for which the contract is entered into) covered under service code 995421 - General construction services of highways, streets, roads railways, airfield runways, bridges and tunnels 3. The said entry 23A of the notification No. 12/2017-CT(R) exempts service by way of access to a road or a bridge on payment of annuity. Entry 23 exempts service of access provided in lieu of toll. However, cases where charges are paid, in lump sum or in form of an Annuity, by the Government department or PSU for seeking access to road/bridge for general public were not covered by entry 23. This led to a situation where the toll charges, in form of Annuity, being offset by the Government or PSU, in public interest, to the concessionaire were subjected to GST and consequently it was recommended by the GST Council in its 22nd meeting to exempt service by way of access to road or bridge where payment were in the form of annuity. The Council thus recommended exemption to only such annuities, which are charged for providing access to a road or bridge and otherwise the activity is at par with the activity for which toll is charged 4. In the case referred to in the reference, AAAR vide its order dated 12 February 19 had held that the annuity payments received by the petitioner are exempt, however, only 50% of ITC of the inputs and input services used in the construction phase shall be available to the petitioner as the annuity is not taxable. The AAAR did not go into the aspect that for the purposes of exemption annuity should have been in lieu of access to the road and not in lieu of construction of road 5. It would be appropriate if clarification is issued that exemption is available to only such annuities, which are charged for providing access to a road or bridge (at par with toll) 6. Fitment Committee may examine and take a view

From a bare perusal of the above, it seems that this was a note put up by some officer for consideration of the fitment committee. What were the views of the fitment committee on this is not clear.

Further, in the minutes of the 43rd meeting it was stated that *it was also being clarified that the annuity paid as deferred payment for construction of roads/highways was not exempted from GST as the toll or annuity in lieu of tolls are*.

From the aforesaid agenda item 11(iii)(6) and minutes of 43rd GST Council meeting it appears that the issue whether the annuity payments made by NHAI to the concessionaire under the HAM Project is exempt in terms of entry 23A was discussed. GST Council recommended that ***Clarification may be issued by way of a circular that entry 23A of notification No. 12/2017-CT(R) does not exempt annuity paid for construction of roads. It only exempts services provided by way of access to a road or bridge on payment of annuity for it.***

Further, it was noted that concessionaire is providing the service of construction of road covered under service code 995421—general construction services of highway, streets, roads, railways, airfield runways, bridges and tunnels. Whereas entry 23A exempts only the services of access to road or a bridge on payment of annuity. Further it was elaborated that entry 23 of the exemption notification exempts services of access of roads provided in lieu of toll, however, cases where charges are paid, in lumpsum or in form of annuity by the Government department or a PSU, for seeking access to road/bridge for general public were not covered in entry 23. Hence to cover the annuity payments made by the Government department or the PSUs in public interest, to the concessionaire for the access of roads or bridges Entry 23A was introduced. It was further noted that the Council thus recommended exemption to only such annuities, which are charged for providing access to a road or bridge and otherwise the activity is at part with the activity for which toll is charged.

The author wants to highlight that while discussing Entry 23A of the Exemption Notification, GST Council in its 22nd meeting categorically noted that *in Entry 23A* annuity is an amount paid by the National Highways Authority of India (NHAI) to concessionaries for construction of roads in order that the concessionaire did not charge toll for access to a road or a bridge. In other words, in the agenda and the minutes of the 22nd GST Council Meeting it was categorically noted that the annuity payments made by NHAI to the Concessionaire for construction of Road is akin to the toll charges collected from the users and like the toll charges such annuity payment should also be exempt from the payment of GST. On the said recommendation of the GST Council Entry 23A was inserted in Exemption notification effective from 13 October 2017.

Now, in the 43rd meeting the GST Council has taken a complete U- turn vis-à-vis the recommendations made by them in the 22nd GST Council. From the recommendations made by the GST Council in its 43rd meeting it appears that in respect of entry 23A it is noted that the said entry only exempts the services by way of access to a road or bridge where the payments are made in annuity. From the said interpretation of Entry 23A the Author is unable to contemplate any material services that would be exempt in terms of the said entry. Thus, in essence, vide the recommendations made by GST Council in the 43rd GST Council the exemption entry 23A is made redundant and useless.

Post the recommendations made by the GST Council in its 43rd meeting, CBIC issued a Circular No. 150/06/2021-GST dated 17 June 2021 wherein it was mentioned that in light of the recommendations made by the GST Council, it is hereby clarified that Entry 23A of notification No. 12/2017-CT(R) dated 28 June 2021 does not exempt GST on the annuity (deferred payments) paid for construction of roads. Relevant part of the said Circular is reproduced below:

2. This issue has been examined by the GST Council in its 43rd meeting held on 28th May, 2021.

2.1 GST is exempt on service, falling under heading 9967 (service code), by way of access to a road or a bridge on payment of annuity [entry 23A of notification No. 12/2017-Central Tax]. Heading 9967 covers supporting services in transport under which code 996742 covers operation services of National Highways, State Highways, Expressways, Roads & streets; bridges and tunnel operation services. Entry 23 of said notification exempts service by way of access to a road or a bridge on payment of toll. Together the entries 23 and 23A exempt access to road or bridge, whether the consideration are in the form of toll or annuity [heading 9967].

2.2 Services by way of construction of road fall under heading 9954. This heading inter alia covers general construction services of highways, streets, roads railways, airfield runways, bridges and tunnels. Consideration for construction of road service may be paid partially upfront and partially in deferred annual payments (and may be called annuities). Said entry 23A does not apply to services falling under heading 9954 (it specifically covers heading 9967 only). Therefore, plain reading of entry 23A makes it clear that it does not cover construction of road services (falling under heading 9954), even if deferred payment is made by way of instalments (annuities).

3. Accordingly, as recommended by the GST Council, it is hereby clarified that Entry 23A of notification No. 12/2017-CT(R) does not exempt GST on the annuity (deferred payments) paid for construction of roads.

Thus, in the said circular without analyzing the recommendations made by the GST Council in its 22nd meeting CBIC straight away clarified that entry 23A of the Exemption notification [Notification No. 12/2017-CT(R) dated 28 June 2017] does not exempt annuity payments made by NHAI to the concessionaire for construction of roads.

At thus juncture it is important to analyze the following aspects:

a. Whether the coverage of an exemption notification can be restricted by way of a clarification made by the board vide issuing a circular and that too after almost 4 years from the date on which the exemption was originally issued;
b. If at all the clarification issued by the board by way of circular is to be followed then whether it needs to followed prospectively or retrospectively.

We will be analyzing both the aforesaid aspects one by one.

Firstly, we shall be dealing with the issue that whether the scope and coverage of the exemption notification can be curtailed by way of issuing a board circular. In this regard it is important to note that as per Section 11 of the CGST Act i.e. the substantive law that empowers Government to grant exemption specifically provides that Government on recommendation of the council, exempts goods or services or both of specified description from the whole or any part of the tax leviable thereon. Thus, exemption is provided by the government on the recommendation of the GST Council. Further, nowhere in Section 11 of the CGST it is provided that the CBIC by way of issuing the circular can interpret the coverage of the entries of the exemption notification.

Here it is also relevant to analyze Section 168 of the CGST Act. As per Section 168 of the CGST Act, CBIC.

(a) For the **purpose of uniformity** in the **implementation of this Act**;
(b) is empowered to issue such orders, instructions, or directions;
(c) to the central tax officers;
(d) as it may deems fit

Thus, From the Section 168 (1) of the CGST Act it is evident that the following are the two most important characteristics of the directions/order/instructions issued by CBIC:

i. These are issued to bring ***uniformity*** in the ***implementation*** of the Act. Thus, Circular can only be issued where some inconsistency is felt regarding the implementation of the Act, and hence to bring the uniformity in the implementation of the Act, Circular can be issued by the CBIC.
ii. From the clear wordings of the Section 168(1) it is evident that circular cannot be issued to curtail the scope of the exemption notification as it would result in the restricting the substantive benefits of the trade at large. Implementation of the Act has to mean administrative or procedural issues and not legislative

power, else the entire task of legislation would be assumed by the board/CBIC in garb of Section 168.

iii. It is categorically mentioned in Section 168(1) itself that the orders/instructions/circulars/directions issued by CBIC are for the Central tax officers and it is only the Central tax officers and all other persons employed in the implementation of the Act are bound to follow such orders/instructions/circulars etc. issued under Section 168 of the CGST Act. Thus, in terms of the legal provision itself the assessees are not bound to follow the Circulars issued by the CBIC. Even from looking at the underlying Circular it can be seen that the same is addressed to the Principal Chief Commissioners/Chief Commissioners/Principal Commissioners/Commissioner of Central Tax (All) /The Principal Director Generals/Director Generals. This further shows that the circular is meant to be followed by the departmental officers only and that too for administrative purposes.

In numerous judicial pronouncements it has been held that the circulars issued by the board are not binding on the assessee; if the circular is not beneficial, assessee can choose not to follow the same. In other words, circulars issued by the board under Section 168 are not binding on the assessee.

Thus, from the aforesaid it is evident that the circulars can only be issued in respect of administrative or procedural issues and the assesses are not bound to follow the circulars issued by the board.

In a recent case, Hon'ble Madras High Court in ***Jenefa India V. UOI***[3] has analyzed the power of the board under Section 168 and that whether circular can be issued by boards to curtail the substantive rights. the Hon'ble Court specifically stated that Section 168 makes it clear that only for the purpose of uniformity in the implementation of the Act, orders or directions to the Central Tax Officers, as deem fit, may be issued by the board. Therefore, most probably, such kind of orders, instructions or directions must be procedural in nature, not substantive in nature. Further it has been noted that the exemptions are provided by the Central Government by exercising their powers under Section 11 of the CGST Act and the exemptions are the vested rights provided to the stake holders. Therefore such kind of exemptions cannot be taken away or done away by issuing clarificatory Circulars by the Board, in exercise of the powers under Section 168 of the CGST Act. If at all anything to be taken away from the purview of such exemption already provided under those entries, it is for the Central Government to come to the rescue of the Revenue by issuing further amendment to the exemption notification. Thus, it has been very clearly held by the Hon'ble Madras High Court that the Circulars can only be issued in respect of procedural matters and not substantive in nature.

[3] 2021 (11) TMI 227 – Mad.

Likewise, in the case of ***Orient Paper Mills Ltd. V. UOI***[4] and ***Sirpur Paper Mills Ltd. V. CWT***[5] it has been held that Board cannot issue Circulars which interfere with the quasi-judicial powers of the Authority.

Thus, if the council indeed recommended to withdraw the exemption which was unequivocal and background whereof duly covered HAM contractors, then the withdrawal would have been by way of modification of the notification and not by clarifying the issue.

The second issue that we have noted above is if at all it is assumed that the circular is valid then whether the applicability is prospective or retrospective. The Apex Court in the case of ***Suchitra Components Ltd. V. CCE***[6] has categorically held that a beneficial circular has to be applied retrospectively while oppressive circular has to be applied prospectively. Meaning thereby that when the circular is against the assessee, they have right to claim enforcement of the same prospectively.

In the case of ***DIT V. SRMB Dairy Farming Pvt Ltd.*** the Apex Court noted that the favourable circulars are applied retrospectively while the oppressive circulars are applied prospectively.

Thus, even assuming that the Circular could have stated what has been stated therein, a view can be taken that the circular dated 17 June 2021, being a oppressive circular, would be applied prospectively. Meaning thereby that the circular if at all to be applied then the same may be applied for period post 17 June 2021, and for the period prior to 17 June 2021 annuity may be considered as an exempt supply.

8.6.6 NHAI Circular Post the 43rd Meeting of GST Council

Post the Circular No. 150/06/2021- GST dated 17 June 2021 issued by the CBIC, NHAI issued a policy circular No. 3.3.21/2021 dated 01 September 2021 wherein clarification is issued regarding applicability of GST on the activity of construction of road where considerations are received in deferred payment HAM. In the said circular NHAI referred to MoRTH letter No. NH-24028/22/2020-H dated 27 August 2021. In the MoRTH letter it is stated the Ministry of Finance, has clarified vide Circular No. 150/06/2021 that entry 23A does not exempt GST on the annuity paid for construction of roads. Further in the said letter all the HAM projects were segregated in following three categories based on the bid due date:

[4] AIR 1969 SC 48.
[5] 1970 (1) SCC 795.
[6] (2006) 12 SCC 452.

S. No.	Category of HAM projects	Manner of Payment of GST on the annuity paid/payable to the Concessionaire.
1	Projects where bid due date was on or before 30 June 2017	a. For the projects where the last date of submission of bids was on or before 30 June 2017, GST on annuity payments will be paid/reimbursed considering change in law as per the guidelines mentioned under Standard Operating Procedure (SOP) dated 29 July 2019 with the applicable GST rate and considering Bid project cost plus escalation cost as total cost of project in the excel template. b. In case, where the template has already been submitted by the concessionaire and change in law impact has been calculated, in such a case, GST impact shall be calculated again considering BPC plus escalation cost as total cost of project. c. The impact of additional GST shall be computed after adjusting GST Input Tax Credit lying with the Concessionaire. d. Further, Appendix-I & Annexure—1 Base Data stands omitted and Annexure—II (Regular and Composite Scheme) (enclosed) stands modified and issued accordingly along with Annexure—III (enclosed) for calculation of amount recoverable (if any), from the concessionaire in case payment already made under change in law. e. GST on interest on annuity payments shall be payable at the applicable GST rate in accordance with the provisions under Section 15(2)(d) of the CGST Act. f. GST on annuity as per the percentage impact calculated shall be paid/reimbursed at the time when such annuity becomes due.
2	Projects where bid due date was on or after 01 July 2017 and on or before 13 October 2017	no GST on annuity under change in law shall be paid/reimbursed since bids were invited inclusive of GST

S. No.	Category of HAM projects	Manner of Payment of GST on the annuity paid/payable to the Concessionaire.
3	Projects where bid due date was on or after 14 October 2017 and on or before 16 June 2021	a. Effect of change in law on annuity payment shall be computed at applicable GST rate after adjusting GST input tax credit lying with concessionaire. No GST shall be paid on 40% construction support. b. GST on interest on annuity payments shall be payable at the applicable GST rate in accordance with the provisions under Section 15(2)(d) of CGST Act. c. GST on annuity as per the percentage impact calculated shall be paid/reimbursed at the time when such annuity becomes due.
4	Project where bid due date are after 16 June 2021	No GST on annuity under change in law shall be paid/reimbursed since bids were invited exclusive of GST.

There may be cases where the contractor claimed exemption, and later because of some reason is unable to claim the reimbursement of GST on annuities. The authors are of the view that in such cases, the contractor may have to litigate with the department to sustain the claim for exemption.

8.7 Refund on Account of Inverted Duty Structure

8.7.1 Introduction

Section 54(3)(ii) of the CGST Act allows refund of any unutilised ITC which has *accumulated* on account of rate ***of tax on inputs being higher than the rate of tax of output supplies***. Thus, where the tax rate on inputs is more than the tax rate on output supplies then the accumulated Input Tax Credit would be allowed as refund. Section 54(3)(ii) is explained with the help of the following illustration:

Illustration

Input (raw material)	Cement
Rate of tax on input	28%
Value of input	100
Tax on inputs	28
Output	Construction
Rate of tax on output	12%

Input (raw material)	Cement
Value of output supply	150
Tax on output	18
Unaccumulated ITC	28–18 = 10

For understanding refund under Section 54(3) relating to inverted duty structure, it is important to note that the law takes into account the accumulation on account only of rate of tax on **inputs** being higher than the rate of tax on output. Here, it is important to note that 'inputs' have been defined in Section 8.2(59) of the CGST act as:

> ***2.*** *In this Act, unless the context otherwise requires,–*
>
> *(1) .....*
>
> *(59) input means any goods other than capital goods used or intended to be used by a supplier in the course or furtherance of business;*

ITC can be availed by a taxable person on not only inputs, but also on input services and capital goods. However, for the purpose of refund of accumulated ITC in case of inverted duty structure under Section 54(3), no account is to be taken of the credit accumulated on any account except of inputs.

Thus, refund of unutilized ITC of INR 10 can be claimed under Section 54(3)(ii) of the CGST Act.

8.7.2 Construction and Maintenance of Roads—HAM Based PPP Contracts

In the case of construction of road various inputs are used such as cement, bitumen and aggregate. Out of these inputs bitumen and aggregates are chargeable to tax at the rate of 18%, and cement is leviable to tax at the higher rate of 28%. Whereas as mentioned earlier the GST rate applicable on construction of road is only 12%. Likewise maintenance of road is also chargeable to GST @ 12%.

Thus, in case of construction and maintenance of road the duties are fixed in such a manner that they are resulting in the inverted duty structure. Exemption to annuity payment further add to the accumulation, though that accumulation may not give rise to refund. Due to the presence of inverted duty structure there is huge accumulation of Input tax credit in the book of concessionaire which would ultimately become their cost.

To deal with such a situation, resort is to be made to Section 54(3)(ii) of the CGST Act wherein the statutory right has been granted to claim the refund of unutilised input tax credit where the tax rate on inputs supplies is more than the tax rate of output supplies.

Thus, in respect of the projects pertaining to road construction and maintenance, as in the case of HAM, where the input tax credit is accumulated for the reason of inverted duty structure the registered person may apply for refund of the accumulated input tax credit in terms of Section 54(3)(ii) of the CGST Act.

Further Section 54(3) of the CGST Act is reproduced below for your ready reference:

(3) Subject to the provisions of sub-section (10), a registered person may claim refund of any unutilised input tax credit at the end of any tax period:

Provided that no refund of unutilised input tax credit shall be allowed in cases other than—

(i) zero rated supplies made without payment of tax;

(ii) where the credit has accumulated on account of rate of tax on inputs being higher than the rate of tax on output supplies (other than nil rated or fully exempt supplies), except supplies of goods or services or both as may be notified by the Government on the recommendations of the Council:

Provided further that no refund of unutilised input tax credit shall be allowed in cases where the goods exported out of India are subjected to export duty:

Provided also that no refund of input tax credit shall be allowed, if the supplier of goods or services or both avails of drawback in respect of central tax or claims refund of the integrated tax paid on such supplies.

8.7.3 Notification No. 15/2017-CT(Rate) Dated 28 June 2017

Here it is pertinent to mention that Section 54(3) specifically bars for refund of unutilized ITC in case of supplies of goods of services or both as may be notified by government on recommendation of Council. Thus, no refund of unutilized ITC would be allowed in the case of supplies that are notified under Section 54(3) of the CGST Act.

Notification No. 15/2017-CT(R) dated 28 June 17 has been issued under Section 54(3) of the CGST Act that bars for refund of unutilised ITC in respect of supply of services specified in sub-item (b) of item 5 of Schedule II of the

CGST Act. Thus, by virtue of the said Notification the refund of unutilised ITC as available in Section 54(3)(ii) of the CGST Act is restricted where there is supply of services as specified in item 5(b) of Schedule II of the CGST Act and not in any other case.

To quote the notification:

> *In exercise of the powers conferred by sub-section (3) of section 54 of the Central Goods and Services Tax Act, 2017 (12 of 2017), the Central Government, on the recommendations of the Council hereby notifies that no refund of unutilised input tax credit shall be allowed under sub-section (3) of section 54 of the said Central Goods and Services Tax Act,* ***in case of supply of services specified in sub-item (b) of item 5 of Schedule II of the Central Goods and Services Tax Act***

Since the scope of this notification is to be read in terms of the services specified in item 5(b) of Schedule II of the CGST Act, the same is extracted hereunder for ready reference:

> *SCHEDULE II*
>
> *5. Supply of services*
>
> *The following shall be treated as supply of services, namely: -*
>
> *(a) .....*
>
> *(b) construction of a complex, building, civil structure or a part thereof, including a complex or building intended for sale to a buyer, wholly or partly, except where the entire consideration has been received after issuance of completion certificate, where required, by the competent authority or after its first occupation, whichever is earlier.*

From the reproduced entry, it is amply clear that item 5(b) of Schedule II covers activities in the nature of **construction of**

(a) **Buildings,**
(b) **Complexes,**
(c) **civil structures,** and
(d) parts thereof, and also
(e) including a complex or building intended for sale to a buyer, wholly or partly.

Thus, by virtue of Notification No. 15/2017-CT(R) read with item 5(b) of Schedule II, the refund of unutilised ITC is not available in the case of construction of complex, building, civil structure or part thereof including a complex or building

intended for sale to buyer. An issue therefore arises as regards interpretation of the terms – complex, building or civil structure, used in the notification.

Thus, for correctly interpreting Notification no 15/2017-CT(R) it is important to understand the meaning of terms building, complex or civil structure. However, these terms are not been defined anywhere in the CGST Act or rules made thereunder, and to understand their meaning we have to refer to various dictionaries.

That the definition/meaning of '**building**' as contained in various dictionaries is reproduced below:

Cambridge Dictionary

A structure with walls and a roof, such as a house and a factory.

Merriam-Webster

a usually roofed and walled structure built for permanent use (as for a dwelling)

Dictionary.com

a relatively permanent enclosed construction over a plot of land, having a roof and usually windows and often more than one level, used for any of a wide variety of activities, as living, entertaining, or manufacturing

MacMillan Dictionary

a structure made of a strong material such as stone or wood that has a roof and walls, for example a house

CollinsDictionary.com

A building is a structure that has a roof and walls, for example a house or a factory.

From the above reproduced dictionary meanings/definitions it can be understood that a 'building' is any structure having roof and walls and which is generally used for living or for business, etc. Therefore, any structure would be called as a building only when it has walls and roof over it. Example of building would be home, apartments, office building, factory, cinema, etc.

That the work of construction and maintenance of roads cannot be considered as construction of building as contained in Item 5(b) of Schedule II of the CGST Act.

Further, definition/meaning of '**complex**' as contained in various dictionaries are reproduced below:

Cambridge Dictionary

a large building with various connected rooms or a related group of buildings

Collins Dictionary

A complex is a group of buildings designed for a particular purpose, or one large building divided into several smaller areas.

Merriam-Webster

A building or group of buildings housing related units, an apartment complex, a sports complex

Macmillan Dictionary

a group of buildings together, or a building that has several parts

From the above definition appears that the '*complex*' means group of buildings that is generally designed for a particular purpose such as housing complex comprising of various towers, sports complex, shopping complex, etc. Thus, complex is also similar to building i.e. which has walls and roofs and also which is used by people to either live, or for leisure activity or where they work.

Thus, the activity of the construction and maintenance of road under HAM cannot be covered within the ambit of construction of complex as contained in item 5(b) of the schedule II of the CGST Act.

Lastly item 5(b) of the II schedule of the CGST Act covers **construction of civil structure**. Further, as stated earlier **'civil structure' is nowhere defined in the CGST Act or the rules made thereunder**. Further, as per common parlance the term civil structure would mean the structures in the nature of civil work. ***However, in the authors view the term civil structure appearing in the said entry should be qualified by words building and complex which are preceding the word civil structure.*** Otherwise, if the word civil structure is to be interpreted in the widest import then the words building and structures appearing in the said entry would lose their relevance. Also, from the reading of item 5(b) of the II Schedule

it appears that the word 'civil structure' is preceded by two words i.e. building and complex. Thus, the civil structure, being a residuary term or a general term, should be understood and interpreted in the light of the terms 'building' and 'complex' in terms of the rule of *Ejusdem Generis.*

> *Ejusdem Generis is a Latin term which means of the same kind. The said rule is used to interpret loosely written statutes. Where a law lists specific classes of persons or things and then refers to them in general, the general statements only apply to the same kind of persons or things specifically listed. Example: if a law refers to automobiles, trucks, tractors, motorcycles and other motor-powered vehicles, vehicles would not include airplanes, since the list was of land-based transportation.*

The term *Ejusdem Generis* in other words means words of a similar class. The rule is that where particular words have a common characteristic (i.e. of a class) any general words that follow should be construed as referring generally to that class; no wider construction should be afforded. Normally, general words should be given their natural meaning like all other words unless the context requires otherwise. But when a general word follows specific words of a distinct category, the general word may be given a restricted meaning of the same category. The general expression takes it's meaning from the preceding particular expressions because the legislature by using the particular words of a distinct genus has shown its intention to that effect.

In the case of ***Siddeshwari Cotton Mills (P.) Ltd. V. UOI AIR 1989 SC 1019*** the hon'ble Supreme Court held that

> *that the expression ejus-dem-generis, 'of the same kind or nature'--signifies a principle of construction whereby words in a statute which are otherwise wide but are associated in the test with more limited words are, by implication, given a restricted operation and are limited to matters of the same class or genus as preceding. If a list or string or family of genus-describing terms are followed by wider or residuary or sweeping-up words, then the verbal context and the linguistic implications of the preceding words limit the scope of such words.*

The hon'ble Supreme Court in the case of ***Grasim Industries Limited V. Collector of Customs AIR 2002 SC 1766*** held that

> *the rule of ejusdem generis applies only when*
>
> *a) the statute enumerates the specific words,*

b) the subjects of enumeration constitute a class or category,

c) that class or category is not exhausted by the enumeration,

d) the general terms follow the enumeration and

e) there is no indication of a different legislative intent

Further, in the case of ***Asst. Collector of Central Excise, Guntur V. Ramdeo Tobacco Company AIR 1991 SC 506*** the Hon'ble Supreme Court held that

the rule of ejusdem generis is generally invoked where the scope and ambit of the general words which follow certain specific words (which have some common characteristic and constitute a genus) is required to be determined. By the application of this rule the scope and ambit of the general words which follow certain specific words constituting a genus is restricted to things ejusdem generis with those preceding them, unless the context otherwise requires. Further, it was held that on careful consideration we are in respectful agreement with the view expressed in the aforesaid decisions that the wide expression 'other legal proceeding' must be read ejusdem generis with the preceding words 'suit' and 'prosecution' as they constitute a genus.

In terms of Notification No 15/2017-CT(R) the word 'civil structure' is preceded by the words 'building' and 'complex'. The words building and complex belongs to a particular class and refer to structures having roof and walls. Thus, as per the author's view the word civil construction as appearing in item 5(b) of II schedule of the CGST Act should include only those structures that are akin to buildings and complexes.

This is also evident from the fact that there are two separate entries appearing in schedule II of the CGST Act—name entry 5(b) and 6(a) the existence of these two separate entries within the same schedule clearly shows that all the construction works do not fall within 5(b), and that it is restricted to construction of buildings, complex and similar civil structures. To quote item 6(a) and 5(b) of Schedule II together:

5. Supply of services

The following shall be treated as supply of services, namely:-

(a) .....

(b) construction of a complex, building, civil structure or a part thereof, including a complex or building intended for sale to a buyer, wholly or partly, except where the entire consideration has been received after issuance of completion certificate, where required, by the competent authority or after its first occupation, whichever is earlier.

6. Composite supply

The following composite supplies shall be treated as a supply of services, namely:—

works contract as defined in clause (119) of section 2; and

The works contract as defined in Section 2(119) of the CGST Act is reproduced below:

*(119). works contract means a contract for building, **construction**, fabrication, completion, erection, installation, fitting out, improvement, modification**, repair, maintenance**, renovation, alteration or commissioning **of any immovable property** wherein transfer of property in goods (whether as goods or in some other form) is involved in the execution of such contract;*

Thus, as evident from the above entry the construction, maintenance and repair of immovable property other than building, complex or civil structure would remain covered within the definition of works contract.

Further, reference is also invited to entry 3(iv) of Notification No. 11/2017-CT(R) i.e. the rate notification, that provides for rate of tax in respect of the works of construction, maintenance and repair of road.

To quote

*(iv) Composite supply of **works contract** as defined in clause (119) of section 2 of the Central Goods and Services Tax Act, 2017 other than that covered by items (i), (ia), (ib), (ic), (id), (ie) and (if) above, supplied by way of construction, erection, commissioning, installation, completion, fitting out, repair, maintenance, renovation, or alteration of,-*

(a) a road, bridge, tunnel, or terminal for road transportation for use by general public;

From the above entry also, it is evident that composite supply of construction, maintenance and repair of road is covered within the definition of works contract. Also, in terms of the act or the rules/notifications made thereunder there is no

restriction on claiming refund of unutilised ITC in case of provision of works contract service.

Reference in this regard is also invited to the judgment of Supreme Court in the matter of ***CCE & Cus., Kerala Versus Larsen & Toubro Ltd.***[7] wherein the Hon'ble Judges has held that works contract is a separate species of contract distinct from contracts for services simpliciter recognized by the world of commerce and law. The relevant portion of the judgement is reproduced below:

> *17. We find that the assessees are correct in their submission that a works contract is a separate species of contract distinct from contracts for services simpliciter recognized by the world of commerce and law as such, and has to be taxed separately as such. In Gannon Dunkerley, 1959 SCR 379, this Court recognized works contracts as a separate species of contract as follows:-*
>
> *To avoid misconception, it must be stated that the above conclusion has reference to works contracts, which are entire and indivisible, as the contracts of the respondents have been held by the learned Judges of the Court below to be. The several forms which such kinds of contracts can assume are set out in Hudson on Building Contracts, at p. 165. It is possible that the parties might enter into distinct and separate contracts, one for the transfer of materials for money consideration, and the other for payment of remuneration for services and for work done. In such a case, there are really two agreements, though there is a single instrument embodying them, and the power of the State to separate the agreement to sell, from the agreement to do work and render service and to impose a tax thereon cannot be questioned, and will stand untouched by the present judgment. (at page 427)*

8.7.4 Conclusion

On the basis of above reasonings the author is of the opinion that the work of construction and maintenance of road, as in the case of HAM, would not be covered within the notification 15/2017-CT(R) and thus, there is no restriction on claiming the refund of unutilized ITC as allowed under Section 54(3)(ii) of the CGST Act.

8.7.5 Formula for Claiming Refund of Unutilized ITC in Case of Inverted Duty Structure

The formula for calculating refund amount in case of inverted duty structure has been prescribed in Rule 89(5) of the CGST Rules.

[7] *2015 (39) S.T.R. 913(S.C.).*

To quote:

(5) In the case of refund on account of inverted duty structure, refund of input tax credit shall be granted as per the following formula:-

Maximum Refund Amount = {(Turnover of inverted rated supply of goods and services) x Net ITC ÷ Adjusted Total Turnover} − tax payable on such inverted rated supply of goods and services.

Explanation:- For the purposes of this sub-rule, the expressions—

(a) ***Net ITC shall mean input tax credit availed on inputs*** *during the relevant period other than the input tax credit availed for which refund is claimed under sub-rules (4A) or (4B) or both; and*

(b) Adjusted Total turnover and relevant period shall have the same meaning as assigned to them in sub-rule (4).

From the above formula it is evident that for computation of Net ITC, the ITC availed only in respect of inputs is considered and the ITC availed on input services and capital goods is not taken into account. Due to such formula of Net ITC, in many cases where the substantive right would be available to claim the refund of unutilised ITC as the ITC has accumulated on account of rate of tax on inputs being higher than rate of tax on output supplies but no refund would be allowed because of the restrictive formula of maximum refund as contained in Rule 89(5).

Illustration

Rate of tax on input	18%
Value of input	100
Tax on inputs	18
Rate of tax on input service	18%
Value of input services	50
Tax on input services	9
Total ITC on input and input services	27
Rate of tax on output	12%
Value of output supply	200
Tax on output	24
Unaccumulated ITC	27 − 24 = 3
However as per formula provided in Rule 89(5) maximum refund available would be	(200 * 18/200) − 24 = − 6

Thus, if the restricting formula of Rule 89(5) of the CGST Rules is applied no refund would be allowed even where there is an inverted duty structure and there is accumulated ITC.

The authors are of the view that in the above case, accumulation of ITC of INR 3 is on account of rate of tax on inputs as well as on input services being higher than the rate of tax on output. Thus, at least part of the accumulated ITC of INR 3 definitely relates to the eligible criteria provided in Section 54(3), i.e. it is accumulated because of rate of tax on input being higher than rate of tax on output supply. In that view of the matter simply reducing the output tax from ITC relating to input is over simplistic. In author's view, the rule could have provided a proportionate method, where the accumulation would be related to inputs, input services and capital goods, and would have allowed refund proportionately. *However, the said formula provided by law has been upheld by the Supreme Court in* **VKC Footsteps (2022) 2 SCC 603,** and hence despite accumulation no refund shall be allowed in the illustration provided above.

Tax Review—Direct Tax

9

Income tax is a direct tax chargeable on the income of the assessees and it is governed by the provisions that are enshrined in the Income Tax Act, 1961. This chapter aims at covering the major provisions of the Income tax that are relevant for HAM based road PPP projects in the country. This chapter provides a detailed discussion on Section 43CB of the Indian Income Tax Act 1961, India and the applicability of the Percentage Completion method on the construction contracts. It further elaborates on the Income Computation and Disclosure Standards issued by the Central Government in terms of Section145 of the Income Tax Act; and the Constitutional validity of ICDS considering Hon'ble Delhi High court judgment in the matter of the Chamber of Tax Consultants and others.

The chapter also provides discussion on the topic of recognizing revenue and computation of Income of such projects in terms of the Income Tax Act read with ICDS III; the rate of income tax that is applicable on the income and discussion regarding the optional rate of tax that is applicable in respect of income derived from the HAM based road PPP projects. All the concepts of Income tax are explained through numerical examples and calculations based on case study of Project Highway.

The key issues that are relevant for the HAM based PPP projects are explained along with the view of the Author and the manner of mitigating risk is also provided.

9.1 Project Highway Case Study—Summary

The case study assumes an award of a national highway project in India called **Project Highway** by National Highways Authority of India (hereinafter referred to as "***NHAI***") as the government agency to a private sector player. The private sector player has incorporated a Special Purpose Vehicle (hereinafter referred to as "***SPV***") namely, ABC Constructions Private Limited (hereinafter referred to as

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_9

"***ACPL"***) who will be the Concessionaire for this Project; and will perform two (2) key activities:

- Construction of Highway; and
- After completion of Construction, Operation and maintenance (hereinafter referred to as "***O&M"***) of Highway for a period of 15 years. Operation and maintenance activities would include regular maintenance as also major maintenance.

In terms of scope of O&M activities, ACPL is required to restore the asset at the end of the term of the concession agreement.

Key relevant assumptions below:

- Cost of construction (civil and structural work) is INR 1200 Cr
- O&M cost to be incurred each year = INR 4 Cr
- Major Maintenance = During 7^{th} year and the 14^{th} year of operation period, INR 30 Cr is estimated to be incurred in respect of major maintenance in each of the said year (in real terms, without considering the impact of inflation)
- ACPL has quoted Bid Project Cost = INR 1500 Cr in respect of construction activity
- ACPL has quoted O&M cost = INR 5 Cr per year in respect of O&M activities which is payable during the operation and maintenance period.

The Bid Project Cost and the O&M cost payable by NHAI to ACPL is as per the bid submitted by ACPL to NHAI. Further, as such the amount quoted as Bid Project Cost and O&M Costs by ACPL is not proportionate to the cost incurred on these activities. For the purpose of this case study, it is assumed that ACPL has submitted the bids in such a manner that the Bid Project Cost which is linked with construction of road is quoted on a higher side, whereas the O&M cost is quoted on a lower side. This means that the Bid Project Cost (price quoted for construction) is loaded with the revenue for O&M activities also.

Estimated cost and revenue *(in real terms without considering the impact of inflation)* is summarized in the table below:

Activities/cost and revenue	Construction (INR Cr)	O&M (INR Cr)	Total (INR Cr)
Cost	1200	4 * 15 + 30 * 2 = 120	1320
Revenue quoted	1500	5 * 15 = 75	1575

The consideration agreed between NHAI and ACPL is to be paid by NHAI in the following manner:

- NHAI shall pay 40% of the **Bid Project Cost** (hereinafter referred to as "***BPC***") in 10 equal instalments of 4% each on achievement of milestones linked with the physical completion of the project.
- Upon Commercial Operation Date (hereinafter referred to as ***"COD"***), ACPL shall be entitled to demand and collect remaining 60% of BPC as Annuity payments. The said 60% shall be paid to ACPL in 30 biannual Annuities. The first installment of annuity payments shall be due and payable within 15 days of the 180th day of COD and remaining instalments shall be due and payable within 15 days of completion of each of the successive six months. Along with the Annuity payments, ACPL would also receive interest calculated at the rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25% on the outstanding balance of annuity payments.
- NHAI shall also pay operation and maintenance costs (as per the bid of the ACPL) during the 15 years of operations of the project.

We shall analyze the income tax implications on HAM projects based on the above case study.

9.2 Section 43CB of the IT Act

Section 43CB of the Income Tax Act, 1961 (hereinafter referred to as "***IT Act***") provides for computation of Income from construction and service contracts. Section 43CB of the IT Act was introduced vide Finance Act, 2018 with retrospective effect from 01 April 2017.

The said provision is extracted herein below:

Computation of income from construction and service contracts.

43CB. (1) The profits and gains arising from a construction contract or a contract for providing services shall be determined on the basis of percentage of completion method in accordance with the income computation and disclosure standards notified under sub-Section (2) of Section 145:

Provided that profits and gains arising from a contract for providing services

(i) with duration of not more than ninety days shall be determined on the basis of project completion method;

(ii) involving indeterminate number of acts over a specific period of time shall be determined on the basis of straight line method.

(2) For the purposes of percentage of completion method, project completion method or straight line method referred to in sub-Section (1)—

(i) the contract revenue shall include retention money;

(ii) the contract costs shall not be reduced by any incidental income in the nature of interest, dividends or capital gains.

The said section was introduced with the objective to specifically provide for the manner in which the income in respect of construction and service contracts needs to be computed. The relevant portion of statement of Objects and Reasons as attached along with the Finance Bill, 2018 are reproduced below:

Clause 15 of the Bill seeks to insert a new Section 43CB in the Income-tax Act relating to computation of income from construction and service contracts.

The proposed new section provides that profits and gains of a construction contract or a contract for providing services shall be determined on the basis of percentage of completion method in accordance with the income computation and disclosure standards notified under sub-Section (2) of Section 145. It is further proposed to provide that in the case of a contract for providing services with duration less than ninety days, the profits and gains shall be determined on the basis of project completion method. It is also proposed to provide that in the case of a contract for provision of services involving indeterminate number of acts over a specific period of time, the profits and gains arising from such contract shall be determined on the basis of a straight line method.

It is also proposed to provide that for this purpose the contract revenue shall include retention money and the contract costs shall not be reduced by any incidental income in the nature of interest, dividends or capital gains.

This amendment will take effect retrospectively from 1st April, 2017 and will, accordingly, apply in relation to the assessment year 2017–2018 and subsequent years.

Thus Section 43CB provides for computation of Income in respect of:

(a) Construction Contracts;
(b) Contract for providing services

Before introduction of the said section, it was often debated as to whether the income in respect of the construction contract needs to be recognised on the basis of Percentage of Completion Method (hereinafter referred to as ***"POCM"***) or Project Completion Method. Although, of late AS 7 (Accounting Standard issued by the Institute of Chartered Accountants of India to provide for the manner accounting for construction contracts) prescribed that the revenue from construction contracts should be recognized only on POCM basis, however, assessees used to argue that the revenue for the purpose of Income tax need not be recognised on the basis of AS-7 and the assessee should be allowed to compute income following the contract completion method. To put to rest the whole issue, the new Section 43CB was introduced in the IT Act.

Further, it is important to note that Section 43CB was introduced in 2018 but it was made effective retrospectively from 01 April 2017. This is so because the said section prescribes for computing income in accordance with Income Computation and Disclosure Standards (hereinafter referred to as "***ICDS***") notified under Section 145(2). Further, ICDS were already issued with effect from 01 April 2017 and this perhaps was behind the said section having been introduced retrospectively w.e.f. 01 April 2017.

It is pertinent to note that the expression "**construction contract**" has not been defined in the IT Act. However, the expression is defined in the ICDS, which we have discussed later in this chapter.

Further, Section 43CB provides that the profits and gains arising from construction contracts shall be computed by applying:

(a) percentage of completion method;
(b) Further, it is specifically provided in the Section itself that the POCM shall be applied in accordance with ICDS notified under Section 145(2) of the IT Act.

Section 43CB(2) also provides that Contract revenue shall include retention money. It is also provided that the contract costs shall not be reduced by any incidental income in the nature of interest, dividends or capital gains. All these aspects are discussed in detail later in this chapter.

9.3 Method of Accounting—Section 145 of the IT Act

Section 145 of the IT Act provides the method of accounting to be followed by the assessee for computing the Income chargeable under the head "*Profits and gains of business or profession (PGBP)*" or "*Income from other sources*". Section 145 of the IT Act is reproduced below for ready reference:

Method of accounting.

145. (1) Income chargeable under the head Profits and gains of business or profession or Income from other sources shall, subject to the provisions of sub-Section (2), be computed in accordance with either cash or mercantile system of accounting regularly employed by the assessee.

(2) The Central Government may notify in the Official Gazette from time to time income computation and disclosure standards to be followed by any class of assessees or in respect of any class of income.

(3) Where the Assessing Officer is not satisfied about the correctness or completeness of the accounts of the assessee, or where the method of accounting provided in sub-Section (1) has not been regularly followed by the assessee, or income has not been computed in accordance with the standards notified under sub-section (2), the Assessing Officer may make an assessment in the manner provided in Section 144.

Thus, as per Section 145(1), which is subject to sub-Section (2), income chargeable under the head PGBP be computed in accordance with either cash or mercantile system of accounting. Further, as per Section 145(2), Central Government may notify ICDS to be followed by:

(a) any class of assessees; or
(b) in respect of any class of income.

Notification No. 87/2016 dated 29 June 2016 notifying ICDS

Central Government has, vide Notification No. 87/2016 dated 29 June 2016, issued 10 ICDS to be applied by all the assessees (other than an individual or a Hindu undivided family who is not required to get his accounts of the previous year audited in accordance with the provisions of Section 44AB of the said Act), following mercantile system of accounting, for the purposes of computation of income chargeable to income-tax under the head PGBP or income from other sources. The said Notification was issued by the Government in exercise of the powers conferred by sub-section (2) of Section 145 of the Income Tax Act.

In the said Notification it is specifically mentioned that this Notification shall apply to the AY 2017–18 and subsequent AY.

Post issuance of the said notification, the Central Board of Direct Taxes issued Circular No. 10 of 2017 dated 23 March 2017 to provide clarifications, by way of FAQs, in respect of application of ICDS for computation of income under the head PGBP and Income from other sources.

In 2017, Hon'ble Delhi High Court in the case of ***The Chamber of Tax Consultants & Anr. v. Union of India & Ors. W.P. (C) 5595/2017*** had the occasion to decide the constitutional validity of Section 145 of the IT Act, requiring compliance with the Income Computation and Disclosure Standards.

The High Court, *inter alia*, held that Section 145(2), as amended, has to be read down to restrict power of the Central Government to notify ICDS that do not seek to override binding judicial precedents or provisions of the Act. The power to enact a validation law is an essential legislative power that can be exercised, in the context of the Act, only by the Parliament and not by the executive. If Section 145 (2) of the Act as amended is not so read down it would be ultra vires the Income Tax Act and Article 141 read with Article 144 and 265 of the Constitution of India. Further, the Hon'ble Court also held that the ICDS is not meant to overrule the provisions of the Income Tax Act or the Rules issued thereunder, and the judicial precedents applicable to the provisions of the IT Act as they stand.

One of the issues that were framed was: *Whether the amendments to Section 145 are an instance of delegation by the Parliament of essential legislative powers to the Central Government?*

The High Court in its decision dated 08 November 2017 noted the intent of Circular No. 10 of 2017 issued in form of FAQs by CBDT, which states that the ICDS is intended to prevail over judicial precedents contrary to what has been provided in the ICDS.

The Court posited the settled legal position with respect to excessive delegation and pointed out that amendments to Section 145 permit the Central Government, as a delegatee of the legislature, to notify standards for income computation but not to bring about changes to settled principles as laid down in judicial precedents which seek to interpret and explain statutory provisions contained in the Act. Further, it was held:

> *37….If such power is permitted to be exercised by the central government then clearly it would be an instance of unfettered power in the hands of the executive which is unguided and uncanalised.*
>
> *39. To elaborate, if the power to notify standards has to be exercised consistent with the recognised ASs that do not contradict any principle recognised in the Act or as explained in judicial precedents, it would be a permissible exercise of the delegated power of notifying ASs. However, where the notified AS or as in this case the ICDS, seeks to alter the system of accounting, or according accounting or taxing treatment to a particular transaction, then it will require the legislature to step in to amend the Act to incorporate such change. This may be unique to a fiscal statute like the Act. However, in the guise of a delegated power, the Central Government cannot do what is otherwise legally impermissible.*
>
> *42. The above legal proposition is well settled and has been followed in a number of subsequent decisions. Therefore, it is only a competent legislature that can make a validation law to override judicial precedents and that too by actually removing the defect pointed out by such precedent. Such a power is not available to the executive. In other words, where there is a binding judicial precedent, by virtue of Articles 141 and 144 of the Constitution, it is not open to the executive to override it unless there is an amendment to the Act by way of a validation law.*

In conclusion, the Court held that Section 145(2) has to be read down to restrict power of the Central Government to notify ICDS that do not seek to override binding judicial precedents or provisions of the Act. The said exercise was undertaken in order to preserve the constitutionality of ICDS. To quote:

> *43. To that extent, Section 145 (2), as amended, has to be read down to restrict power of the Central Government to notify ICDS that do not seek to override binding judicial precedents or provisions of the Act. The power to enact a validation law is an essential legislative power that can be exercised, in the context of the Act, only by the Parliament and not by the executive. If Section 145 (2) of the Act as amended is not so read down it would be ultra vires the Act and Article 141 read with Article 144 and 265 of the Constitution.*
>
> *...*
>
> *98. As already concluded, if the ICDS is permitted, in exercise of the delegated power of the central government under Section 145 (2) of the Act, to override a governing principle recognised by the Act or the Rules or judicial precedents, it would be ultra vires the Act. It would then render the ICDS as an instance of excessive delegation of essential legislative functions. The books of account prepared on the basis of a valid accounting method can be rejected by an AO for not complying with the ICDS. This virtually permits an AO to disregard binding judicial precedents.*

Next issue that was raised before the Court was: Are the ICDS an instance of excessive delegation of legislative powers? Whether the impugned ICDS are contrary to the settled law as explained in various judicial precedents and are, therefore, liable to be struck down?

To decide the issue, the Court set out to look at each of the ICDS which are contrary to or seek to overcome binding judicial precedents. ICDS III was challenged only to the extent of Para 10 and Para 12. The same is discussed in the next section titled: Income Computation and Disclosure Standard III relating to Construction Contracts.

9.4 Income Computation and Disclosure Standard III (ICDS III)—Construction Contracts

9.4.1 Scope

As mentioned before, Notification No. 87/2016 dated 29.09.2016 contains 10 ICDS to be followed for computing the income under the head PGBP and Income

from other sources. Further, ICDS III relates to construction contracts. Furthermore, as per the scope, the said ICDS III should be applied in *determination of income* for a *construction contract* of a contractor.

Further, the expression, construction contract has been defined in Para 2(1)(a) of ICDS III as:

> *(a) Construction contract is a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in terms of their design, technology and function or their ultimate purpose or use and includes:*
>
> *(i) contract for the rendering of services which are directly related to the construction of the asset, for example, those for the services of project managers and architects;*
>
> *(ii) contract for destruction or restoration of assets, and the restoration of the environment following the demolition of assets.*

Thus, construction contract has been defined to mean the contract ***specifically negotiated for the construction of an asset or combination of assets***. Further, the definition of construction contract specifically includes the contract for restoration of Asset.

As per the clause 2.1 read with Clause 12.3 of MCA, the concessionaire is required to construct the road i.e. the asset. Further, MCA requires the Concessionaire to operate and maintain the constructed road for the period of 15 years from COD.

In terms of Clause 17.11 of MCA the concessionaire is required to restore the asset. Clause 17.11 of MCA provides that "*save and except as otherwise expressly provided in this Agreement, in the event that the Project or any part thereof suffers any loss or damage during the Concession Period from any cause whatsoever, the Concessionaire shall, at its cost and expense, rectify and remedy such loss or damage forthwith so that the Project confirms to the provisions of this Agreement*". Further, Clause 17.1.1(e) provides that during the O&M period the Concessionaire is obliged to undertake major maintenance such as resurfacing, repairs to structure, and repairs and refurbishment of system and equipment. Further, the Author have received inputs from the industry that the NHAI is asking the concessionaires to undertake the Major maintenance thrice during the period of 15 years with the specific requirement that the third round of major maintenance should be undertaken during the last year of O&M. Thus, it is evident that in terms of the Concession Agreement the concessionaire is required to restore the asset. By restoration it means that the concessionaire during the O&M period is required to maintain the road in original/ good condition.

As can be seen from above that in terms of the MCA the concessionaire is required to undertake the following activities:

(a) Construction of project highway;
(b) Operate and maintain the constructed highway. In terms of maintenance the Concessionaire is also required to restore the asset.

Thus, the concession agreement entered in respect of HAM based road PPP projects would be covered within the definition of construction contract. This is so because as per the concession agreement the concessionaire is required to construct an asset being the road/ highway. Further, in author's view even the activity of Operation and Maintenance is covered within the ambit of construction contract as the same requires the concessionaire to restore the asset or to maintain the road so as to keep the road in original or normal working condition.

Further, in the definition clause i.e. clause 2 of the ICDS III it is clarified that the words and expressions used but not defined in ICDS III shall have the meaning respectively assigned to them in the Act.

9.4.2 Combining and Segmenting Construction Contracts

Para 5, 6, 7, 8 of the ICDS III provides for Combining and Segmenting Construction Contracts. Para 5 of ICDS III has been reproduced below:

> *5. The requirements of this Income Computation and Disclosure Standard shall be applied separately to each construction contract except as provided for in paragraphs 6, 7 and 8 herein. For reflecting the substance of a contract or a group of contracts, where it is necessary, the Income Computation and Disclosure Standard should be applied to the separately identifiable components of a single contract or to a group of contracts together.*

Thus, as per para 5, subject to Para 6, 7 and 8, ICDS III shall be applied separately in respect of each construction contract. Further, the said para itself provides that for reflecting substance of contract, ICDS should be applied to the separately identifiable components of a single contract. From para 5 it is evident that generally ICDS III shall be applied to the construction contract treating it to be a single contract, however, to reflect the substance of the contract, wherever it is necessary, ICDS III shall be applied to the separately identifiable components of a single contract.

In HAM based road PPP project a single concession agreement is awarded for construction as well as O&M. Further, the concessionaire quotes separate price for construction and O&M only for the purposes of determining the timing of cash flows. The concession is awarded to the concessionaire whose NPV of both

the BPC and O&M cost is minimum. In terms of the concession agreement, the concessionaire is necessarily required to construct the road as well as undertake the O&M. The concessionaire has no choice to undertake either of the activity i.e. construction of O&M. As per the concession agreement it is the concessionaire's responsibility to maintain the road for 15 years after COD and failure to do so amounts to concessionaire's default.

Thus, in Author's view, in respect of HAM based road PPP projects, ICDS III shall be applied to whole concession agreement treating it to be a single construction contract.

Recent Amendment

As per the latest amendment made in model concession agreement, the contractor has to make the bid only for the BPC, and the payment for O&M is fixed as a percentage of the BPC itself. Therefore, in the authors' view this will not change the position and would only go on to reinforce that it is one single composite contract which in totality should be considered to be a construction contract. Thus, even in respect of the bids made in accordance with the latest amendment in model concession agreement, in Authors' view, ICDS III shall be applied to whole concession agreement treating it to be a single construction contract.

For the sake of completeness, we are also referring to Para 6, 7 and 8 of the ICDS-III.

6. Where a contract covers a number of assets, the construction of each asset should be treated as a separate construction contract when:

(a) separate proposals have been submitted for each asset;

(b) each asset has been subject to separate negotiation and the contractor and customer have been able to accept or reject that part of the contract relating to each asset; and

(c) the costs and revenues of each asset can be identified.

7. A group of contracts, whether with a single customer or with several customers, should be treated as a single construction contract when:

(a) the group of contracts is negotiated as a single package;

(b) the contracts are so closely interrelated that they are, in effect, part of a single project with an overall profit margin; and

(c) the contracts are performed concurrently or in a continuous sequence.

8. Where a contract provides for the construction of an additional asset at the option of the customer or is amended to include the construction of an additional asset, the construction of the additional asset should be treated as a separate construction contract when:

(a) the asset differs significantly in design, technology or function from the asset or assets covered by the original contract; or

(b) the price of the asset is negotiated without having regard to the original contract price.

Para 6 of ICDS provides for segmenting a construction contract in cases where the contract covers a number of assets. Further, as per para 6 of the ICDS segmenting of contract is required only when the following conditions are met:

- Contract covers construction of number of assets.
- separate proposals have been submitted for each asset;
- each asset has been subject to separate negotiation and the contractor and customer have been able to accept or reject that part of the contract relating to each asset; and
- the costs and revenues of each asset can be identified.

Para 7 provides that group of contracts, either with single customer or different customers would be treated as single construction contract if all the following conditions are complied with:

- the group of contracts is negotiated as a single package;
- the contracts are so closely interrelated that they are, in effect, part of a single project with an overall profit margin; and
- the contracts are performed concurrently or in a continuous sequence.

Para 8, deals with the situation where contract provides for the construction of an additional asset at the option of the customer or is amended to include the construction of an additional asset. As per para 8 the construction of the additional asset should be treated as a separate construction contract where all the following conditions are complied with:

- the asset differs significantly in design, technology or function from the asset or assets covered by the original contract; or
- the price of the asset is negotiated without having regard to the original contract price.

From the aforesaid paras it appears that for the purpose of ICDS III a single construction contract can be treated as separate construction contracts only when the specified conditions are met. However, in case of HAM based road PPP projects the conditions/ requirements of para 6 and para 8 are not met thus, in authors view ICDS III be applied to the concession agreement treating it to be a single contract without bifurcating the same into separate identifiable components.

9.5 Meaning of Contract Cost and Contract Revenue

9.5.1 Contract Cost

Contract cost is defined in para 12 of ICDS III as:

> *12. Contract costs shall comprise of:*
>
> *(a) costs that relate directly to the specific contract;*
>
> *(b) costs that are attributable to contract activity in general and can be allocated to the contract;*
>
> *(c) such other costs as are specifically chargeable to the customer under the terms of the contract; and*
>
> *(d) allocated borrowing costs in accordance with the Income Computation and Disclosure Standard on Borrowing Costs.*
>
> *These costs shall be reduced by any incidental income, not being in the nature of interest, dividends or capital gains, that is not included in contract revenue.*

Thus, para 12 of the ICDS III provides various constituents of construction cost. As per **Para 12 (a)** construction cost includes costs that relate directly to the specific contract such as material cost, labour cost, sub-contractor charges, architect fee, hire charges for plant and machinery, soil testing charges etc. In this regard guidance can also be taken from AS 7 as the same also pertain to construction contracts. Para 16 of AS 7 provides examples/ illustrations of the costs that relate directly to specific contracts and the same are reproduced below:

(a) site labour costs, including site supervision;
(b) costs of materials used in construction;
(c) depreciation of plant and equipment used on the contract;
(d) costs of moving plant, equipment and materials to and from the contract site;
(e) costs of hiring plant and equipment;
(f) costs of design and technical assistance that is directly related to the contract;
(g) the estimated costs of rectification and guarantee work, including expected warranty costs; and
(h) claims from third parties.

Further in terms of **Para 12(b),** construction cost includes costs that are attributable to contract activity in general and that can be allocated to the contract. These expenses are generally the overhead expenses which are allocated to the contract. Further, para 17 of AS 7 gives guidance as to what costs can be considered to be attributable to contract activity in general and can be allocated to the contract. To quote:

> *17. Costs that may be attributable to contract activity in general and can be allocated to specific contracts include:*
>
> *(a) insurance;*
>
> *(b) costs of design and technical assistance that is not directly related to a specific contract; and*
>
> *(c) construction overheads.*
>
> *Such costs are allocated using methods that are systematic and rational and are applied consistently to all costs having similar characteristics. The allocation is based on the normal level of construction activity. Construction overheads include costs such as the preparation and processing of construction personnel payroll. Costs that may be attributable to contract activity in general and can be allocated to specific contracts also include borrowing costs as per Accounting Standard (AS) 16, Borrowing Costs.*

In HAM based road PPP Projects, separate SPV is required to be incorporated in respect of each project. Meaning thereby that one SPV is allowed to undertake only one project. Thus, there is no question of allocation and hence all the cost incurred by the SPV would become part of Contract cost.

Para 12(c) further includes the costs which are specifically chargeable to customer under the contract. These may include the cost of research that is agreed to

be re-imbursed by the customer. In respect of HAM based PPP projects the cost of utility shifting may be included in such part.

By way of Para 12(d) borrowing cost is included within contract cost. Further, only the borrowing cost which is allocated to the contract in accordance with the ICDS IX (ICDS on Borrowing Cost) will be included within contract cost.

Project Highway

As per the case study ACPL has been awarded the contract of construction of highway along with its operation and maintenance under HAM mode. For this purpose ACPL has entered into a single concession agreement with the Authority.

Thus, in terms of para 5 of ICDS III, all the requirements of this ICDS needs to be applied on the said concession agreement entered into between ACPL and the authority treating it to be a single indivisible contract.

Further in terms of para 12 of ICDS III the contract cost of the contract awarded to ACPL shall be INR 1320 Cr i.e. the total cost that would be incurred in respect of construction of road as well as for its operation and maintenance.

The Delhi High Court in ***Chamber of Tax Consultants*** (supra) discussed the validity of Para 12 of ICDS-III read with Para 5 of ICDS-IX. It was observed that Para 12 of ICDS III read with Para 5 of ICDS IX provide that no incidental income can be reduced from borrowing cost. On the scrutiny of the same, it was held to be contrary to the decision of Supreme Court in the case of ***CIT v. Bokaro Steel Ltd. (1999) 236 ITR 315 (SC)***. In the said decision of Bokaro Steel (supra), it was held that if an Assessee receives any amounts which are inextricably linked with the process of setting up of its plant and machinery, such receipts will reduce the cost of its assets. The Delhi High Court held:

76. Para 12 of ICDS III read with para 5 of ICDS IX, dealing with borrowing costs, makes it clear that no incidental income can be reduced from borrowing cost. This is contrary to the decision of the Supreme Court in CIT v. Bokaro Steel Limited (1999) 236 ITR 315 wherein it was held that if an Assessee receives any amounts which are inextricably linked with the process of setting up of its plant and machinery, such receipts would go to reduce the cost of its assets. ***Plainly therefore, to the extent that ICDS III is interpreted and applied in a manner contrary to the law settled by the various decisions of the Supreme Court and the High Courts, it cannot be sustained.***

Thus, the Hon'ble High Court held that to the extent that ICDS III is interpreted and applied in a manner contrary to law settled by various decisions of the Supreme Court and the High Courts, it cannot be sustained.

However, now ICDS has the backing of the provision of Section 43CB which specifically provides that contract cost shall not be reduced by any incidental income in the nature of interest, dividends or capital gains. Hence to that extent the income tax would now be required to be computed on the basis of the statutory provisions contained in the Income tax Act.

In the last line of Para 12 of ICDS III, it is provided that any incidental income which has not been included in the contract revenue shall be reduced from the contract cost. Furthermore, it is categorically stated that the said incidental income should not be in the nature of interest, dividend or capital gain. This is in line with provisions of Section 43CB. This means that if the concessionaire is receiving any interest, dividend or any capital gain from the construction contract then it is specifically provided that the same shall not be reduced from the contract cost.

In the HAM projects, post COD the concessionaire receives interest on annuity payments. This interest is in the nature of income, as such have no concern with the cost. Further and in any case, in terms of clear wordings of last line of para 12 the said interest shall not be reduced from contract cost. Further, in the later part of this chapter we have discussed the income tax treatment of the said interest which is received by Concessionaire from the Authority.

9.5.2 Contract Revenue

Contract revenue is defined in para 10 of ICDS III.

> *10. Contract revenue shall comprise of:*
>
> *(a) the initial amount of revenue agreed in the contract, including retentions; and.*
>
> *(b) variations in contract work, claims and incentive payments:*
>
> *i. to the extent that it is probable that they will result in revenue; and.*
>
> *ii. they are capable of being reliably measured.*

Thus, in terms of para 10 of the said ICDS the contract revenue shall comprise of the initial amount of revenue agreed in the contract, including retentions. In this regard it is important to note that "retentions" has been defined in para 2(1)(d) of ICDS III in following manner:

> *(d) "Retentions" are amounts of progress billings which are not paid until the satisfaction of conditions specified in the contract for the payment of such amounts or until defects have been rectified.*

Thus, from the above definition it is evident that retentions are that portion of the billing which are not paid until:

(a) the satisfaction of completion of condition specified in the contract for payment of such amounts; or
(b) defects have been rectified.

Retentions a very common feature in the construction contracts. Retention is a portion of the bill amount which is held back by the contractee while making payment to the contractor. Retention money is either paid at the time when the construction is complete or it is paid after lapse of some-time from the completion of construction, may be when the defect liability period is over, as the case may be. Retention is generally held to ensure that a contractor performs all of its obligations as per the terms of the contract and that he does not leave the work in between and that he completes the whole of the construction work as per the specifications agreed in the construction contract. Even Section 43CB specifically provides that for the purpose of percentage completion method contract revenue shall include retention.

In case of HAM projects, NHAI generally do not retain any amount from the agreed payments/ milestone payments to be made to the Concessionaire. This is so because in HAM based PPP projects the payment of only 40% of the BPC is made during the period of construction and the remaining 60% is paid in 30 bi-annual instalments over the period of 15 years. However, it is not a fixed rule and in some cases NHAI do retain some amount from the payments made to the Concessionaire. These may include the cases where the Concessionaire does not meet the timelines to complete the project milestone. Thus, where the Concessionaire does not complete the HAM project within the timelines specified in the Concession Agreement the NHAI may retain/ withhold some amount from the payments to be made to the Concessionaire. It has always been under dispute that whether retention money would be considered to be accrued until the right to realise the same arises. In various judgments it was held that retention money does not accrue when the invoice is issued, and it only gets due when the terms and conditions as stipulated in the contract are fulfilled regarding payment of retention money.

In the case of ***CIT Vs. Simplex Concrete Pipes (I) 1989 (179) ITR 8 Cal.*** the question before the hon'ble Calcutta High Court was "*Whether, on the facts and in the circumstances of the case and in view of the fact that the assessee follows the mercantile system of accounting, the Tribunal was right in holding that the retention money in respect of the jobs completed by the assessee during the relevant previous*

year should not be taken into account in computing the profits and gains of the assessee's business for the assessment year 1965–66"?

In this regard the Hon'ble Calcutta High Court held that the entire invoice amount does not became due immediately upon the submission of bills but 5–10% of the bills, as the case may be, was withheld as security. The assessee follows the mercantile system of accounting and, therefore, it must credit its accounts as and when the right to receive any sum accrues. There cannot be any dispute that only in respect of 90% of the bills, in the first instance, when the job is done accrues to the assessee and the remaining 5–10% becomes due in accordance with the terms of the respective contract. In some cases, as per the contract, the right to receive payment of 5% accrues on completion of work and only the remaining 5% is deferred for a further period.

Further, it was held that on the terms and conditions of the contract, it cannot be held that either 10% or 5% as the case may be, being the retention money, became legally due to the assessee on the completion of the work. Only after the assessee fulfils the obligation under the contract, that the retention money would be released and the assessee would acquire the right to receive such retention money. Therefore, on the date when the bills were submitted, having regard to the nature of the contract, no enforceable liability has accrued or arisen and, accordingly, it cannot be said that the-assessee had any right to receive the entire amount on the completion of the work or on the submission of bills. The assessee had no right to claim any part of the retention money till the verification of satisfactory execution of the contract.

In the case of ***Anup Engineering Ltd. Vs. CIT(2001) 165 CTR Guj 21*** the question before the Gujarat High Court was "*whether on the facts and in the circumstances of the case, the Tribunal was right in law in disallowing the claim of INR 300000*". In the said case it was explained that by virtue of Section 5 of the IT Act the income is taxable when it accrues, arises or is received or when, by fiction of law, it is deemed to accrue or arise or is deemed to be received. Further, the Hon'ble court elaborated if the assessee acquires the right to receive the income, the income is said to have accrued to him, though it may be received later on. In the instant case the Hon'ble court held that, unless and until a debt is created in favour of assessee, which is due by somebody, it cannot be said that the assessee has acquired a right to receive income or that the income has accrued to him. It was further held that it is crystal clear that INR 3 lakhs, which was deducted from the sales account by the assessee was rightly claimed by the assessee by way of deduction as the amount has never become income of the assessee.

In the case of ***DIT Vs. Ballast Nedam International 2013 (355) ITR 300 (Guj.)*** the question before the Gujarat High Court was "*whether the sum of INR 6.24 Cr (rounded off), which represented retention money for fulfilment of the contract by the assessee should be treated as accrued income*". Following the case of *CIT Vs. Simplex* and *Anup Engineering Ltd. Vs. CIT supra* it was held, if there is no immediate right to receive the retention money, the said amount cannot be said to have accrued to the assessee.

Thus, vide various case laws it has been consistently held that in case of retention money the assessee gets no right to claim any part of the retention money till the verification of satisfactory execution of the contract is concluded and, therefore, if there is no immediate right to receive the retention money, the said amount cannot be said to have accrued to the assessee.

Now by virtue of Section 43Cb read with ICDS III it has been specifically provided that retention money would be included in contract revenue while applying the percentage completion method. Thus, it appears that the controversy pertaining to retention money has been put to rest by virtue of insertion in Section 43CB.

Inclusion of variation

Further, the contract revenue, as defined in ICDS III also includes variation in the contract work, claims and incentive payment where [para 10(b) of ICDS III]:

i. It is probable that the variation will result in revenue; and
ii. The variation is capable of being reliably measured

Thus, any variations in revenue arising on account of escalation/ inflation may become part of contract revenue if the variation on account of escalation/ inflation is recoverable from the customer and the said variation is capable of being ***reliably measured***. Para 10(b) of ICDS III is similar to para 10(b) of AS 7 issued by ICAI. Thus, para 11 to 14 of AS 7 [paras elaborating para 10(b) of AS] may be referred to understand the implication of para 10(b) of ICDS III.

In case of HAM, the payment made to contractor viz the BPC as well as the O&M payments are subject to inflation. In terms of para 23.2 of the MCA, the BPC shall be revised from time to time to reflect the variation in price index occurring after the reference index date immediately preceding bid date. Likewise in para 23.7.3 of the MCA, it is provided that the O&M payments are adjusted to the Price Index Multiple on the reference index date preceding the due date of payment. Further the manner of application of price index multiple was explained by way of the following illustration:

If the First Year O&M cost is INR 1 Cr;

The O&M cost for the second year of the operation period is to be computed in following manner:

The price index on the Reference Index Date preceding the bid date is 200. The price index on the Reference Index Date preceding the due date of payment of O&M cost for second year is 240, implying a price index multiple of 1.2, then the O&M Payment for that installment shall be the product of first year O&M cost and the applicable Price Index Multiple, which product shall be INR 1.2 Cr.

Thus, both the BPC and O&M Costs are adjusted for the price index multiple i.e. inflation index. Therefore, undisputedly the BPC and O&M costs is subject to variation on account of inflation.

As per authors' view, the variation in BPC and O&M to take place on account of inflation shall be included for computing the contract revenue as:

a. It is probable that the variation would result in increase in revenue;
b. The variation is capable of being reliably measured. Of course, the variation on this account shall be considered on a conservative basis. The Concessionaire at the time of bidding itself, estimates the effect of inflation on the contract cost and contract revenue. Basis the said estimate the concessionaire bids for any project. Thus, it can be said that the effect of inflation can be reliably measured by the concessionaire on estimate basis.

Reasonable Certainty in ultimate collection

Further in para 9 of ICDS III it is provided that Contract revenue shall be recognized when there is ***reasonable certainty*** of its ultimate collection. Reasonable certainty here means that the contractor/ concessionaire shall recognize the contract revenues only if there is no doubt about collection of such revenue.

In case of HAM, the contracts are entered with NHAI, being government authorities, thus there is generally reasonable certainty of their ultimate collection.

However, in certain situations such as change in scope, shifting of utility, etc., where the consideration is negotiated between NHAI and the concessionaire at a later date during the course of construction. Thus, the revenue of these activities would be recognised only when the concessionaire feels that there is a reasonable certainty of its ultimate collection i.e. when the NHAI agrees to pay the specified sum of money in respect of these activities.

9.5.3 Recognition of Contract Revenue and Expense

Provision relating to recognition of contract revenue and contract expense are contained in para 16 to 20 of ICDS III. The said paras are reproduced below for ready reference:

> *16. Contract revenue and contract costs associated with the construction contract should be recognized as revenue and expenses respectively by reference to the* ***stage of completion*** *of the contract activity at the reporting date.*
>
> *17. The recognition of revenue and expenses by reference to the stage of completion of a contract is referred to as the percentage of completion method. Under this method, contract revenue is matched with the contract costs incurred in reaching the stage of*

completion, resulting in the reporting of revenue, expenses and profit which can be attributed to the proportion of work completed.

18. The stage of completion of a contract shall be determined with reference to:

(a) the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs; or

(b) surveys of work performed; or

(c) completion of a physical proportion of the contract work.

Progress payments and advances received from customers are not determinative of the stage of completion of a contract.

19. When the stage of completion is determined by reference to the contract costs incurred upto the reporting date, only those contract costs that reflect work performed are included in costs incurred upto the reporting date. Contract costs which are excluded are:

(a) contract costs that relate to future activity on the contract; and

(b) payments made to subcontractors in advance of work performed under the subcontract.

20. During the early stages of a contract, where the outcome of the contract cannot be estimated reliably contract revenue is recognised only to the extent of costs incurred. The early stage of a contract shall not extend beyond 25% of the stage of completion.

In terms of para 16, contract revenue and contract cost should be recognized to the extent of **stage of completion** of the contract activity achieved at the reporting date. Further para 17 provides that recognition of revenue and expenses/ cost by reference to the stage of completion of a contract is referred to as the ***percentage of completion method*** (POCM). Further, para 17 elaborates that under POCM contract revenue is matched with contract cost incurred in reaching the stage of completion on the reporting date. Thus, POCM results in reporting of the expense, revenue and profit which can be attributed to achieving the stage of completion.

In terms of para 18 of ICDS III stage of completion can be determined on the basis of any of the following method:

a. the proportion that contract costs incurred for work performed upto the reporting date bear to the estimated total contract costs; or
b. surveys of work performed; or
c. completion of a physical proportion of the contract work.

Thus, any of the above method as provided in para 18 can be used for determining the stage of completion. Based on the stage of completion contract revenue as well as contract cost are reported for the purpose of computation of Income Tax.

Further, as per para 19 of ICDS III, where stage of completion is determined on the basis of contract cost, the contract cost incurred for performing the actual physical work are to be taken into account. Meaning thereby that the cost incurred for future activity such as pre-paid expenses or advances paid to the sub-contractors are not to be included while computing the contract cost incurred till reporting date.

Example

Where the contractor has paid advance of INR 5 Cr to the vendor of bitumen (major raw material for constructing the road) but the bitumen would be delivered to the concessionaire in the next year then while computing stage of construction by applying the method of contract cost incurred till the reporting date the amount of INR 5 Cr paid to the vendor of bitumen would not be included in the total cost incurred.

Example

In the year 2019–20 the contractor has made advance payment of INR 2 Cr to sub-contractor. In such a case for computing the stage of completion the said advance payment of INR 2 Cr would not be included in the contract cost incurred during the year 2019–20 and same would be included in the contract cost only in the year 2020–21 when the said advance is adjusted towards the work done by the sub-contractor.

Recognition of the Contract Cost and Contract revenue by following various methods as provided in para 18 of ICDS III has been explained below by way of following illustration.

Illustration

The total contract cost is 100 Cr and the revenue is 120 Cr; in the year 2018–19 40 Cr of contract cost is incurred. Further, as per survey of the independent engineer, in the year 2018–19, 35% of work is completed.

Recognition as per proportionate cost method

Contract cost to be recognised is INR 40 Cr

*Percentage completion is 40/100*100 = 40%*

*Revenue to be recognized for the year 2018–19 is 40%*120 = INR 48 Cr*

Recognition as per survey method

As per independent engineer 35% of construction contract is complete. Thus, 35% of cost (i.e. 35% of INR 100 Cr = 35 Cr) and revenue (i.e. 35% of INR 120 Cr = 42 Cr), will be recognised and profit would be computed accordingly.

Thus, in respect of HAM projects at each reporting period (during construction and O&M period) the stage of completion is to be computed based on any of the method provided under para 18 of the ICDS III and the contract revenue as well as the contract cost is to be recognised on the basis of the said stage of completion.

Para 20 of ICDS III specifically provides for recognizing revenue during early stages of contract. As per the said para during the early stages of contract (not beyond 25% of the stage of completion) contract revenue is recognised only to the extent of costs incurred.

Thus, till achieving the stage of completion of 25%, contract revenue may be recognised to the extent of cost incurred by the concessionaire. However, post achieving more than 25% of the stage of completion the revenue is to be recognised following para 16–19 of ICDS III.

9.5.4 Changes in Estimates

As per para 21 of ICDS III specifically provides for the treatment when there is change in estimates. Para 21 has been reproduced below:

> *21. The percentage of completion method is applied on a cumulative basis in each previous year to the current estimates of contract revenue and contract costs. Where there is change in estimates, the changed estimates shall be used in determination of the amount of revenue and expenses in the period in which the change is made and in subsequent periods.*

As per para 21 of ICDS III the percentage of completion method is to be applied cumulatively in each previous year based on the current estimates of contract revenue and contract cost. Further, it is provided that changed estimates would impact only the current year in which the change has occurred and the subsequent

period(s). Meaning thereby that if there are change in estimates then there is no need to make any changes in the past years.

Illustration

In the year 2018–19 the estimated total cost was INR 1000 and the estimated total revenue INR 1200 and the total cost incurred in the said year was INR 200. Further in year 2019–20 the estimated cost inflated to INR 1100 and the estimated revenue was also inflated to INR 1400. Also the cost incurred in the year 2019–20 was INR 500.

In year 2018–19

- *Percentage completion = 200/1000 = 20%*
- *Contract Cost recognized = INR 200*
- *Contract revenue recognized = 20% * 1200 = INR 240*

In year 2019–20.

- *Percentage completion = (500 + 200)/ 1100 = 63.63%*
- *Contract Cost recognized = INR 500 (actual expense incurred)*
- *Contract revenue recognized = (63.63%*1400) – revenue already recognized = INR 890–240 = INR 650*

9.5.5 Disclosures

Para 23 and 24 of the ICDS III provides for various disclosures that needs to be made by the person engaged in execution of Construction contracts. The same is extracted hereunder:

23. A person shall disclose:

(a) the amount of contract revenue recognised as revenue in the period; and

(b) the methods used to determine the stage of completion of contracts in progress.

24. A person shall disclose the following for contracts in progress at the reporting date, namely:—

(a) amount of costs incurred and recognised profits (less recognised losses) upto the reporting date;

(b) the amount of advances received; and

(c) the amount of retentions.

Thus, based on above, a Company needs to report following on the reporting date:

- Amount of contract revenue recognized as revenue;
- Method used to determine the stage of completion;
- Amount of cost incurred;
- Amount of profit recognized;
- Amount of advances received; and
- Amount of retention

The tax audit report in Form 3CD has now been amended to provide for disclosures required by ICDS, in clause 13. The new sub-clauses are as under:

(d) Whether any adjustment is required to be made to the profits or loss for complying with the provisions of income computation and disclosure standards notified under section 145(2)?

(e)s If answer to (d) above is in the affirmative, give details of such adjustments:

		Increase in Profit (INR)	Decrease in Profit (INR)	Net Effect (INR)
…				
ICDS III	Construction Contracts			
…				

(f) Disclosure as per ICDS

…

ICDS III- Construction Contracts

…

9.5.6 Treatment of Borrowing Costs

Contract cost (ICDS III)

This part discusses the treatment of Borrowing Cost under the ICDS and how the same is factored in the Construction Contracts. Reference is invited to Para 12 of the ICDS-III which provides for Contract Costs.

> *Contract costs shall comprise of:*
>
> *(a) costs that relate directly to the specific contract;*
>
> *.....*
>
> *(d) allocated borrowing costs in accordance with the Income Computation and Disclosure Standard on Borrowing Costs.*

Borrowing cost allocated to contract is required to be included in contract cost. Borrowing cost that needs to be included would be computed in terms of **ICDS IX**.

ICDS IX relating to borrowing costs

Para 2(1)(a) of the ICDS IX defines Borrowing Costs as:

> *(a) **Borrowing costs** are interest and other costs incurred by a person in connection with the borrowing of funds and include:*
>
> *(i) commitment charges on borrowings;*
>
> *(ii) amortised amount of discounts or premiums relating to borrowings;*
>
> *(iii) amortised amount of ancillary costs incurred in connection with the arrangement of borrowings;*
>
> *(iv) finance charges in respect of assets acquired under finance leases or under other similar arrangements.*

As per Para 3 of ICDS IX, the borrowing cost incurred till the date of completion of construction would become the part of contract cost. The contents of Para 3 are extracted hereunder:

*3. Borrowing costs that are **directly attributable** to the acquisition, **construction** or production of a qualifying asset shall be capitalised as part of the cost of that asset. The amount of borrowing costs eligible for capitalisation shall be determined in accordance with this Income Computation and Disclosure Standard. Other borrowing costs shall be recognised in accordance with the provisions of the Act.*

Thus, the interest and other borrowing cost incurred till the date of completion of construction/ till the date of CC shall become part of the contract cost. The borrowing cost that is incurred post the completion of construction would be treated as expense in terms of Section 36(1)(iii) of the Income tax Act. Even ICDS IX provides that the other borrowing costs shall be recognised in accordance with the provision of the Income Tax Act.

9.6 Income Computation and Disclosure Standard IV (ICDS IV)—Revenue Recognition

9.6.1 Scope

As per the preamble of ICDS IV, this ICDS is applied for computation of income chargeable under the head "***profit and gains of business of profession***" or ***"income from other sources"***.

Further, in terms of para 1.1 of ICDS IV, this ICDS deals with the bases for ***recognition of revenue*** arising in the course of the ordinary activities of the person from:

(a) sale of goods;
(b) rendering of services;
(c) the use by others of the persons' resources yielding interest, royalties or dividends.

Thus, it may be seen that ICDS IV only applies for recognizing of revenue and not for recognition of cost. Further, the ICDS IV is to be applied for recognition of revenue in respect of either sale of goods, rendering of service or the use by others of the person's resources yielding ***interest***, royalties or dividends.

In this regard it is also important to note that the term 'revenue' has been defined in para 2(1)(a) of the ICDS IV. From the said definition it is also evident that for the purpose ICDS IV revenue means the revenue pertaining to only the sale of goods, rendering of services or interest, royalty, dividends earned by letting others to use your resources. The definition of revenue is reproduced below for your ready reference:

(a) Revenue is the gross inflow of cash, receivables or other consideration arising in the course of the ordinary activities of a person from the sale of goods, from the rendering of services, or from the use by others of the person's resources yielding interest, royalties or dividends. In an agency relationship, the revenue is the amount of commission and not the gross inflow of cash, receivables or other consideration.

Para 1(2) of the ICDS IV specifically provides that this ICDS doe not deal with aspects of revenue recognition that are covered by other ICDS.

9.6.2 Recognition of Revenue

In case of HAM, contract revenue is to be recognized on the basis of ICDS-III which we have already discussed. However, post COD, NHAI is required to pay interest @ average of 1-year MCLR of top 5 scheduled commercial banks + 1.25% on the balance amount. Thus, the amount of interest that is received from NHAI would be recognised in terms of NHAI IV.

As per para 8 of ICDS IV, interest shall **accrue on the time basis** determined by the amount outstanding and the rate applicable.

Thus, the interest received/receivable by the concessionaire from NHAI would be recognised in terms of ICDS IV and such interest shall be recognised on accrual basis determined on the basis of the amount outstanding from NHAI and the rate of interest i.e. average of 1 year MCLR of top 5 scheduled commercial banks + 1.25%.

9.7 Applicable Rate of Income Tax

9.7.1 Tax Rates

Paragraph E of the First Schedule to Finance Act, 2022 contains the applicable rates of Income Tax in the case of a Domestic Company. As per the Finance Act 2022 the rate of tax applicable for the assessment year 2022–23 i.e. previous year 2021–2022 on the domestic companies are:

S. No.	Type of Company	Rate of income tax
(i)	(i) where its total turnover or the gross receipt in the previous year 2019–20 does not exceed four hundred crore rupees;	25% of the total income
(ii)	other than that referred to in item (i)	30% of the total income

Further, in addition to the rate of tax as mentioned above, a **surcharge** is also paid which is calculated at the rate and manner as mentioned below:

(1) in the case of every domestic company,—
   (a) having a total income exceeding one crore rupees but not exceeding ten crore rupees, at the rate of seven per cent. of such income-tax; and
   (b) having a total income exceeding ten crore rupees, at the rate of twelve per cent. of such income-tax;

Provided that in the case of every company having a total income exceeding one crore rupees but not exceeding ten crore rupees, the total amount payable as income-tax and surcharge on such income shall not exceed the total amount payable as income-tax on a total income of one crore rupees by more than the amount of income that exceeds one crore rupees:

Provided further that in the case of every company having a total income exceeding ten crore rupees, the total amount payable as income-tax and surcharge on such income shall not exceed the total amount payable as income-tax and surcharge on a total income of ten crore rupees by more than the amount of income that exceeds ten crore rupees.

Health and Education Cess: The amount of income-tax and the applicable surcharge, shall be further increased by health and education cess calculated at the rate of four percent of such income-tax and surcharge.

9.7.2 Optional Rate of Tax—Subject to Fulfillment of Conditions

The Central Government brought in the Taxation Laws (Amendment) Act, 2019 thereby inserting Section 115BAA and Section 115BAB in Income Tax Act with effect from 01 April 2020.

Section 115BAA is overriding the provisions of the Income Tax Act but is subject to the provisions of chapter XII of the Income Tax Act (other than Section 115BA and Section 115BAB). Further, section 115BAA provides an option to a domestic company to pay income tax on its total income at the rate of 22% subject to conditions specified in the said Section. Such rate of tax is applicable in respect of total income of domestic person for any previous year relevant to the Assessment year beginning on or after the 1st day of April 2020. Thus, the said rate of tax can be applied from the previous year 2019–20 only. (The same is discussed in later part of the Chapter).

Thus, where a domestic company opts for payment of income tax in terms of Section 115BAA of the Income Tax Act, on its total income, applicable rate of tax w.e.f. from Assessment year 2020–21 will be.

a. **Income tax** @ 22%
b. **Surcharge** @ 10% of the said income tax
c. **Health and Education Cess** @ 4% of such income-tax and surcharge.

Thus, total income tax would be levied @ 25.17%.

For opting to pay tax in terms of Section 115BAA of the Income Tax Act the domestic company needs to fulfill the following conditions:

a. The total income shall be computed (as relevant for the construction industry)

   i. Without any deduction

      1. under the provisions of Section 10AA
      2. under clause (iia) of sub-Section (1) of Section 32
      3. under Section 32AD
      4. under Section 33AB
      5. under Section 33ABA
      6. under sub-clause (ii) or sub-clause (iia) or sub-clause (iii) of sub-Section (1) or sub-Section (2AA) or sub-Section (2AB) of Section 35 (tax on income of certain domestic companies)
      7. under Section 35AD (deduction in respect of expenditure on specified business);
      8. under Section 35CCD
      9. under Section 35CCC
      10. under any provisions of Chapter VI-A other than the provisions of Section 80JJAA or Section 80 M.

   ii. without set off of any **loss carried forward** or **depreciation** from any earlier assessment year, if such loss or depreciation is attributable to any of the deductions referred to in clause (i);

   iii. without set off of **any loss or allowance** for **unabsorbed depreciation** deemed so under section 72A, if such loss or depreciation is attributable to any of the deductions referred to in clause (i); and

   iv. by claiming the depreciation, if any, under any provision of section 32, except clause (iia) of sub-Section (1) of the said section, determined in such manner as may be prescribed.

9.7.3 Minimum Alternative Tax

Minimum alternative tax (MAT) is a concept of direct tax whereby the companies are required to pay a minimum tax as computed in terms of MAT provisions as contained in the Income Tax Act. The provisions pertaining to MAT are covered in Section 115JB of the Income Tax Act, 1961. As per the said section, for the previous year relevant to the assessment year commencing on or after the 1st day of April, 2020, the Company is required to pay a minimum income tax of 15% of its book profits.

Thus, even in case where no income tax is liable to be paid in terms of normal income tax provisions then also as per Section 115JB of the Income Tax Act the Company is required to pay income tax @ 15% of the book profits.

Here we would like to mention that in case the Company has opted for payment of tax under Section 115BAA of the Income tax Act then the provisions of MAT are not applicable on them. As per Section 115JB(5A) of the Income Tax Act the provisions of Section 115JB shall not apply to a person who has exercised the option referred to under section 115BAA.

9.7.4 Exercise of Option

As per Section 115BAA(5) the Company shall exercise the option in the prescribed manner on or before the due date specified under sub-section (1) of Section 139 for furnishing the returns of income for any previous year relevant to the assessment year commencing on or after the 1st day of April, 2020 and such option once exercised shall apply to subsequent assessment years. Section 115BAA(5) is reproduced below:

> *(5) Nothing contained in this section shall apply unless the option is exercised by the person in the prescribed manner57 on or before the due date specified under sub-section(1) of Section 139 for furnishing the returns of income for any previous year relevant to the assessment year commencing on or after the 1st day of April, 2020 and such option once exercised shall apply to subsequent assessment years:*
>
> *Provided that in case of a person, where the option exercised by it under Section 115BAB has been rendered invalid due to violation of conditions contained in sub-clause (ii) or sub-clause (iii) of clause (a), or clause (b) of sub-section (2) of said section, such person may exercise option under this section:*
>
> *Provided further that once the option has been exercised for any previous year, it cannot be subsequently withdrawn for the same or any other previous year. General of Income-tax (Systems) or the Director General of Income-tax (Systems), as the case may be, shall-*

Further rule 21AE of the Income Tax Rules provides that the option to be exercised in accordance with Section 115BAA(5) shall be in Form 10-IC. To quote:

Exercise of option under sub-section (5) of Section 115BAA.

21AE. (1) The option to be exercised in accordance with the provisions of sub-section (5) of section 115BAA by a person, being a domestic company, for any previous year relevant to the assessment year beginning on or after the 1st day of April, 2020, shall be in Form No. 10-IC.

(2) The option in Form No. 10-IC shall be furnished electronically either under digital signature or electronic verification code.

(3) The Principal Director General of Income-tax (Systems) or the Director General of Income-tax (Systems), as the case may be, shall-

(i) specify the procedure for filing of Form No. 10-IC;

(ii) specify the data structure, standards and manner of generation of electronic verification code, referred to in sub-rule (2), for verification of the person furnishing the said Form; and

(iii) be responsible for formulating and implementing appropriate security, archival and retrieval policies in relation to the Form so furnished.

Accounting Review—Ind AS and Revenue Recognition

10

This Chapter provides an overview of revenue recognition in case of road construction contracts that are awarded under Hybrid Annuity Model. It details out the accounting standards as applicable to the HAM based road PPP projects in India. From the past experience, it can be gathered that the contracts of road construction awarded for such projects have an average project value of more than INR 500 Cr (USD 70 million). Thus, as per the authors view, the SPV engaged in undertaking the HAM projects would need to comply with the Indian Accounting Standards (or Ind AS) as issued by the Central Government in 2015. The Ind AS that is relevant for recognizing of revenue from such projects is Ind AS 115 i.e., revenue from contracts with customer.

Ind AS 115 is a Five (5) step revenue recognition model wherein the revenue needs to be recognized by following the five steps namely, Identify the contract with the customer, Identify the performance obligations, Determine the transaction price, Allocate the transaction price to the performance obligations, and Recognize revenue as or when performance obligations are satisfied.

10.1 Project Highway Case Study—Summary

The case study assumes an award of a national highway project in India called **Project Highway** by National Highways Authority of India (NHAI) as the government agency to a private sector player. The private sector player has incorporated a Special Purpose Vehicle (SPV) namely, **ABC Constructions Private Limited (ACPL)** who will be the Concessionaire for this Project; and will perform two (2) key activities:

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_10

- Construction of Highway; and
- Operation and maintenance (hereinafter referred to as **O&M**) of Highway for 15 years, after completion of Construction. Operation and maintenance activities would include regular maintenance as also major maintenance.

In terms of scope of O&M activities, ACPL is required to restore the asset at the end of the term of the concession agreement.

Key relevant assumptions below:

- Cost of construction (civil and structural work) is INR 1200 Cr
- O&M cost to be incurred each year = INR 4 Cr
- Major Maintenance = During 7^{th}year and the 14^{th} year of operation period, INR 30 Cr is estimated to be incurred in respect of major maintenance in each such year (in real terms, without considering the impact of inflation)
- ACPL has quoted Bid Project Cost = INR 1500 Cr in respect of construction activity
- ACPL has quoted O&M cost = INR 5 Cr per year in respect of O&M activities which is payable during the operation and maintenance period.

The bid project cost and the O&M cost payable by NHAI to ACPL is as per the bid submitted by ACPL to NHAI. Further, as such the amount quoted as bid project cost and O&M Costs by ACPL is not proportionate to the cost incurred on these activities. For the purpose of this case study, it is assumed that ACPL has submitted the bids in such a manner that the bid project cost which is linked with construction of road is quoted on a higher side, whereas the O&M cost is quoted on a lower side. This means that the bid project cost (price quoted for construction) is loaded with the revenue for O&M activities also.

Estimated cost and revenue *(in real terms without considering the impact of inflation)* is summarized in the table below:

Activities/cost and revenue	Construction (INR Cr)	O&M (INR Cr)	Total (INR Cr)
Cost	1200	4 * 15 + 30 * 2 = 120	1320
Revenue quoted	1500	5 * 15 = 75	1575

The consideration agreed between NHAI and ACPL is to be paid by NHAI in the following manner:

- NHAI shall pay 40% of the cost of construction of the **Bid Project Cost (BPC)** on achievement of milestones linked with the physical completion of the project in ten (10) equal instalments of 4% of BPC.
- Upon Commercial Operation Date (COD), ACPL shall be entitled to demand and collect remaining 60% of BPC as Annuity payments. The said 60% shall be paid to the Concessionaire in 30 biannual Annuities, after completion of

180 days from COD, along with interest at the rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25% on the balance of annuity payments.
- NHAI shall also pay operation and maintenance costs (as per the bid of the ACPL) during the 15 years of operations of the project.

That in terms of agreement between NHAI and ACPL, it is evident that the work for construction as well as work for operation and maintenance is under a single contract. We have assumed that while quoting the contract the management had in mind a uniform profit percentage for construction as also for the operation and maintenance activity.

10.2 Applicability of Indian Accounting Standards

In exercise of the powers conferred by Section 133 read with Section 469 of the Companies Act, 2013, and sub-section (1) of Section 210A of the Companies Act, 1956, the Central Government, in consultation with the National Advisory Committee on Accounting Standards, notified Companies (Indian Accounting Standards) Rules, 2015 (hereinafter referred to as **Ind AS Rules**, **2015**) vide Notification No. G.S.R 111(E) dated 16.02.2015.

Rule 3 of the of the Ind AS Rules, 2015 provide that the Accounting Standards as specified in the Annexure to these rules shall be called the ***Indian Accounting Standards*** (Ind AS) and shall be the accounting standards applicable to ***classes of companies specified in rule 4***. Further it provides that the Accounting Standards as specified in Annexure to the Companies (Accounting Standards) Rules, 2006 shall be the Accounting Standards applicable to the companies other than the classes of companies specified in rule 4.

Rule 3 also provides that a company which follows the Indian Accounting Standards (Ind AS) specified in Annexure to these rules in accordance with the provisions of rule 4 shall follow ***such standards only,*** and a company which follows the accounting standards specified in Annexure to the Companies (Accounting Standards) Rules, 2006 shall comply with such standards only and not the Standards specified in Annexure to these rules.

Thus,

a. The class of companies as specified in Rule 4 of the Ind AS Rules, 2015 shall only apply the Indian Accounting Standards as specified in the Annexure to Ind AS Rules, 2015; and
b. All the companies other than those specified in Rule 4 would only follow the accounting standards as specified in Companies (Accounting Standards) Rules, 2006.

Rule 4 of the said Ind AS Rules, 2015 provides for the Companies who are mandatorily required to apply the Ind AS in preparing their accounts.

As per Rule 4 of the Ind AS Rules, 2015, the following Companies and their auditors shall comply with the Ind AS in preparation of their financial statements and audit respectively.

(a) For the period beginning on or after 1st April 2016 [Rule 4(i)(ii) of the Ind AS Rules, 2015]
   (i) Companies whose equity or debt securities are listed or are in the process of being listed on any stock exchange in India or outside India and having net worth of INR 500 Cr or more;
   (ii) Companies other than those covered by point (i) above and having net worth of INR 500 Cr or more;
   (iii) Holding, subsidiary, joint venture or associate companies of companies covered by points (i) and (ii) above
(b) For the accounting periods beginning on or after 1st April 2017 [R. 4(i) (iii) of the Ind AS Rules, 2015]
   (i) companies whose equity or debt securities are listed or are in the process of being listed on any stock exchange in India or outside India and having net worth of less than INR 500 Cr;
   (ii) companies other than those covered in (a) or in b.(i) above, that is, unlisted companies **having net worth of INR 250 Cr or more but less than INR 500 Cr**
   (iii) holding, subsidiary, joint venture or associate companies of companies covered in point (i) and (ii) above as the case may be.
(c) specified NBFCs.
(d) The holding, subsidiary, joint venture or associate companies of Scheduled commercial banks (excluding RRBs) would be required to prepare Ind AS based financial statements for accounting periods beginning from 1st April, 2018 onwards, with comparatives for the periods ending 31st March, 2018 or thereafter.

The expression, holding company, subsidiary and associate companies have been defined in Section 2 of the Companies Act, 2013 and are extracted hereinbelow.

> *2 (46) **holding company**, in relation to one or more other companies, means a company of which such companies are subsidiary companies;*
>
> *Explanation.—For the purposes of this clause, the expression company includes any body corporate.*
>
> *2 (87) **subsidiary company** or **subsidiary**, in relation to any other company (that is to say the holding company), means a company in which the holding company—*

(i) controls the composition of the Board of Directors; or

(ii) exercises or controls more than one-half of the 19[total voting power] either at its own or together with one or more of its subsidiary companies:

Provided that such class or classes of holding companies as may be prescribed shall not have layers of subsidiaries beyond such numbers as may be prescribed.

Explanation.—For the purposes of this clause,—

(a) a company shall be deemed to be a subsidiary company of the holding company even if the control referred to in sub-clause (i) or sub-clause (ii) is of another subsidiary company of the holding company;

(b) the composition of a company's Board of Directors shall be deemed to be controlled by another company if that other company by exercise of some power exercisable by it at its discretion can appoint or remove all or a majority of the directors;

(c) the expression company includes any body corporate;

(d) layer in relation to a holding company means its subsidiary or subsidiaries;

2 (6) associate company, in relation to another company, means a company in which that other company has a significant influence, but which is not a subsidiary company of the company having such influence and includes a joint venture company.

Explanation.—For the purpose of this clause,—

(a) the expression significant influence means control of at least twenty per cent. of total voting power, or control of or participation in business decisions under an agreement;

(b) the expression joint venture means a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement;

Further, clause 2(f) of the Notification No. G.S.R. 111 provides that the net worth, for the purpose of this notification, has the same meaning as defined in Section 2(57) of the Companies Act 2013. Section 2(57) of the Companies Act defines Net Worth as:

2 (57) ***net worth*** means the aggregate value of the paid-up share capital and all reserves created out of the profits, securities premium account and debit or credit balance of profit and loss account, after deducting the aggregate value of the accumulated losses, deferred expenditure and miscellaneous expenditure not written off, as per the audited balance sheet, but does not include reserves created out of revaluation of assets, write-back of depreciation and amalgamation;

The road construction projects under HAM Model are high-value concessions, and in majority of the cases the companies undertaking these contracts have net worth of more than INR 250 Cr; or these companies are either the subsidiary or associate companies of the companies having net worth of more than INR 250 Cr.

Thus, most likely Ind AS would be applicable on the companies engaged in the work of construction and maintenance of road projects under HAM. However, if the company engaged in road construction is not covered under clause (ii) or (iii) of sub rule 1 of rule 4 then it has to prepare its accounts applying the accounting standards as specified in Companies (Accounting Standards) Rules, 2006.

Since HAM based PPP projects are normally covered under Ind AS, hence we are hereafter discussing the Ind AS relevant for accounting for such contracts.

10.3 Ind AS 115: Revenue from Contracts with Customer

10.3.1 Introduction

As per para 1 of the Ind AS 115 the objective of the said standard is to establish the principles that an entity shall apply to report useful information to users of financial statements ***about the nature, amount, timing and uncertainty of revenue and cash flow arising*** from a contract with a customer. Ind AS 115 is similar to IFRS 15.

Further, barring few exceptions, Ind AS 115 applies to all the contracts with the customers, to provide goods and services for a consideration.

10.3.2 Annexure D of Ind AS 115

Ind AS 115 contains **Annexure D:** ***Service Concession Arrangements*** which gives guidance on the *accounting by operators for public-to-private service concession arrangements*. It sets out general principles on recognizing and measuring the obligations and related rights in *service concession arrangements*. Annexure D of Ind AS 115 is similar to IFRIC 12 which also relates to Service Concession Agreements.

The scope of Appendix D states that it shall apply to public-to-private service concession arrangements if:

(a) the grantor controls or regulates what services the operator must provide with the infrastructure, to whom it must provide them, and at what price; and
(b) the grantor controls—through ownership, beneficial entitlement or otherwise—any significant residual interest in the infrastructure at the end of the term of the arrangement.

In terms of para 2 of Appendix D, an arrangement within the scope of this Appendix typically involves:

> *a private sector entity (an operator) constructing the infrastructure used to provide the public service or upgrading it (for example, by increasing its capacity) and operating and maintaining that infrastructure for a specified period of time.*
>
> *The operator is paid for its services over the period of the arrangement.*
>
> *The arrangement is governed by a contract that sets out performance standards, mechanisms for adjusting prices, and arrangements for arbitrating disputes.*
>
> *Such an arrangement is often described as a 'build-operate transfer', a 'rehabilitate-operate-transfer' or a 'public-to-private' service concession arrangement.*

The scope of Appendix D provided in Para 5 of the said Appendix D, especially Clause A thereof creates a slight confusion when it is applied to Contracts awarded under the HAM. On primary reading, it gives an indication that it applies where the Contract is awarded to the Operator for collecting the toll from the users. This confusion is created because condition (a) requires the grantor to control or regulate the services which the operator must provide with the infrastructure and also the price at which the same are provided. In HAM, the infrastructure is constructed, operated and maintained by the Operator for the grantor, for which the operator charges bid project cost, and O&M cost, both of which are fixed under the Concession Agreement entered into between the grantor and the operator. Thus, it seems that this is not a case where price of the service of the operator is regulated or controlled by the grantor, but a case where the consideration for activities of the operator is fixed under the Contract between both of them.

However, this aspect is clarified by Application Guidance on Appendix D, which is an integral part of Appendix D (It is contained in the Ind AS 115 itself). In Para AG 2 of the said Application Guidance on Appendix D, condition (a) of Para 5 of Appendix D is clarified. It is stated that the control or regulation referred to in Condition (a) could be by contract, and includes circumstances in which the grantor himself buys all the output. It is therefore adequately clarified that even if the price is provided under the Contract where the grantor himself buys all the output of the operator, it still satisfies the condition (a) of Para 5 of Appendix D.

In contracts awarded under HAM, the price is fixed subject to adjustment on account of inflation, and whole of the output namely construction, operation and maintenance of the road is bought by NHAI from the concerned operator. This is covered by clarification given in AG 2. Thus, AG 2 dispels any doubts regarding inclusion of contracts awarded under HAM within the purview of Appendix D.

Further, Information Note 2 that accompanies Appendix D provides guidance on applicability of different Ind AS to typical types of public-to-private arrangements. As per the said Information note 2, Appendix D: Service Concession Agreement shall apply in case of projects under BOT Model. In this regard, it is important to note that the HAM projects are under DBOT model which is very similar to BOT.

Hence, it is evident that Appendix D would apply on the contracts awarded for construction, operation, and maintenance of road projects that are awarded under HAM based PPP model.

As per Para 12 and 13 of Appendix D in respect of contractual arrangements covered within the scope of this Appendix, the operator, being a private sector entity constructing the infrastructure, acts as a service provider. As per the said paras the operator shall ***recognize and measure revenue in accordance with Ind AS 115 for the services it performs***. Thus, in respect of the concession agreement covered within the scope of Appendix D the revenue of the operator shall be recognized and measured in accordance with Ind AS 115.

To quote:

> *Recognition and measurement of arrangement consideration*
>
> *12 Under the terms of contractual arrangements within the scope of this Appendix, the operator acts as a service provider. The operator constructs or upgrades infrastructure (construction or upgrade services) used to provide a public service and operates and maintains that infrastructure (operation services) for a specified period of time*
>
> *13 The operator shall recognise and measure revenue in accordance with Ind AS 115 for the services it performs. The nature of the consideration determines its subsequent accounting treatment. The subsequent accounting for consideration received as a financial asset and as an intangible asset is detailed in paragraphs 23–26 of this Appendix.*

10.4 Five (5) Step Model for Applying Ind AS 115

10.4.1 Revenue Recognition in Terms of Ind AS 115

Ind AS 115 establishes a 5 step Model that entities would need to apply to determine the ***amount of revenue to be recognized*** and ***when to recognize*** the same. The Five steps summarized in the figure below:

This section describes the detailed steps for applying Ind AS 115 on HAM based road PPP projects. All the steps have been explained with the numerical examples of case study of Project Highway to enhance the understanding of the readers.

10.4.2 Step I: Identify the Contract with the Customer

An entity while applying the provisions of Ind AS 115 shall first have to identify the contract as per the parameters laid in para 9 of the Ind AS. Para 9 of Ind AS 115 is reproduced below for ease of reference:

Para 9 of Ind AS 115

An entity shall account for a contract with a customer that is within the scope of this Standard only when all of the following criteria are met:

(a) the ***parties to the contract have approved the contract*** *(in writing, orally or in accordance with other customary business practices) and are committed to perform their respective obligations;*

(b) the ***entity can identify each party's rights*** *regarding the goods or services to be transferred;*

(c) the entity can identify the payment terms for the goods or services to be transferred;

(d) the ***contract has commercial substance*** *(ie the risk, timing or amount of the entity's future cash flows is expected to change as a result of the contract); and*

(e) ***it is probable that the entity will collect the consideration*** to which it will be entitled in exchange for the goods or services that will be transferred to the customer. In evaluating whether collectability of an amount of consideration is probable, an entity shall consider only the customer's ability and intention to pay that amount of consideration when it is due. The amount of consideration to which the entity will

be entitled may be less than the price stated in the contract if the consideration is variable because the entity may offer the customer a price concession (see paragraph 52).

Thus, revenue is determined in terms of Ind AS 115 only when the contract with the customers satisfies all the conditions as mentioned in para 9 of Ind AS 115.

In respect of HAM projects all the five criteria as laid down in Step I are met and the same are explained in the following points:

a. In any HAM project, the concession agreement that is entered is duly executed, signed and approved by both the parties to the contract.
b. The right of both the parties are clearly codified in the contract.
c. The payment terms are also provided for in the Concession agreement wherein the total price and the timing for its payments is mentioned.
d. Concession agreement in HAM has commercial substance as the concessionaire's risk and future cash flows would change as a result of the HAM project.
e. In HAM, the contracting party is NHAI or State Authority i.e. Authority of Government and thus, it is fairly probable that the concessionaire will collect the consideration.

Project Highway: Application of Step I

- ACPL has entered into a contract with NHAI to construct, operate and maintain the road.
- As per the said agreement each party's rights with regard to service to be rendered and the terms of payment are clearly mentioned.
- Further, the said contract has commercial substance in it as ACPL is undertaking the said project as a commercial activity and there are economic consequences on the cash flows of ACPL as per the result of the contract.
- Furthermore, since the contract is entered with the NHAI i.e. Authority of Government of India, it is fairly probable that ACPL would be able to collect the consideration from the NHAI (customer in the present case) as and when the same is due.

Since all the criteria as contained in Para 9 of Ind AS 115 are met in respect of the case study, hence, the first step as laid by Ind AS is complied with and can be further proceeded with, in terms of Ind AS 115, for recognizing revenue.

10.4.3 Step II: Identify the Performance Obligations

The next step requires an entity to identify the performance obligations in the contract. The relevant para of Ind AS is reproduced below:

> *Para 22 of Ind AS 115*
>
> *At contract inception, an entity shall assess the goods or services promised in a contract with a customer and shall identify as a performance obligation each promise to transfer to the customer either:*
>
> *(a) a good or service (or a bundle of goods or services) that is distinct; or*
>
> *(b) a series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer (see paragraph 23).*

The term performance obligation has been defined in Appendix A of the Ind AS as-

> *A promise in a contract with a customer to transfer to the customer either:*
>
> *(a) a good or service (or a bundle of goods or services) that is distinct; or*
>
> *(b) a series of distinct goods or services that are substantially the same and that have the same pattern of transfer to the customer.*

In accordance with step II as contained in para 22 of Ind AS 115, at contract inception, an entity has to identify all goods or services that are promised by the entity to be transferred to the customer under the contract. Thereafter, the entity has to determine whether such promised goods or services to be transferred to customer are distinct in themselves or form a series which has a same pattern of transfer.

The Ind AS 115 also provides criteria for determining whether the good or service that is promised to customer would be distinct or not. The relevant para of Ind AS 115 is reproduced below for ready reference:

> *Para 27 of Ind AS 115*
>
> *A good or service that is promised to a customer is distinct if both of the following criteria are met:*

*(a) the **customer can benefit from the good or service either on its own** or together with other resources that are readily available to the customer (i.e. the good or service is capable of being distinct); **and***

*(b) the **entity's promise to transfer the good or service to the customer is separately identifiable from other promises** in the contract (i.e. the promise to transfer the good or service is distinct within the context of the contract).*

The two conditions specified in Para 27 are to be cumulatively satisfied. In other words, a good or service that is promised to a customer shall be considered to be distinct only if both the above conditions (a) and (b) are satisfied.

To elaborate, it can be understood that a good or service may be called as distinct if it is capable of being used on its own or with any other readily available resource. The evidence of this fact would be that the entity or its competitors regularly sells many of these goods and services separately to other customers. However, where in a contract such goods or services are not individually promised to be supplied but rather as an integrated service (incorporating the said goods and services as inputs), each such goods and services that are incorporated in the integrated service cannot be called as distinct as per para 27(b).

For a better understanding of the above provisions regarding differentiation between distinct goods or service and series of goods or services, reference is made to document of IASB published to accompany IFRS 15 on '*Revenue from contracts with Customers'* that is similar to Ind AS 115. This document provides application guidance of IFRS-15 with the help of examples. The same can provide an insight into the provisions of Ind AS 115 as Ind AS issued in India is guided by the IFRS issued by IASB.

One of the example provided in the Application guidance of IFRS -15 with regard to distinct goods and services has been reproduced below:

Example 10—Goods and services are not distinct

Case A—Significant integration service

IE45 An entity, a contractor, enters into a contract to build a hospital for a customer. The entity is responsible for the overall management of the project and identifies various promised goods and services, including engineering, site clearance, foundation, procurement, construction of the structure, piping and wiring, installation of equipment and finishing.

IE46 The promised goods and services are capable of being distinct in accordance with paragraph 27(a) of IFRS 15. That is, the customer can benefit from the goods and services either on their own or together with other readily available resources. This is evidenced by the fact that the entity, or competitors of the entity, regularly sells many of these goods and services separately to other customers. In addition, the

customer could generate economic benefit from the individual goods and services by using, consuming, selling or holding those goods or services.

IE47 However, the promises to transfer the goods and services are not separately identifiable in accordance with paragraph 27(b) of IFRS 15 (on the basis of the factors in paragraph 29 of IFRS 15). This is evidenced by the fact that the entity provides a significant service of integrating the goods and services (the inputs) into the hospital (the combined output) for which the customer has contracted.

IE48 Because both criteria in paragraph 27 of IFRS 15 are not met, the goods and services are not distinct. The entity accounts for all of the goods and services in the contract as a single performance obligation.

Here it is relevant to refer to para 29 of IND-AS 115. Para 29 provides for factors that indicates that two or more promises to transfer goods and services are not separately identifiable. For ease of reference, para 29 of Ind AS is reproduced below:

29 Factors that indicate that two or more promises to transfer goods or services to a customer are not separately identifiable include, but are not limited to, the following:

(a) the entity provides a significant service of integrating the goods or services with other goods or services promised in the contract into a bundle of goods or services that represent the combined output or outputs for which the customer has contracted. In other words, the entity is using the goods or services as inputs to produce or deliver the combined output or outputs specified by the customer. A combined output or outputs might include more than one phase, element or unit.

(b) one or more of the goods or services significantly modifies or customises, or are significantly modified or customised by, one or more of the other goods or services promised in the contract.

(c) the goods or services are highly interdependent or highly interrelated. In other words, each of the goods or services is significantly affected by one or more of the other goods or services in the contract. For example, in some cases, two or more goods or services are significantly affected by each other because the entity would not be able to fulfil its promise by transferring each of the goods or services independently.

Thus, for determining whether the goods and services promised to the customer are distinct or not para 29 of Ind AS 115 also needs to be considered.

Para 26 of Ind AS 115 also gives example or illustrations of distinct goods or service. Para 26 has been reproduced below:

Depending on the contract, promised goods or services may include, but are not limited to, the following:

(a) sale of goods produced by an entity (for example, inventory of a manufacturer);

(b) resale of goods purchased by an entity (for example, merchandise of a retailer);

(c) resale of rights to goods or services purchased by an entity (for example, a ticket resold by an entity acting as a principal, as described in paragraphs B34–B38);

(d) performing a contractually agreed-upon task (or tasks) for a customer;

(e) providing a service of standing ready to provide goods or services (for example, unspecified updates to software that are provided on a when-and-if-available basis) or of making goods or services available for a customer to use as and when the customer decides;

(f) providing a service of arranging for another party to transfer goods or services to a customer (for example, acting as an agent of another party, as described in paragraphs B34–B38);

(g) granting rights to goods or services to be provided in the future that a customer can resell or provide to its customer (for example, an entity selling a product to a retailer promises to transfer an additional good or service to an individual who purchases the product from the retailer);

(h) constructing, manufacturing or developing an asset on behalf of a customer;

(i) granting licences (see paragraphs B52–B63); and

(j) granting options to purchase additional goods or services (when those options provide a customer with a material right, as described in paragraphs B39–B43).

From the aforesaid it is evident that ***construction, manufacturing or developing an asset on behalf of Customer***, may be considered as a distinct goods and services. Thus, it further suggests that the service of 'construction' is a distinct service in itself.

From the above discussion it appears that the road construction contracts awarded under HAM involves two performance obligations i.e. (a) Construction, and (b) Operation and maintenance. The Author is of such a view as both the following criteria mentioned in para 27 of the Ind AS 115 are satisfied in respect of both of these obligations.

1. The customer being NHAI is benefitted from construction service as well as the operation and maintenance service provided by the Concessionaire.

2. Both the construction and operation and maintenance are separately identifiable from the terms of the concession agreement that is entered into between the concessionaire and NHAI.

Also, it is important to note that the construction and O&M activity required to be undertaken by the concessionaire involves various activities such as planning, design, site clearance, etc. but these individual activities would not be considered as performance obligation. This is so because these individual activities are not specifically promised with the customer but the concessionaire has promised to provide the services of construction of road, and operation and maintenance of the road to NHAI. Thus, in terms of para 29 of the Ind AS it is not the individual activities such as, design, planning, laying of road, site clearance, foundation, etc. which are inputs of the promised final output, are considered to be performance obligation rather, it is the goods or services which are promised between the parties which are considered to be performance obligation (subject to fulfilment of criteria laid down in para 27).

Further, a very important factor in these contracts is that as soon as construction is complete, i.e., on and after the COD, the right to receive annuity payments immediately gets vested. This shows that, as on COD, both the parties are treating that the construction obligation is complete. This is further evident on the basis of the fact that the time for performing both these services is completely different i.e. the construction service is to be provided during the construction period and once the construction of the road project is complete, then only the obligation to provide operation and maintenance service would arise.

Project Highway: Application of Step II

ACPL is providing two major services viz. Construction Services and Operation & Maintenance services.

Thus, in HAM there are two performance obligations, namely 1) Construction Services, and 2) Operation & Maintenance services. This is so because, both the criteria mentioned in para 27 of Ind AS 115 are met in respect of the case study as elaborated hereunder:

- NHAI can benefit from the constructed services as well as O&M services on their own. In many cases NHAI procures both these services viz Construction service and O&M services separately from different entities.
- Also both i.e. Construction as well as O&M are separately identifiable in terms of the concession agreement entered into between NHAI and ACPL

From the facts of the case study, it appears that under the concession agreement there are two performance obligations namely construction and O&M.

10.4.4 Step III: Determine the 'Transaction Price'

The next step is to determine the transaction price which the entity expects to receive in exchange of transferring the promised goods and services. The relevant provisions are reproduced below:

> *Para 47 of Ind AS 115*
>
> *An entity shall consider the terms of the contract and its customary business practices to determine the transaction price. The transaction price is the amount of consideration to which an entity expects to be entitled in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties (for example, some sales taxes). The consideration promised in a contract with a customer may include fixed amounts, variable amounts, or both.*
>
> *Para 49 of Ind AS 115*
>
> *For the purpose of determining the transaction price, an entity shall assume that the goods or services will be transferred to the customer as promised in accordance with the existing contract and that the contract will not be cancelled, renewed or modified.*

Thus, from the aforesaid it is evident that the transaction price is the amount that an entity expects to be entitled in exchange of transferring promised goods or services to a customer. Further, transaction price comprises of the fixed as well as variable amounts that are promised in the contract with the customer. Furthermore, it is specifically provided that the transaction price do not include the amount that is collected on behalf of third party such as GST.

As discussed in previous step, HAM based PPP projects generally have two performance obligations i.e. cons*truction* service, and *operation and maintenance* service. Further in terms of the model concession agreement, Article 23, separate prices for both the obligations are quoted and agreed by the Concessionaire and Authority.

Thus, there may be two scenarios:

#	Scenario	Determination of Transaction Price
1	Price quoted for each performance obligation is same as consideration expected in exchange for promised services	Price quoted is treated as Transaction Price for each performance obligation
2	Price quoted for each performance obligation is different from consideration expected in exchange for promised services.	Transaction Price for each performance obligation needs to be determined in the manner as described in the section below

Scenario 2, as described above, is possible when price quoted is only for the purpose of receiving the agreed installments from Authority. The prices so provided against each of the performance obligation have no nexus with the cost to

be incurred with respect of each of the performance obligation. Thus, the same i.e. the prices prescribed against each of the performance obligation, cannot be considered as the transaction price for said performance obligations.

Further, the concession is awarded by Authority on the basis of the lowest bid price which is sum total of NPV Bid project cost/ Cost for construction service and NPV of O&M cost. Thus, for the purpose of awarding the Agreement, the NPV of combined price i.e. NPV of price quoted for construction and NPV of price quoted O&M is considered and not the prices for the two individual performance obligations. **Therefore, the prices appearing in the contract for each service may not represent the fair value of respective service that would have been charged had the contract been allotted separately. In such cases, in order to preserve the substance of the contract, it is required to determine the transaction price of the entire contract and then allocate the whole transaction price to each of the performance obligation in terms of next step.**

Recent change

Recently an amendment has been bought in the MCA wherein a change has been made regarding the financial bidding process and the evaluation of bids by NHAI. Now the bidders have to only quote the bid Project Cost. Thus, unlike the period prior to the said amendment when the bidder is required to quote Bid Project Cost and the First year O&M cost, now, after the said amendment the bidders are only required to quote the BPC. Further, the O&M is fixed as a percentage of BPC.

Post the said amendment the successful bidder is selected on the basis of BPC only.

Even now, the bidder at the inception of contract has to analyse whether the BPC quoted by him and the % of BPC fixed as O&M Cost is the amount that the entity expects in respect of Construction and O&M respectively. If that be so then the BPC would be considered to be the transaction price for the construction works and the O&M cost fixed as % of BPC would be construed to be the transaction price for O&M activity.

If the bidder considers that the BPC quoted by him and the % of BPC fixed as O&M Cost is the different from the amount that the entity expects in respect of Construction and O&M respectively then **it is required to determine the transaction price of the entire contract and then allocate the whole transaction price to each of the performance obligation in terms of next step.**

Factors relevant for determination of transaction price

As per Para 48 of Ind AS 115, while determining the transaction price, an entity shall consider the effects of all of the following:

a. variable consideration
b. constraining estimates of variable consideration
c. existence of a significant financing component in the contract
d. non-cash considerations
e. consideration payable to a customer

In HAM projects, the **Bid Project Cost (BPC)** and the **O&M Payment** as quoted by the Concessionaire are adjusted using Price Index Multiple (PIM).[1] This adjustment on account of inflation is *variable consideration.* While estimating variable consideration, which is to be based upon the inflation factors prevailing over a period of 17 years approximately, there shall be substantial degree of estimation. However, the accountants have no option but to make best estimates as per the available information.

Para 56 and 57 of Ind AS 115 are very important in this regard. It is however to be noted that variable consideration shall be included in the transaction price only if it is highly probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is resolved. Wherever it is not so probable, it is referred to as constraining estimates of variable consideration. Thus, in a case involving variable consideration, if it is estimated that it is quite likely that the said variable consideration would have to be ultimately reversed, the same should not be accounted for. We believe that a developing country like India which has historically faced supply side constraints and have always seen inflation, it is quite tenable to assume that the present trend of inflationary economic scenario would continue even in the ensuing years. However, while taking an estimate for inflation, considering the provision (para 56 and 57) of the Ind AS, a conservative rate of inflation may be factored while considering it as variable consideration.

Change in transaction price

Para 87 to 90 of the Ind AS 115 provides for treatment with regard to any change in transaction price.

> *Para 87-90 of Ind AS 115*
>
> *Changes in the transaction price*
>
> *87 After contract inception, the transaction price can change for various reasons, including the resolution of uncertain events or other changes in circumstances that change the amount of consideration to which an entity expects to be entitled in exchange for the promised goods or services.*

[1] *Please refer to Chapter 7 of the book for a detailed discussion on PIM and methodology of computation.*

88 An entity shall allocate to the performance obligations in the contract any subsequent changes in the transaction price on the same basis as at contract inception. Consequently, an entity shall not reallocate the transaction price to reflect changes in stand-alone selling prices after contract inception. Amounts allocated to a satisfied performance obligation shall be recognised as revenue, or as a reduction of revenue, in the period in which the transaction price changes.

89 An entity shall allocate a change in the transaction price entirely to one or more, but not all, performance obligations or distinct goods or services promised in a series that forms part of a single performance obligation in accordance with paragraph 22(b) only if the criteria in paragraph 85 on allocating variable consideration are met.

90 An entity shall account for a change in the transaction price that arises as a result of a contract modification in accordance with paragraphs 18–21. However, for a change in the transaction price that occurs after a contract modification, an entity shall apply paragraphs 87–89 to allocate the change in the transaction price in whichever of the following ways is applicable:

(a) An entity shall allocate the change in the transaction price to the performance obligations identified in the contract before the modification if, and to the extent that, the change in the transaction price is attributable to an amount of variable consideration promised before the modification and the modification is accounted for in accordance with paragraph 21(a).

(b) In all other cases in which the modification was not accounted for as a separate contract in accordance with paragraph 20, an entity shall allocate the change in the transaction price to the performance obligations in the modified contract (ie the performance obligations that were unsatisfied or partially unsatisfied immediately after the modification).

Thus, in terms of para 87 to 90 where there is any change in transaction price for any uncertain reason, such as inflation in raw material prices, then the same be allocated to the performance obligations on the basis as determined at the contract inception.

Thus, insofar as the variable consideration could not be included in the transaction value due to constraining estimates, the change in transaction value shall be accounted for as and when the uncertain event is resolved.

Illustration:

The price of gold between the refinery and the wholesaler is to be adjusted on the day when the gold is sold by the wholesaler to his buyer on the basis of London Bullion Metal Association price prevailing on that day. The change in price over and above the price paid on the date of sale would be accounted

for when the uncertain event, i.e. the event of sale by the wholesaler, is resolved. This amount shall be recognized as change in transaction price.

Further, there are also cases, where variable consideration was included in the transaction value, on best estimate basis. However, it is but natural that when the uncertain event actually happens, there would be some difference between the variable consideration estimated and the actual outcome. For example—The Contractor was to be paid construction value with inflation on the basis of wholesale price index. WPI was estimated at 5% and hence included as variable consideration while determining transaction price. However, when the construction was complete and WPI was to be actually taken, it turned out to be 5.1%. The 0.1% change would be covered within the concept of change in transaction price.

Further the effect of change in the transaction price would be shown in the year in which the change has happened or in the subsequent year. The revenue/ expense already recognized in the previous years are not to be changed.

Existence of Significant financing component

Para 60 of Ind AS 115 provide that the effects of significant financing component must be adjusted while determining the transaction price. The relevant provisions relating to financing are reproduced below:

Para 60 - 65, page 12 of Ind AS Text

The existence of a significant financing component in the contract

60 In determining the transaction price, an entity shall adjust the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provides the customer or the entity with a significant benefit of financing the transfer of goods or services to the customer. In those circumstances, the contract contains a significant financing component. A significant financing component may exist regardless of whether the promise of financing is explicitly stated in the contract or implied by the payment terms agreed to by the parties to the contract.

61 The objective when adjusting the promised amount of consideration for a significant financing component is for an entity to recognise revenue at an amount that reflects the price that a customer would have paid for the promised goods or services if the customer had paid cash for those goods or services when (or as) they transfer to the customer (ie the cash selling price). An entity shall consider all relevant facts and circumstances in assessing whether a contract contains a financing component and whether that financing component is significant to the contract, including both of the following:

(a) the difference, if any, between the amount of promised consideration and the cash selling price of the promised goods or services; and

(b) the combined effect of both of the following:

(i) the expected length of time between when the entity transfers the promised goods or services to the customer and when the customer pays for those goods or services; and

(ii) the prevailing interest rates in the relevant market.

.....

63 As a practical expedient, an entity need not adjust the promised amount of consideration for the effects of a significant financing component if the entity expects, at contract inception, that the period between when the entity transfers a promised good or service to a customer and when the customer pays for that good or service will be one year or less.

64 To meet the objective in paragraph 61 when adjusting the promised amount of consideration for a significant financing component, an entity shall use the discount rate that would be reflected in a separate financing transaction between the entity and its customer at contract inception. That rate would reflect the credit characteristics of the party receiving financing in the contract, as well as any collateral or security provided by the customer or the entity, including assets transferred in the contract. An entity may be able to determine that rate by identifying the rate that discounts the nominal amount of the promised consideration to the price that the customer would pay in cash for the goods or services when (or as) they transfer to the customer. After contract inception, an entity shall not update the discount rate for changes in interest rates or other circumstances (such as a change in the assessment of the customer's credit risk).

65 An entity shall present the effects of financing (interest revenue or interest expense) separately from revenue from contracts with customers in the statement of profit and loss. Interest revenue or interest expense is recognised only to the extent that a contract asset (or receivable) or a contract liability is recognised in accounting for a contract with a customer.

Determining the cash selling price for adjusting for adjusting significant financing component

In HAM based road projects, the Authority pays for around 40% of construction cost in ten (10) milestones during construction period and the remaining cost is financed which is paid in form of semi-annual installments during the operation period. Further, the Authority, along with the annuity payments, makes interest payment on the reducing balance during the operation period at a rate equal to average of 1 year MCLR of top 5 scheduled commercial banks plus 1.25%.

As per para 60 to 65 of the Ind As 115, for determining the transaction price, the promised amount of consideration shall be adjusted for significant financing component so as to determine the price that a customer would have paid for the

promised goods or services if the customer had paid cash for those goods or services as and when the goods or services are transferred to the customer (i.e. cash selling price).

In terms of para 60 to 65, the concessionaire needs to analyze whether the price quoted in the contract is the cash selling price or it includes any amount on account of significant financing component. An entity shall consider all relevant facts and circumstances in assessing whether the price mentioned in the contract contains a financing component and whether that financing component is significant to the contract, including both of the following:

1) the difference, if any, between the amount of ***promised consideration*** and the ***cash selling price*** of the promised goods or services; and
2) the combined effect of both of the following:
   (a) the expected length of time between when the entity transfers the promised goods or services to the customer and when the customer pays for those goods or services; and
   (b) the prevailing interest rates in the relevant market

If there is a significant financing component, the promised amount of consideration shall be adjusted for the financing component on the basis of the discount rate that would be reflected in a separate financing transaction between the entity and its customer at contract inception. That rate would reflect the credit characteristics of the party receiving financing in the contract.

The rate of interest payable by Authority as per the MCA seems to represent a fair compensation for financing of the operation period annuity payments, thus, we understand that generally the BPC and O&M payments quoted by eth concessionaire would not include any significant financing component. However, in each individual case, it is for the management to determine this aspect at the contract inception.

Project Highway: Application of Step III

As per the detailed assumptions provided for the case study.[2]

- Average interest rate of debt as procured by the Concessionaire = 7.45%
- Interest rate for operation period annuity payments paid by the Authority = 8.50%

[2] *Please refer to Chapter 6 of the book for detailed assumptions for the case study of Project Highway.*

Since the two interest rates are in similar range, it is assumed that there is no significant financing component in the BPC/contract price for Project Highway.

Thus, the transaction price for complete project would be INR 1,575 Cr.

10.4.5 Step IV: Allocate the Transaction Price to the Performance Obligations

This is the fourth step for recognizing revenue in terms of Ind AS 115. This step requires allocation of transaction price determined in previous step between the identified performance obligations.

The provisions relating to allocation of transaction price are reproduced below:

Allocating the transaction price to performance obligations

Para 73-75 of Ind AS 115

73 The objective when allocating the transaction price is for an entity to allocate the transaction price to each performance obligation (or distinct good or service) in an amount that depicts the amount of consideration to which the entity expects to be entitled in exchange for transferring the promised goods or services to the customer.

74 To meet the allocation objective, an entity shall allocate the transaction price to each performance obligation identified in the contract on a relative stand-alone selling price basis in accordance with paragraphs 76–80, except as specified in paragraphs 81–83 (for allocating discounts) and paragraphs 84–86 (for allocating consideration that includes variable amounts).

75 Paragraphs 76–86 do not apply if a contract has only one performance obligation. However, paragraphs 84–86 may apply if an entity promises to transfer a series of distinct goods or services identified as a single performance obligation in accordance with paragraph 22(b) and the promised consideration includes variable amounts.

Thus, from para 73 it is evident that the transaction price shall be allocated to each of the identified performance obligation in a manner so that the allocated transaction price depicts the amount of consideration which the entity expects in exchange of the identified performance obligation.

Apportionment of transaction price to each performance obligation to be made on a relative stand-alone selling price. The term stand-alone selling price has been defined in Ind AS 115 as under:

The price at which an entity would sell a promised good or service separately to a customer

Para 79 of Ind AS provides suitable methods for estimating the stand-alone selling price of a good or service. The list is not limited but includes following:

a) Adjusted market assessment approach—an entity could evaluate the market in which it sells goods or services and estimate the price that a customer in that market would be willing to pay for those goods or services. That approach might also include referring to prices from the entity's competitors for similar goods or services and adjusting those prices as necessary to reflect the entity's costs and margins

b) Expected cost plus a margin approach—an entity could forecast its expected costs of satisfying a performance obligation and then add an appropriate margin for that good or service

c) Residual approach—an entity may estimate the stand-alone selling price by reference to the total transaction price less the sum of the observable stand-alone selling prices of other goods or services promised in the contract. However, an entity may use a residual approach to estimate, in accordance with paragraph 78, the stand-alone selling price of a good or service only if one of the following criteria is met:

i. the entity sells the same good or service to different customers (at or near the same time) for a broad range of amounts (ie the selling price is highly variable because a representative stand-alone selling price is not discernible from past transactions or other observable evidence); or

ii. the entity has not yet established a price for that good or service and the good or service has not previously been sold on a stand-alone basis (ie the selling price is uncertain).

In accordance with the above para, the transaction price needs to be apportioned between each performance obligation on any of the following basis that is most suitable based on facts of each case. It is important to note that these methods are illustrative and if any other method is more suitable, the same can be used or a combination of methods can also be used.

Each of the suggested methods are briefly explained below:

(a) Adjusted market assessment approach—apportionment is based upon the estimated market price of each performance obligation. For this purpose, price charged by competitors can also be taken into account. Further, the entity can also make suitable adjustments or reflecting its costs and margins.

(b) Expected cost plus a margin approach—an entity could forecast its expected costs of satisfying a performance obligation and then add an appropriate margin for that good or service
(c) Residual approach—apportionment is done by reference to the total transaction price less the sum of observable stand-alone selling price of other services promised in the contract. This method is used only when the concessionaire performs each performance obligation for a broad range of amounts; or a clear market benchmark is not available based on precedent transactions

Here, it would be worthwhile to refer to an illustration for understanding the application of these methods. In this regard, reference is invited to IASB documents published to accompany IFRS-15, where illustration 33 has been provided to elaborate allocation of transaction price to performance obligations. To quote:

Example 33- Allocation methodology

IE164 An entity enters into a contract with a customer to sell Products A, B and C in exchange for CU 100. The entity will satisfy the performance obligations for each of the products at different points in time. The entity regularly sells product A separately and therefore the stand-alone selling price is directly observable. The stand-alone selling prices of Products B and C are not directly observable.

IE165 Because the stand-alone selling prices for Products B and C are not directly observable, the entity must estimate them. To estimate the stand-alone selling prices, the entity uses the adjusted market assessment approach for Product B and the expected cost plus a margin approach for Product C. In making those estimates, the entity maximises the use of observable inputs (in accordance with paragraph 78 of IFRS 15). The entity estimates the stand-alone selling prices as follows:

Product	***Stand-alone Selling price***	***Method***
Product A	*50*	*Directly observable (see Paragraph 77 of IFRS 15)*
Product B	*25*	*Adjusted market assessment approach (see Paragraph 79(a) of IFRS 15)*
Product C	*75*	*Expected cost plus a margin approach (see paragraph 79(b) of IFRS 15)*
Total	*150*	

IE166 The customer receives a discount for purchasing the bundle of goods because the sum of the stand-alone selling prices (CU150) exceeds the promised consideration (CU100). The entity considers whether it has observable evidence about the performance obligation to which the entire discount belongs (in accordance with paragraph 82 of IFRS 15) and concludes that it does not. Consequently,

in accordance with paragraphs 76 and 81 of IFRS 15, the discount is allocated proportionately across Products A, B and C. The discount, and therefore the transaction price, is allocated as follows:

Product	***Allocated Transaction price***
	CU
Product A	*33 (CU 50/ CU 150 * CU 100)*
Product B	*17 (CU 25/ CU 150 * CU 100)*
Product C	*50 (CU 75/ CU 150 * CU 100)*
Total	***100***

For road PPP projects, applying market assessment approach for computing the stand along selling for each of the performance obligations i.e. construction and O&M would be difficult. This is so because, every road is different from the other. Unlike standard machine-made commodities, where it is relatively easier to determine market price, construction contracts usually have their own peculiarities.

Thus, in HAM projects the stand-alone selling prices should be determined on the basis of ***expected cost + margin*** approach and the said stand-alone selling price be used for apportioning the Total Transaction price between the two performance obligations i.e. Construction services and operation and maintenance as identified in earlier step.

Project Highway: Application of Step IV

For road PPP projects, the selling price of each of the performance obligations i.e. construction and O&M is difficult to estimate. This is so because, every road is different from the other.

Unlike standard machine made commodities, where it is relatively easier to determine selling price, construction contracts usually have their own peculiarities.

Thus, the stand-alone selling prices should be determined on the basis of ***expected cost + margin*** approach and the said stand-alone selling price be used for apportioning the Total Transaction price between the two performance obligations i.e. Construction services and Operation maintenance as identified in earlier step.

- *Total cost for the project (A) = INR 1320 Cr*
- *Total revenue for the project (B) = INR 1575 Cr*

- *Estimate Margin amount (C) = B-A = INR 255 Cr*
- *Estimate Margin percent = C/A = 19.32%*

Based on the estimated margin, the allocated Transaction Price (*in real terms without including the impact of inflation*) is provided below.

Parameter	Construction (INR Cr)	O&M (INR Cr)	Total (INR Cr)
Cost	1200	120	1320
Margin %	**19.32%**		
Margin amount	232	23	255
Allocated Transaction Price	***1432***	***143***	***1575***
Revenue quoted	1500	75	1575

10.4.6 Step V: Recognize Revenue as or When Performance Obligations are Satisfied

In the fifth and the last step, revenue shall be recognized as and when the performance obligation is satisfied. A performance obligation is said to be satisfied when the promised goods or service is transferred. A transfer of an asset is said to be made when the customer obtains the control of that asset. The relevant para of Ind AS is reproduced below:

Satisfaction of Performance Obligations

Para 31, of Ind AS 115

An entity shall recognise revenue when (or as) the entity satisfies a performance obligation by transferring a promised good or service (ie an asset) to a customer. An asset is transferred when (or as) the customer obtains control of that asset.

Para 33, of Ind AS 115

Goods and services are assets, even if only momentarily, when they are received and used (as in thecase of many services). Control of an asset refers to the ability to direct the use of, and obtain substantially all of the remaining benefits from, the asset. Control includes the ability to prevent other entities from directing the use of, and obtaining the benefits from, an asset. The benefits of an asset are the potential cash flows (inflows or savings in outflows) that can be obtained directly or indirectly in many ways, such as by:

(a) using the asset to produce goods or provide services (including public services);

(b) using the asset to enhance the value of other assets;

(c) using the asset to settle liabilities or reduce expenses;

(d) selling or exchanging the asset;

(e) pledging the asset to secure a loan; and

(f) holding the asset.

In accordance with above provision, the term 'control' has a wide connotation. It is not restricted to having ownership over the asset. If the customer can direct the use of such asset or can prevent other entities from directing the use of, or obtaining the benefit from such asset, the control is said to be present.

Performance spread over years

Where the performance obligation is spread over various financial years, as in the case of HAM projects, Ind AS 115 states that a performance obligation can be satisfied over time or at a point of time. It can be said to have been satisfied over time, if any of the criteria mentioned in para 35 is satisfied.

Performance obligations satisfied over Time

Para 35, page 7 of Ind AS Text

An entity transfers control of a good or service over time and, therefore, satisfies a performance obligation and recognises revenue over time, if one of the following criteria is met:

(a) the customer simultaneously receives and consumes the benefits provided by the entity's performance as the entity performs (see paragraphs B3–B4);

(b) the entity's performance creates or enhances an asset (for example, work in progress) that the customer controls as the asset is created or enhanced (see paragraph B5); or

(c) the entity's performance does not create an asset with an alternative use to the entity (see paragraph 36) and the entity has an enforceable right to payment for performance completed to date (see paragraph 37).

Thus, even if a single criterion as mentioned in para 35 is satisfied, then the revenue in respect of performance obligation would be recognized over time.

As per para 35(a) cited above, performance obligation is said to be satisfied over time if the customer simultaneously receives and consumes the benefits of the entity's performance as the entity performs. To understand this further we shall refer to para B3 and B4 of Application Guidance contained in Appendix B of Ind AS 115. These Paras are extracted below:

Para B3 and B4 of Application Guidance contained in Appendix B of Ind AS 115

Simultaneous receipt and consumption of the benefits of the entity's performance (paragraph 35(a)):

B3 For some types of performance obligations, the assessment of whether a customer receives the benefits of an entity's performance as the entity performs and simultaneously consumes those benefits as they are received will be straightforward. Examples include routine or recurring services (such as a cleaning service) in which the receipt and simultaneous consumption by the customer of the benefits of the entity's performance can be readily identified.

B4 For other types of performance obligations, an entity may not be able to readily identify whether a customer simultaneously receives and consumes the benefits from the entity's performance as the entity performs. In those circumstances, a performance obligation is satisfied over time if an entity determines that another entity would not need to substantially re-perform the work that the entity has completed to date if that other entity were to fulfill the remaining performance obligation to the customer. In determining whether another entity would not need to substantially re-perform the work the entity has completed to date, an entity shall make both of the following assumptions:

(a) disregard potential contractual restrictions or practical limitations that otherwise would prevent the entity from transferring the remaining performance obligation to another entity; and

(b) presume that another entity fulfilling the remainder of the performance obligation would not have the benefit of any asset that is presently controlled by the entity and that would remain controlled by the entity if the performance obligation were to transfer to another entity.

In terms of para B3 of the Application Guidance, in some cases it is straight forward to determine whether the customer has simultaneously received the benefit of the entity's performance as the entity performs. Example Gym Membership taken for 1 Year, Cleaning services, etc. Whereas in other type of performance obligation it is not possible to readily identify whether the customer is receiving and consuming the benefit of the entity's performance as and when the entity performs. In such cases performance obligation is said to be ***satisfied over time*** if the entity determines that another entity would ***not need to substantially re-perform the work that the entity has completed to date*** if that other entity were to fulfill the remaining performance obligation to the customer.

Further, reference is placed on the IASB document published to accompany IFRS wherein various illustrations are provided to explain the terms of IFRS 15. In the said document, in Example 14, ***simultaneous receipt and consumption of the benefits of the entity's performance*** has been explained with the help of an illustration, reproduced below.

Example 14 - Assessing alternative use and right to payment

An entity enters into a contract with the customer to provide a consulting service that results in the entity providing a professional opinion to the customer. The professional opinion relates to facts and circumstances that are specific to the customer. If the customer were to terminate the consulting contract for reasons other than the entities failure to perform as promised, the contract requires the customer to compensate the entity forest costs incurred plus a 15% margin. The 15% margin approximates the profit margin that the entity earns from similar contracts.

The entity considers the criterion in paragraph 35(a) of the requirements in paragraphs B3 and B4 of IFRS 15 to determine whether the customer simultaneously results receives and consumes the benefit of entity's performance. If the entity were to be unable to satisfy its obligation and the customer hired another consulting firm to provide the opinion, the other consulting firm would need to substantially re-perform the work that the entity had completed to date, because the other consulting firm would not have the benefit of any work in progress performed by the entity. The nature of the professional opinion is such that the customer will receive the benefits of the entities performance only when the customer receives the professional opinion. Consequently, the entity concludes that the criterion in paragraph 35(a) of IFRS 15 is not met.

Thus, for the purpose of criteria mentioned in para 35(a) what essentially needs to be considered is whether the newly appointed entity by the customer needs to significantly re-perform the work already completed by the entity.

In case of HAM projects, in respect of construction services, it is not that straight forward to determine whether the NHAI is receiving the benefit of Concessionaire's performance as and when concessionaire is performing the construction activity. Thus, in terms of criteria mentioned in para 35(a), the construction services would be said to be satisfied over time if the new concessionaire appointed by the Authority is not required to re-perform the road construction work that concessionaire has performed till date, in case the present concession agreement gets cancelled.

In author's view, in the case of construction services that are being provided by concessionaire to Authority, the quantum of work that concessionaire completes till date can be used by other contractor appointed by authority and that the said other contractor is not required to substantially re-perform the work that has already been performed by concessionaire. Further, in this regard, it is to be noted that in terms of the MCA, the Independent Engineer would review the monthly progress and issue its report containing the details of the of work performed by concessionaire

with regard to status, progress, quality etc. (Please refer to clause 21 of MCA read with Schedule N). This highlights that even the authority recognizes the quantum of work performed by the concessionaire in each month. Moreover, the site on which the construction work is being undertaken by the concessionaire belongs to the Authority, this further substantiates that the construction work performed by concessionaire would be received and consumed by the Authority as and when performed by the concessionaire and the other contractor as may be appointed by the Authority would not be required to substantially re-perform the work that has already been done by concessionaire.

Since, in respect of construction services the Authority is receiving and consuming the benefits of Concessionaire's performance as and when it performs hence the criteria mentioned in para 35(a) is met and therefore the construction service would be said to be satisfied over time.

In terms of criteria 35(a) of Ind AS 115, the other performance obligation i.e. Operation and maintenance is also considered to be satisfied over time. This is so because Authority would receive and consume as and when concessionaire would provide the services of operation and maintenance.

As discussed above, both the performance obligations i.e. construction and operation and maintenance would be considered to be satisfied over time.

Project Highway: Application of Step V

In respect of the case study, both the performance obligations i.e. construction and operation and maintenance would be considered to be satisfied over time. The criteria mentioned in para 35(a) i.e. the customer simultaneously receives and consumes the benefits provided by the entity's performance as the asset is created or performed is satisfied for both the performance obligations.

Measuring Progress

Where it is assessed that performance obligation is satisfied over time, the next step for recognizing revenue is measuring the progress of work towards complete satisfaction of that performance obligation. The provisions relating to measuring progress of work are reproduced below:

Para 39 – 41 and para 44 of Ind AS 115s

Measuring progress towards complete satisfaction of a performance obligation

39 For each performance obligation satisfied over time in accordance with paragraphs 35–37, an entity shall recognise revenue over time by measuring the progress towards complete satisfaction of that performance obligation. The objective when measuring progress is to depict an entity's performance in transferring control of goods or services promised to a customer (ie the satisfaction of an entity's performance obligation).

40 An entity shall apply a single method of measuring progress for each performance obligation satisfied over time and the entity shall apply that method consistently to similar performance obligations and in similar circumstances. At the end of each reporting period, an entity shall measure its progress towards complete satisfaction of a performance obligation satisfied over time.

Methods for measuring progress

41 Appropriate methods of measuring progress include output methods and input methods. Paragraphs B14–B19 provide guidance for using output methods and input methods to measure an entity's progress towards complete satisfaction of a performance obligation. In determining the appropriate method for measuring progress, an entity shall consider the nature of the good or service that the entity promised to transfer to the customer.

44 An entity shall recognise revenue for a performance obligation satisfied over time only if the entity can reasonably measure its progress towards complete satisfaction of the performance obligation. An entity would not be able to reasonably measure its progress towards complete satisfaction of a performance obligation if it lacks reliable information that would be required to apply an appropriate method of measuring progress.

In accordance with para 40 of Ind AS 115, an entity has to measure its progress towards complete satisfaction at the end of each reporting period. Further, it is stated that an appropriate method be used for measuring the progress. Appropriate method includes output method and input method. Thus, an entity can measure its progress towards complete satisfaction either by applying input method or output method or any other method as may be deemed appropriate by entity.

Further, para B14–B19 of the Appendix B provides guidance for using both the methods. Para B14 -B19 are reproduced below for ready reference:

Methods for measuring progress towards complete satisfaction of a performance obligation

B14 Methods that can be used to measure an entity's progress towards complete satisfaction of a performance obligation satisfied over time in accordance with paragraphs 35–37 include the following:

(a) output methods (see paragraphs B15–B17); and

(b) input methods (see paragraphs B18–B19).

Output methods

B15 Output methods recognise revenue on the basis of direct measurements of the value to the customer of the goods or services transferred to date relative to the remaining goods or services promised under the contract. Output methods include methods such as surveys of performance completed to date, appraisals of results achieved, milestones reached, time elapsed and units produced or units delivered. When an entity evaluates whether to apply an output method to measure its progress, the entity shall consider whether the output selected would faithfully depict the entity's performance towards complete satisfaction of the performance obligation. An output method would not provide a faithful depiction of the entity's performance if the output selected would fail to measure some of the goods or services for which control has transferred to the customer. For example, output methods based on units produced or units delivered would not faithfully depict an entity's performance in satisfying a performance obligation if, at the end of the reporting period, the entity's performance has produced work in progress or finished goods controlled by the customer that are not included in the measurement of the output.

B16 As a practical expedient, if an entity has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of the entity's performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided), the entity may recognise revenue in the amount to which the entity has a right to invoice.

B17 The disadvantages of output methods are that the outputs used to measure progress may not be directly observable and the information required to apply them may not be available to an entity without undue cost. Therefore, an input method may be necessary.

Input methods

B18 Input methods recognise revenue on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (for example, resources consumed, labour hours expended, costs incurred, time elapsed or machine hours used) relative to the total expected inputs to the satisfaction of that performance obligation. If the entity's efforts or inputs are expended evenly throughout the performance period, it may be appropriate for the entity to recognise revenue on a straight-line basis.

B19 A shortcoming of input methods is that there may not be a direct relationship between an entity's inputs and the transfer of control of goods or services to a customer. Therefore, an entity shall exclude from an input method the effects of any inputs that, in accordance with the objective of measuring progress in paragraph 39, do not depict the entity's performance in transferring control of goods or services to the customer……..

The concessionaire can use either of the method to measure the progress of the performance obligation. While applying these methods following must be kept into consideration:

(a) **Output method**: Output methods include methods such as surveys of performance completed to date, appraisals of results achieved, milestones reached, time elapsed and units produced, or units delivered. In the case of HAM projects, the concessionaire may use the report provided by the Project Engineer to access the performance of performance obligation.
(b) **Input method**: Input methods recognize revenue on the basis of the entity's efforts or inputs to the satisfaction of a performance obligation (for example, resources consumed, labour hours expended, costs incurred, time elapsed or machine hours used) relative to the total expected inputs to the satisfaction of that performance obligation. While applying the input method the entity should keep in mind that the cost incurred during the financial year does not relate to the future expenses. For Ex. advance paid to the contractor should not be considered while applying the input method.

Project Highway: Measuring Progress

In respect of the case study, ACPL may choose any of the two methods to measure the progress of the performance obligation. Since no definite way of output method has been provided as per the facts of the case study, **Input Method** is assumed and applied to measure the progress of performance obligation satisfied over time for ACPL.

Project Highway: Measuring Progress

Based on the input method i.e. based on the cost incurred by ACPL, the measurement of the progress of ACPL's performance obligation during the term of concession is provided in the table below (*without considering the impact of inflation*[3]).

[3] *The authors have not considered the impact of inflation or PIM for the purposes of numerical illustrations provided in Chapter 11 of the book for the ease of understanding.*

Financial Year	Construction Costs		O&M Costs	
	Amount (INR Cr)	%	Amount (INR Cr)	%
FY 2022	113	9.44%	0	0.00%
FY 2023	435	36.22%	0	0.00%
FY 2024	595	49.61%	0	0.00%
FY 2025	57	4.73%	2	1.67%
FY 2026	0	0.00%	4	3.33%
FY 2027	0	0.00%	4	3.33%
FY 2028	0	0.00%	4	3.33%
FY 2029	0	0.00%	4	3.33%
FY 2030	0	0.00%	4	3.33%
FY 2031	0	0.00%	4	3.33%
FY 2032	0	0.00%	34	28.33%
FY 2033	0	0.00%	4	3.33%
FY 2034	0	0.00%	4	3.33%
FY 2035	0	0.00%	4	3.33%
FY 2036	0	0.00%	4	3.33%
FY 2037	0	0.00%	4	3.33%
FY 2038	0	0.00%	4	3.33%
FY 2039	0	0.00%	34	28.33%
FY 2040	0	0.00%	2	1.67%
Total	**1,200**	**100%**	**120**	**100%**

From the above table it is evident that:

- During the first financial year FY 2022, 9.44% of the construction work was complete i.e. there was 9.44% progress towards complete satisfaction of construction service. Thus, 9.44% of the transaction price apportioned to construction service would be recognized as revenue.
- Similarly, in the second financial year FY 2023, 36.22% of the transaction price apportioned to the construction service would be recognized as revenue.
- ACPL started providing O&M services during periods starting FY 2025 till FY 2040.
- During each full operation year, ACPL incurred INR 4 Cr (around 3.33% of total O&M cost), except for 7th year and 14th year, when additional cost of INR 30 Cr was incurred on account of major maintenance.

- Thus, the progress towards complete satisfaction of O&M service was 3.33%, except for the 7th and 14th years (when the progress towards complete satisfaction of O&M service is 28.33%). Accordingly, the revenue in respect of the O&M services would be recognized in these proportions.

The schedule of payments made to Concessionaire along with the Transaction Cost/ Price allocation over the concession period of Project Highway (as per Ind AS 115) is provided in the table below.

Fin. Year	% Constrn completion	% O&M completion	Constrn cost to be recognised	Constrn revenue to be recognised	O&M cost to be recognised	O&M revenue to be recognised	Progress payment and Annuity received	O&M Payment received
	%	%	(INR Cr)	(INR Cr)	(INR Cr)	(INR Cr)	(INR Cr)	(INR Cr)
FY 2022	9.44%	0.00%	113	135	0	0	60	0
FY 2023	36.22%	0.00%	435	519	0	0	240	0
FY 2024	49.61%	0.00%	595	710	0	0	300	0
FY 2025	4.73%	1.67%	57	68	2	2	30	2
FY 2026	0.00%	3.33%	0	0	4	5	60	5
FY 2027	0.00%	3.33%	0	0	4	5	60	5
FY 2028	0.00%	3.33%	0	0	4	5	60	5
FY 2029	0.00%	3.33%	0	0	4	5	60	5
FY 2030	0.00%	3.33%	0	0	4	5	60	5
FY 2031	0.00%	3.33%	0	0	4	5	60	5
FY 2032	0.00%	28.33%	0	0	34	41	60	5
FY 2033	0.00%	3.33%	0	0	4	5	60	5
FY 2034	0.00%	3.33%	0	0	4	5	60	5
FY 2035	0.00%	3.33%	0	0	4	5	60	5
FY 2036	0.00%	3.33%	0	0	4	5	60	5
FY 2037	0.00%	3.33%	0	0	4	5	60	5

Fin. Year	% Constrn completion	% O&M completion	Constrn cost to be recognised	Constrn revenue to be recognised	O&M cost to be recognised	O&M revenue to be recognised	Progress payment and Annuity received	O&M Payment received
FY 2038	0.00%	3.33%	0	0	4	5	60	5
FY 2039	0.00%	28.33%	0	0	34	41	60	5
FY 2040	0.00%	1.71%	0	0	2	2	30	3
Total	**100%**		**1,200**	**1,432**	**120**	**143**	**1,500**	**75**

It is pertinent to mention here that the above-mentioned proportions may significantly vary if the impact of inflation is considered for these amounts. However, the same is not considered for an easy understanding of the basic accounting treatment by the users.

10.5 Financial Asset—HAM Based PPP Projects

10.5.1 Background

The Appendix D of Ind AS 115 provides guidance for accounting and recognition of revenue in case of service concession arrangements such as HAM and has to be adhered to while recognizing revenue.

Further, Appendix D also provides guidance for determining the nature of the consideration given by grantor to the operator, its measurement and subsequent accounting treatment. Relevant paras of Appendix D are reproduced below:

Consideration given by the grantor to the operator

15 If the operator provides construction or upgrade services the consideration received or receivable by the operator shall be recognised in accordance with Ind AS 115. The consideration may be rights to:

(a) a financial asset, or

(b) an intangible asset.

16 The operator shall recognise a financial asset to the extent that it has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services; the grantor has little, if any, discretion to avoid payment, usually because the agreement is enforceable by law. The operator has an unconditional right to receive cash if the grantor contractually

guarantees to pay the operator (a) specified or determinable amounts or (b) the shortfall, if any, between amounts received from users of the public service and specified or determinable amounts, even if payment is contingent on the operator ensuring that the infrastructure meets specified quality or efficiency requirements.

.....

19 The nature of the consideration given by the grantor to the operator shall be determined by reference to the contract terms and, when it exists, relevant contract law. The nature of the consideration determines the subsequent accounting as described in paragraphs 23–26 of this Appendix. However, both types of consideration are classified as a contract asset during the construction or upgrade period in accordance with Ind AS 115.

.....

Financial asset

23 Ind ASs 32, 107 and 109 apply to the financial asset recognised under paragraphs 16 and 18 of *this Appendix.*

24 The amount due from or at the direction of the grantor is accounted for in accordance with Ind AS 109 as measured at:

(a) amortised cost;

(b) fair value through other comprehensive income; or

(c) fair value through profit or loss.

25 If the amount due from the grantor is measured at amortised cost or fair value through other comprehensive income, Ind AS 109 requires interest calculated using the effective interest method to be recognised in profit or loss.

10.5.2 Recognition of Financial Asset

In accordance with above provisions, an entity shall recognize a financial asset to the extent the entity has **unconditional contractual right to receive cash or another financial asset** from or at the direction of the grantor for the construction services. The operator has an unconditional right to receive cash if the ***grantor contractually guarantees to pay the operator specified or determinable amounts.*** Further Ind AS 32, 107 and 109 would apply to the Financial Asset recognized under para 16 of Appendix D.

As per Article 23, para 23.4 of MCA, concessionaire receives 4% of bid project cost, adjusted for inflation, during construction period upon physical completion as per below mentioned milestones:

a) I (first) Payment Milestone - On achievement of 5% Physical Progress

b) II (second) Payment Milestone - On achievement of 10% % Physical Progress

c) III (third) Payment Milestone - On achievement of 20% Physical Progress

d) IV (fourth) Payment Milestone - On achievement of 30% Physical Progress

e) V (fifth) Payment Milestone - On achievement of 40% Physical Progress

f) VI (sixth) Payment Milestone - On achievement of 50% Physical Progress

g) VII (seventh) Payment Milestone - On achievement of 60% Physical Progress

h) VIII (eighth) Payment Milestone - On achievement of 70% Physical Progress

i) IX (ninth) Payment Milestone - On achievement of 80% Physical Progress

j) X (tenth) Payment Milestone - On achievement of 90% Physical Progress

As per Authors' view, the financial asset should be recognized as and when the milestone as provided in Article 23 of the Agreement is achieved by the concessionaire and accordingly the payment against that milestone is guaranteed under the Agreement. However financial asset is to be recognized only to the extent of 40% i.e. the amount which becomes payable on completion of each of the milestone.

Further, in terms of Article 15.1 of MCA, the Concessionaire receives an unconditional right to receive the balance of (approximately) 60% of the bid project cost as and when the construction is complete and COD is issued. Thus, the Financial Asset equal to appx. 60% of Bid Project Cost should be recognized on the date of COD (or provisional COD). The fact that the said balance amount would be due and payable to the concessionaire in bi-annual installments over the period of 15 years commencing from COD would not make any difference for the purpose of recognition of financial asset as the unconditional right to receive balance payment would arise immediately after completion of construction. Article 15 of the MCA is reproduced below for ready reference:

15.1 Commercial Operation Date (COD)

15.1.1 The Project shall be deemed to be complete when the Completion Certificate or the Provisional Certificate, as the case may be, is issued under the provisions of Article 14, and accordingly the commercial operation date of the Project shall be the date on which such Completion Certificate or the Provisional Certificate is issued {the COD). ***The Project shall enter into commercial service on COD whereupon the Concessionaire shall be entitled to demand and collect Annuity Payments in accordance with the provisions of this Agreement.***

10.5.3 Measurement of Financial Asset

In terms of para 24 of Appendix D of the Service Concession Agreement the Financial Asset so created shall be recognized in accordance with Ind AS 109 and would be measured at:

a. Amortised cost; or
b. Fair value through other comprehensive income; or
c. Fair value through profit and loss

Further, where the financial asset is measured at amortised cost or fair value through other comprehensive income, interest should be recognized in the profit and loss account using the effective interest method (as per the requirement of Ind AS 109).

Project Highway: Financial Asset

For the case study, the financial asset would be recognized based on the payment due to ACPL (as per the milestones achieved) and subsequently adjusted based on the payments made by the Authority to the Concessionaire.

On the COD date, ACPL is required to recognize the financial asset equal to that remaining portion (60%) of bid project cost which is payable by NHAI to ACPL in equal bi-annual installments.

The fact that the said balance amount would be due and payable to the concessionaire in bi-annual installments over the period of 15 years commencing from COD would not make any difference for the purpose of recognition of financial asset as the unconditional right to receive balance payment would arise immediately after completion of construction in terms of para 15.1 of the Concession Agreement.

Further, the financial asset created by ACPL shall be reduced each year by the amount of annuity payments received during that year.

10.6 Contract Asset and Contract Liability—HAM Based PPP Projects

The concept of contract asset, contract liability and receivable is provided in para 105 to para 109 of Ind AS 115. Para 105 to 109 are reproduced below for ready reference.

105 When either party to a contract has performed, an entity shall present the contract in the balance sheet as a contract asset or a contract liability, depending on the relationship between the entity's performance and the customer's payment. An entity shall present any unconditional rights to consideration separately as a receivable.

106 If a customer pays consideration, or an entity has a right to an amount of consideration that is unconditional (ie a receivable), before the entity transfers a good or service to the customer, the entity shall present the contract as a contract liability when the payment is made or the payment is due (whichever is earlier). A contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer.

107 If an entity performs by transferring goods or services to a customer before the customer pays consideration or before payment is due, the entity shall present the contract as a contract asset, excluding any amounts presented as a receivable. A contract asset is an entity's right to consideration in exchange for goods or services that the entity has transferred to a customer. An entity shall assess a contract asset for impairment in accordance with Ind AS 109. An impairment of a contract asset shall be measured, presented and disclosed on the same basis as a financial asset that is within the scope of Ind AS 109 (see also paragraph 113(b)).

108 A receivable is an entity's right to consideration that is unconditional. A right to consideration is unconditional if only the passage of time is required before payment of that consideration is due. For example, an entity would recognise a receivable if it has a present right to payment even though that amount may be subject to refund in the future. An entity shall account for a receivable in accordance with Ind AS 109. Upon initial recognition of a receivable from a contract with a customer, any difference between the measurement of the receivable in accordance with Ind AS 109 and the corresponding amount of revenue recognised shall be presented as an expense (for example, as an impairment loss).

109 This Standard uses the terms 'contract asset' and 'contract liability' but does not prohibit an entity from using alternative descriptions in the balance sheet for those items. If an entity uses an alternative description for a contract asset, the entity shall

provide sufficient information for a user of the financial statements to distinguish between receivables and contract assets.

10.6.1 Contract Asset

In terms of para 107, contract asset is created if an entity performs by transferring goods or services to a customer before the customer pays consideration or before payment is due, excluding any amounts presented as a receivable. Further, from para 105 and para 107, it is evident that contract asset is a different concept than receivable. Receivable is defined as an entity's right to consideration that is unconditional. A right to consideration is unconditional if only the passage of time is required before payment of that consideration is due.

Thus, the contract asset and the receivable i.e. the financial asset are different rights of an entity. Contract asset arises when the goods or services are transferred but the payment in respect of such transfer has not been received or has not become due whereas receivable or the Financial asset is an entity's right to consideration that is unconditional. For recognizing receivable the timing of transfer of goods and service is immaterial.

Project Highway: Contract Asset

For the case study, the contract asset would represent the amount of revenue recognized against the allocated transaction price in respect of the performance obligation. In the present case, at the end of first year, ACPL has completed 9.44% of the work. Thus, at the end of first year, 9.44% of allocated transaction price for construction service would be recognized as contract asset. However, since some amount has already become due under the Contract, this shall be reflected as financial asset/ receivable.

The table below provides an illustration for contract asset account of Project Highway (excluding the impact of inflation).

Financial Year	Opening	Addition (Work done during the year)	Transfer to Financial Asset	Closing Contract Asset
	(INR Cr)	(INR Cr)	(INR Cr)	(INR Cr)
FY 2022	0	135	60	75
FY 2023	75	519	240	354
FY 2024	354	710	300	764
FY 2025	764	68	832	0
FY 2026	0	0	0	0

10.6.2 Contract Liability

As per para 106 of Ind AS 115, contract liability arises where the customer pays the consideration to the entity, or unconditional right (i.e. a receivable) to receive consideration accrues, before the entity transfers a good or service to the customer. Further, contract liability is required to be recognised at the time when the payment is made or the payment is due, whichever is earlier. A contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer.

Contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer. Thus, in case of HAM project, contract liability arises in a situation where the entity has received the consideration from the Authority or the right to receive consideration from the Authority has accrued but the goods or services under the concession agreement has not been transferred by the concessionaire.

For instance, contract liability would arise where the concessionaire has received the advance for construction, but the project is yet to be constructed. Likewise Contract liability would also be created where some portion of bid project cost is construed to be making up for the O&M activity. Thus, if without carrying out the O&M activity, a percentage of bid project cost becomes due to the entity, that portion which relates to the O&M shall become contract liability.

Project Highway: Contract Liability

From para 106 of Ind AS 115, contract liability is an entity's obligation to transfer goods or services to a customer for which the entity has received consideration (or an amount of consideration is due) from the customer.

Thus, in case of HAM project, contract liability arises in a situation where the entity has received the consideration from authority or received the right to receive consideration from Authority but has not transferred the service.

For instance, contract liability would arise where the concessionaire has received the advance for construction, but the project is yet to be constructed. Likewise Contract liability would also be created where some portion of bid project cost is construed to be making up for the O&M activity. Thus, if without carrying out the O&M activity, a percentage of bid project cost becomes due to the entity, that portion which relates to the O&M shall become contract liability.

The table below provides an illustration for contract liability account of Project Highway (excluding the impact of inflation).

Financial Year	Opening	Addition (O&M revenue is due but not paid)	Reduction (revenue recognised towards O&M)	Closing
	(INR Cr)	(INR Cr)	(INR Cr)	(INR Cr)
FY 2022	0	0	0	0
FY 2023	0	0	0	0
FY 2024	0	0	0	0
FY 2025	0	68[4] + 2	2	68
FY 2026	68	5	5	68
FY 2027	68	5	5	68
FY 2028	68	5	5	68
FY 2029	68	5	5	69
FY 2030	69	5	5	69
FY 2031	69	5	5	69
FY 2032	69	5	41	33
FY 2033	33	5	5	34
FY 2034	34	5	5	34
FY 2035	34	5	5	34
FY 2036	34	5	5	34
FY 2037	34	5	5	34
FY 2038	34	5	5	34
FY 2039	34	5	41	0
FY 2040	0	2	2	0

[4] Contract liability created on achieving COD. Portion of BPC relatable to O&M transaction price, though included in the amount that becomes receivable on COD. Computation 1500 Cr – 1432 Cr = 68 Cr.

Illustrative journal entries for first financial year i.e. FY 2022 have been discussed below [refer table **Project Highway: Measuring Progress** in this Chapter]

S. No.	Journal Entry	Debit (INR Cr)	Credit (INR Cr)
1.	Cost of Construction Dr To Bank (For expenses incurred on construction)	113	113
2.	Contract Asset Dr To Revenue (Revenue shall be recognized as per progress of construction i.e. 9.44% of construction is completed in Year 1, 9.44% of the allocated transaction price for construction shall be taken)	9.44% * 1432 = 135	135
3.	Financial Asset Dr To Contract Asset (Being unconditional contractual right has arisen with regards to receipt of 4% of BPC as the agreed milestone of 5% has been achieved. Since at this time ACPL is only engaged in construction, thus it is assumed that whole of the milestone relates to construction activity))	4% * 1500 = 60	60
4.	Bank Dr To Financial Asset (Being payment received from authority for one milestone)	4% * 1500 = 60	60

Note Inflation has been ignored while passing these entries.

Illustrative journal entries for second financial year i.e. FY 2023 have been discussed below.

S. No.	Journal Entry	Debit (INR Cr)	Credit (INR Cr)
1.	Cost of Construction Dr To Bank (For expenses incurred on construction)	435	435
2.	Contract Asset Dr To Revenue (Revenue shall be recognized as per progress of construction i.e. 36.22% of construction is completed in Year 2, thus, revenue of 36.22% of the allocated transaction price is recognised)	36.22% * 1432 = 519	519
3.	Financial Asset Dr To Contract Asset (Being unconditional contractual right for 4 milestones of 4% each has arisen as total of 45.66% of construction work has been completed by ACPL. Since at this time ACPL is only engaged in construction, thus it is assumed that whole of the milestone relates to construction activity)	4 * (4% * 1500) = 240	240
4.	Bank Dr To Financial Asset (Being payment received from authority for 4 milestone payments)	4 * (4% * 1500) = 240	240

Note Inflation has been ignored while passing these entries.

Illustrative journal entries for fourth financial year i.e. FY 2025 (i.e. the year of receiving COD) have been discussed below.

S. No.	Journal Entry	Debit (INR Cr)	Credit (INR Cr)
1.	Cost of Construction Dr To Bank (For expenses incurred on construction)	57	57
2.	Contract Asset Dr To Revenue (Revenue shall be recognized as per progress of construction i.e. 4.73% of construction is completed in Year 4, thus 4.73% of the allocated transaction price for construction shall be recognised as revenue)	4.73% * 1432 = 68	68
3.	Financial Asset Dr To Contract Asset To Contract liability (Being unconditional contractual right for receiving 60% of BPC has arisen as COD has achieved. BPC mainly includes the consideration towards construction however, some portion pertaining to O&M is also loaded in BPC. The amount of O&M loaded in BPC is 1500–1432 = 68)	900	 832 68[5]
4.	Bank Dr To Financial Asset (Being payment received from authority for annuity)	30	 30

Note Inflation has been ignored while passing these entries. Payment of annuity has been accounted for without considering interest.

[5] INR 68 Cr is the difference between BPC and allocated transaction price for construction service. INR 68 Cr depict the consideration towards operation and maintenance service that forms part of BPC.

Part IV
International Experience of Hybrid PPPs

Success of Hybrid PPPs

11

Since the 1990s, PPP models have been developed and introduced and have evolved. Infrastructure development is a priority for many emerging economies to stimulate economy. PPPs is one of the ways to mobilize private and commercial capital to overcome constraints on government financial resources for development of large infrastructure projects. Continuous improvement in policy and regulatory framework, along with introduction of hybrid approaches and innovative financing modalities for PPP projects, will be key driving factors to enhance upstream capability and for better project preparation of such infrastructure projects.

11.1 Hybrid PPP approaches

Hybrid PPPs combine two or more project delivery models to improve bankability of projects and attract larger interest from private sector developers and financiers, alike [1, 2].

- ***Hybrid budget or Government support***—Both cash and contract-based budgets are employed for development of large infrastructure projects. Under the cash-budget, the payments for infrastructure development should be done within the same year while under a contract-based budget, the payments for infrastructure development is earmarked (as a liability on government's financials) but the actual payment can be made over a long-term even after the end of the year (for example, extended annuity payments over 15 years in a HAM based PPP model for roads sector in India).

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
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- ***Hybrid of components***—A pure PPP arrangement, like DBFOT, grants private sector payer more than one function for the infrastructure project delivery. However, a spectrum of PPP models or a hybrid of components approach may allow certain functions to be performed by the public sector to reduce the risk borne by the private sector and enable competition. For example, design and land acquisition component for a project may be completed by the public sector while private sector can be employed to construct and maintain the project.
- ***Hybrid of projects***—Another hybrid approach for delivery of smaller infrastructure projects is to bundle multiple projects together into one sizable infrastructure project. There could be a PPP for multiple schools/healthcare clinical facilities, waste-to-energy project (including solid-waste collection, processing and incineration for electricity production) etc.
- ***Hybrid of government agencies***—For complex infrastructure projects, there could be more than one implementing agency from the government/procurer side given the specific jurisdictions and capability of personnel. For example, delivery of municipal projects (like solid waste management or water distribution) often involves urban local bodies/municipal corporations along with the federal/state governments for possible subsidy/grant funding support needed for delivery of such projects.

11.2 International Case Studies—Introduction

Internationally, there are some relevant examples wherein the hybrid approach to PPP projects has helped in faster, cost effective and superior quality infrastructure projects in roads sector.

In this chapter, three (3) such case studies are discussed with details of the project background and objectives, project structure, risk allocation and key learnings. A summary of the case studies discussed in subsequent chapters is provided in Table 11.1.

For each case study, the risk allocation across the construction and operation phase is contrasted with the HAM based PPP in roads sector in India so as to give reader a better understanding on how such allocation, specific to each hybrid PPP model, is relevant given the external factors like project size/capital investment required, regulatory framework, maturity of capital markets, private sector capability in a specific geography etc.

Table 11.1 International Case Studies on Hybrid PPPs—Summary

Country	Project Name	Sector	Concession Length	Private Sector Role	Public Sector Role
Ireland	N1/M1 Dundalk Bypass	Roads	30 years	• Operate and maintain a 43 km section of motorway which was completed by government via public works procurement • Design, build, finance, construct, operate and maintain a new 11 km section to the motorway • Thus, private sector would do O&M for entire 54 km of motorway	• Finance, design and construction of the Drogheda Bypass • Awarding and managing the tender process of the Dundalk Bypass • Overall planning and supervision of the construction and maintenance
Philippines	Clark International Airport	Airports	25 years	• Operation and maintenance of the existing terminal and upcoming new terminal (including airfield ancillary airport facilities) • This is the first project under Philippines hybrid PPP model	• Finance of the project during construction phase • Design and construction of the New Terminal Building • Overall planning and supervision of the construction and maintenance • Awarding and managing the tender process
United Kingdom (*UK*)	Thames Tideway Tunnel	Water and Sewerage	125 years	• Coordinate financing and construction of the Thames Tideway Tunnel • Operate and maintain asset	• Oversee design and construction • Monitor performance • Regulate consumer charges

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Ireland—N1/M1 Dundalk Bypass

12

The N1/M1 Dundalk Bypass forms part of the strategic north–south route corridor entitled Euroroute E01 which links Belfast and Dublin and provides access to the main commercial seaports and airports in the country.

For the purposes of this PPP contract, an already existing bypass, namely the Dundalk bypass was combined with a yet to be constructed Drogheda bypass; and the entire length was tendered as a single project for operation by the private sector:

1. **Drogheda Bypass**—Construction began in 2000 and was opened to traffic in June 2003. As with all projects at that time, Drogheda Bypass was procured via a traditional procurement route. Drogheda needed grant funding as the economics of the project indicated it was not a feasible project on a stand-alone basis. This was due to the forecasted revenue being too low compared to the capital investment.
2. **Dundalk Bypass**—Construction began in 2004 and was completed in September 2005. For this particular bypass, the project economics was good and therefore, the Dundalk Bypass was one of the first projects realized by the Government of Ireland in its PPP program.

The main reason for the combination of the two projects was an expectation that better operational and managerial efficiencies would be achieved, and that more revenue would be generated from tolls.

This chapter provides a detailed review of the transaction structure risk allocation framework during the operation phase and the key learnings from the complex delivery of this project which required the coordination of several different organizations manufacturers, suppliers, subcontractors, and specialists.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_12

12.1 N1/M1 Dundalk Bypass—Project Information

12.1.1 Introduction

N1/M1 Dundalk Bypass was one of the projects announced by the National Roads Authority (NRA) in June 2000 under Tranche II of the PPP Roads programme. The Dundalk Western Bypass forms a key part of the M1 road corridor and is also a part of the Trans-European Road Network (Euroroute E01).

Prior to this project, the M1 motorway terminated to the south of Dundalk and all traffic had to pass through Dundalk town with resultant delays and congestion difficulties. This project, and the new section of road reduced travel time significantly for road users.

12.1.2 Key Features of the Project

Table 12.1 provides key project information, including contractual structure and various stakeholders.

This structure is not a pure hybrid structure, as it actually consists of two separate projects; which together form one road: one is a typical PPP project; the other was publicly procured using Cohesion funding. There was never an intention to combine the two projects. However, due to the circumstances encountered, the two projects were linked, and this and this has been successful.

The key success factors in this combination were:

- There was no need to coordinate the timetables of applying for the EU money and bidding for a PPP project;
- The private bidder on the Dundalk Bypass did not have to assume the risk of receiving the EU funding.

Hence, the above factors are conditions for any successful hybrid project and this case study is further explored in detailed in subsequent sections.

12.2 Project Structure

This section describes the contractual structure for the project, key stakeholders and review of their roles and responsibilities in this project [1, 2].

The project was awarded to of Celtic Road (Dundalk) Group Ltd (CRG) in 2004. The project was procured as a 30 years PPP concession to:

- design, construct, finance, operate and maintain a new 11 km section of motorway, the Dundalk Bypass, along with approximately 7 km of new link roads, 12 over/under-bridges and a major railway over-bridge; and
- operate and maintain the Drogheda Bypass, consisting of 21.5 km of dual carriageway (Fig. 12.1 and Table 12.2).

Table 12.1 Project Information—N1/M1 Dundalk Bypass

Background	The total project consists of the following toll road projects, procured separately [1–3]: 1. **A public procurement** to construct the **Drogheda Bypass**. This project has been financed by the Irish Government, and partly co-financed by the Cohesion Fund of the European Union. 2. **A 30 years PPP concession** to: • Design, construct, finance, operate and maintain a new 11 km section of motorway, along with 7 km of new link road, 12 bridges and 1 railway over bridge • Operation and maintenance of 43 km of the existing **Drogheda Bypass** After the end of concession period, the road to be handed back to authority/ NRA with the residual life span of 10 years.
Project Objectives	• Reduce congestion in the center of Dundalk town and reduce journey times by providing an effective bypass of the town • Provides a new motorway section linking the major commercial seaports at Larne, Belfast, Dublin and Rosslare and the major airports of Dublin and Belfast • Forms part of the link of the three largest centers of population on the island (Dublin, Belfast, and Cork)
Private Sector Players	1. **Drogheda Bypass**: The motorway was designed by NorthConsult and managed by Meath National roads Design Office. The main contractors were SIAC O'Rourke JV, SIAC Cleveland Bridge JV and Uniform Construction. 2. **Dundalk Bypass**: The contract was awarded to Celtic Roads Group (Dundalk) Ltd. in October 2003 and the project was reached financial closed in February 2004. The Celtic Roads Group (CRG) was a consortium consisting of below players: The winning consortium, Celtic Roads Group (Dundalk) Ltd (CRG) comprises: • Dragados Concesiones de Infraestructuras SA - a subsidiary of ASC-Dragados; • the Netherlands based HBG Group (Hollandse Beton Groep NV), which is part of Royal BAM, operating through two subsidiaries: – Edmund Nuttall Ltd (UK) – Ascon Ltd (Ireland) • NTR plc (Irl)—National Toll Roads plc. The current holding of the consortium/ project SPV is with below entities [4]: • The Royal BAM Group, Netherlands (33.33%) • DIF, Netherlands (33.33%) • Semperian, UK (33.33%)

(continued)

Table 12.1 (continued)

Funding	Dundalk Bypass was funded by the CRG consortium. • Total Cost of building the project was USD 158 Mn [4], excluding the cost of land acquisition. Estimated cost of land, preliminary studies and other related costs was approximately USD 55 Mn. • Around USD 100 Mn of debt was arranged by a group of financing instructions led by Société Générale, along with other banks including Allied Irish Bank (Ireland), DEPFA Bank PLC (Ireland) and KBC Bank (Belgium). • Further, some amount of debt funding was also provided by Spain's Instituto de Crédito Oficial and the European Investment Bank (Luxembourg).
Government Agency	The National Roads Authority (NRA), which was formally established as an independent statutory body under the Roads Act, 1993.

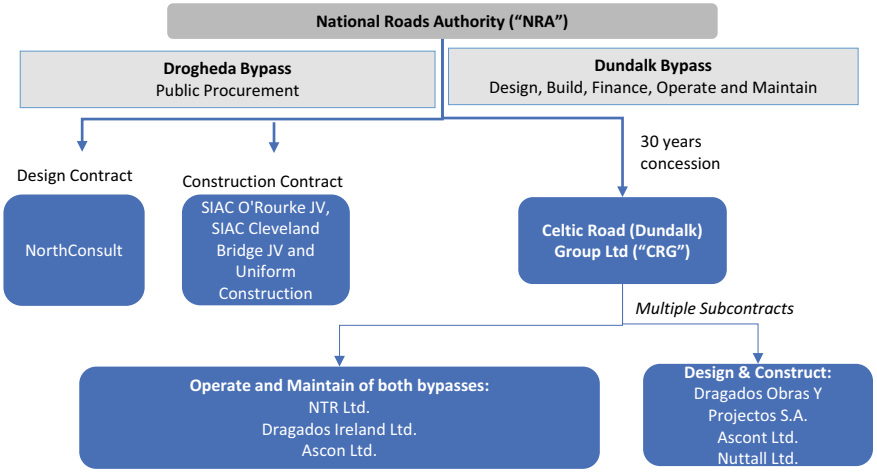

Fig. 12.1 Contractual Structure—N1/M1 Dundalk Bypass, Ireland

12.3 Risk Allocation

This section describes the risk allocation of the N1/M1 Dundalk Bypass project during the design, construction and operation phases of the project. For each risk parameter, a comparison is drawn with the Hybrid Annuity Model (HAM) based road PPP projects in India to enhance the understanding of the reader (Table 12.3).[1]

[1] *The risk allocation is interpreted based on information collated from various publicly available information and experience of authors, and may require further verification from actual PPP contracts for completeness.*

Table 12.2 Key Stakeholders—N1/M1 Dundalk Bypass, Ireland

Type	Stakeholder	Roles and Responsibilities
Government Authority	National Roads Authority (NRA)	• Responsible for analyzing and preparing the project, as well as for awarding and management of the tendering process • Overall responsibility for planning and supervision of construction and maintenance works on these roads
Design—Drogheda Bypass	NorthConsult	• Complete the full detailed design of all new build elements
Build—Drogheda Bypass	SIAC O'Rourke JV, SIAC Cleveland Bridge JV and Uniform Construction	• Construct all the new works • Upgrade aspects of the existing motorways • Assume responsibility for ground conditions, archaeological monitoring and resolution, utility relocations and landscaping
Design, Build Operate and Maintain—Dundalk Bypass	Celtic Road (Dundalk) Group Ltd (CRG)	The Dundalk Western Bypass PPP scheme involves [4, 5]: • The construction of a new 12-km bypass, the Dundalk Western Bypass; • The tolling of approximately 15-km on the southern end of the M1 Northern Motorway, comprising the Boyne River Bridge. The operation of tolling would start six weeks after the award of the contract; • Operation and maintenance of approximately 42-km of Existing Road, comprising the Dunleer-Dundalk Motorway, the Dunleer Bypass and the Northern Motorway from three months after the awarding of the contract; and • Operation and maintenance of the New Road once it was completed. Thus, CRG is responsible to manage the road (both Dundalk and Drogheda Bypass) in terms of safety, traffic management; and operate the tolling system to the required levels of service and upgrade it as necessary to match demand.

Table 12.3 Risk Allocation—N1/M1 Dundalk Bypass, Ireland

No.	Risk categories	N1/M1 Dundalk Bypass	Comparison with HAM based PPP Projects
1	Design Risk – the risk potential for a design to fail to satisfy the requirements for a project	***Borne by the private sector***. • CRG has principal responsibility for adequacy of the design of the system and its compliance with the output/performance specification.	***Borne by the private sector***. • The design risk is minimal in road projects since detailed project specifications are provided by the government. • If the private sector intends to use a new construction technology or material, they are allowed to do so provided it is already proven and successful in past projects.
2	Environmental and Social Risk – the risk of the damage to the environment or local communities by a project	***Borne by the private sector***. • CRG has primary responsibility to manage the environmental and social strategy across the project, as well as obtaining all required licenses, permits and authorizations, as necessary. However, the government support and facilitation was provided when needed.	***Borne by the public sector***. • Government is responsible to perform necessary studies relating to environmental and social aspects prior to the implementation of the project. • The nodal agency (e.g. NHAI in case of national highway projects) is also responsible for rehabilitation and resettlement (R&R) in case of displaced houses due to land acquisition.
3	Land purchase and Site risk – the risk of acquiring land for a project and geophysical conditions	***Borne by the public sector***. • Public sector bears the principal risk as it selects and acquires the required land interests for both the Drogheda and Dundalk project.	***Borne by the public sector***. • Availability of Project site and right of way for the 80% length of project before appointed date, with the remaining land to be provided within 90 days of the appointed date as per the concession agreement.
4	Construction Risk – the risk associated with the construction cost increase and time delays for a project	***Borne by the private sector***. • As CRG contracts with the sub-contractors, it assumes project management risk and risk of cost overrun where no compensation/relief event applies.	***Shared between public and private sector***. • Project Capital Cost is inflation indexed (through a Price Index Multiple/PIM, which is the weighted average of Wholesale Price Index (WPI) and Consumer Price Index (CPI) (IW) in the ratio of 70:30.

(continued)

Table 12.3 (continued)

No.	Risk categories	N1/M1 Dundalk Bypass	Comparison with HAM based PPP Projects
5	Demand Risk – the risk of revenue variation linked to the demand or use of a project by end-users	***Borne by the private sector***. • Road users pay tolls to the operator which is contracted by CRG. Hence, any decrease in road users would directly impact CRG's revenues.	***Borne by the public sector***. • During operational phase, responsibility of toll collection is with government authority and hence, the demand risk is fully borne by the public sector/government authority • Cash flow to concessionaire is assured in the form of annuity payments on semi-annual basis covering 60% of the bid project cost; and interest shall be due and payable on the reducing balance of completion costs at an interest rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25%
6	Maintenance Risk – the risk of maintaining the asset to the appropriate standards and technical specifications	***Borne by the private sector***. • CRG takes the primary risk that the toll road will be maintained to a sufficient level of quality and reliability to ensure that it can continue to attract business. • For the Drogheda Bypass, as CRG accepted responsibility for the road that had already been built, there is additional latent defect risk, which affects future maintenance risk.	***Borne by the private sector***. • Concessionaire is responsible for the operation and maintenance of the project. • The concessionaire receives semi-annual inflation indexed O&M payments (as quoted during the bid stage). • The inflation index used of indexation of O&M payment is Price index multiple (PIM)

Box: What worked well for the N1/M1 Dundalk Bypass project

Although not intended as a hybrid PPP at the time of project conceptualization, this project is seen as a successful case study due to below factors:

- Procurement went smoothly, and took only 3 months from announcing a preferred bidder to the financial close (whereas 6–8 months on average for traditional PPPs). No other complexities have been identified.
- The Dundalk Bypass opened 4 months ahead of schedule.
- The Drogheda Bypass was already operating when the procurement for Dundalk Bypass was announced. The bidders competing in the tender for Dundalk had readily available information about the traffic levels on the road and better projections as traffic at Drogheda would give a very good indication of traffic at Dundalk.
- Excess traffic volumes in the initial years of the opening of the Dundalk Bypass have resulted in some unanticipated revenue share payments to the NRA.

12.4 Key Learnings

The two projects originally developed separately: Drogheda Bypass as traditional procurement cofounded by the Cohesion Fund, Dundalk Bypass as a PPP. They were combined at a later stage. The rationale for the combination was the ability of the private sector to generate more toll revenue. The combination was a coincidence, rather than an intended structure, and it was successful model which can be adopted for other road transport projects as a Hybrid PPP structure.

Listed below are the key lessons learnt from the implementation of this project for both public and private sector:

- A divisible infrastructure project can be considered when the individual project structures can be determined according to the project economics at the time of procurement.
- O&M contractor should be involved in specifying the design of the project to optimize whole-of-life costs in achieving performance obligations.
- Payment mechanism should be structured appropriately to achieve objectives. For example, include payment incentives for private sector for improving O&M performance.
- Timeline of multiple projects should be coordinated to facilitate a seamless transition from the end of construction to start of operations.
- Additional latent defect risk has to be accounted for when the private sector has to accept responsibility for the maintenance of the toll road that has already been built.

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Philippines—Clark International Airport

13

The Clark International Airport (CIA) passenger terminal expansion project is the first hybrid PPP in the Philippines under the Build, Build, Build program of Philippines launched in 2017 by the Government of Philippines. The program is aimed at financing of big-ticket infrastructure projects to speed up the process and cut on projects costs, so it could deliver the economic benefits of these projects to the people at the soonest possible time.

This particular hybrid PPP model involves private sector participation under two separate contracts during the construction and operation phase of the project with a key success factor being management of the interface risk between the two private sector players.

Under this, the government will fund, using its own funds or secured through borrowings or official development assistance, design and build, either through procurement or administration, infrastructure project. After completion of construction or a certain period, the same or a different private sector concessionaire (selected again through a competitive bid process) will operate, manage and maintain the infrastructure project. In this case, the hybrid is sequential, not simultaneous (Fig. 13.1).

Examples of projects under the hybrid PPP scheme of Philippines include the Clark International Airport New Terminal Building Project and Central Luzon Expressway (CLLEX) Phase 1 O&M and Phase 2 Project. In this chapter, the first project is discussed in detail.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
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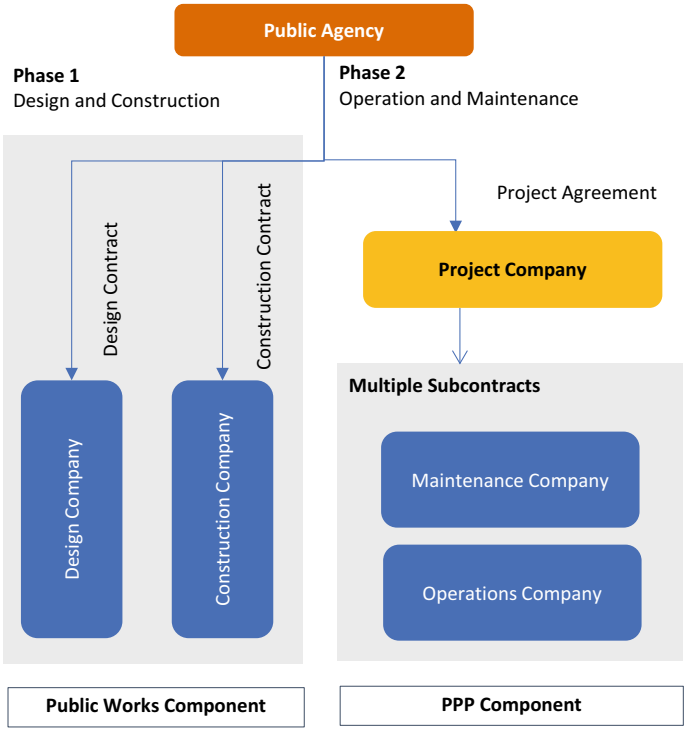

Fig. 13.1 Hybrid PPPs in Philippines—An illustration

13.1 Clark International Airport—Project Information

13.1.1 Introduction

The Philippines' Greater Capital Region (GCR) of Metro Manila is served by the Ninoy Aquino International Airport (NAIA). Due to existing constraints at NAIA in terms of its terminal design capacity, runway capacity and apron capacity; there were frequent flight delays, diversion to other airports and cancellations leading to significant costs to airlines and passengers [1].

In 2016, the government owned corporation Bases Conversion Authority (BCDA), appointed the International Finance Corporation (IFC), with the support of the Global Infrastructure Facility (GIF), came to decision on modernize Clark International Airport through an innovative hybrid PPP scheme to become the second airport gateway of the GCR.

Under the hybrid PPP approach, the government finances the entire construction cost of the project since it in a position to borrow money cheaper than the private sector due to:

- Steady revenue stream from Tax Reform for Acceleration and Inclusion Act (TRAIN),
- Increased flow of official development assistance (ODA), and
- Issuance of bonds due to increased investment-grade credit ratings by S&P.

The construction of the project was completed in October 2020 and became operational in September 2021 [2, 3].

13.1.2 Key Features of the Project

Table 13.1 provides key project information, including contractual structure and various stakeholders.

13.2 Project Structure

This section describes the contractual structure for the project, key stakeholders and review of their roles and responsibilities in this project [1, 2] (Fig. 13.2 and Table 13.2).

Table 13.1 Project Information—Clark International Airport, Philippines

Background	BCDA, the nodal agency of the Government of Philippines for the project, called it the 'fastest PPP' to be auctioned by the national government, having awarded the EPC contract to Megawide-GMR. The entire process of evaluating, opening technical and financial offers was compressed to two (2) weeks.
Project Objectives	The Government of the Philippines (GOP) intends to facilitate the full development of CIA as a major gateway to and from the Philippines. This is expected to alleviate traffic congestion in the Ninoy Aquino International Airport (NAIA) and to accommodate the growing traffic through North and Central Luzon, CIA's organic catchment area.
Funding	GMR-Megawide entered the lowest bid of PHP 9.3 bn (USD 180 Mn). 100% of the EPC price was funded by BCDA through General Appropriations Act (GAA). The O&M contract, with a term of 25 years, will be funded by the gross revenues being generated by airport in term of passenger handling fees,
Government Agency	Bases Conversion and Development Authority (BCDA), Government of Philippines. BCDA is responsible for PPP in public infrastructure such as roads, airport, seaport etc. BCDA is the government authority which has awarded EPC and O&M contract to different companies as stated below. BCDA is also responsible for handling project monitoring office with the coordination of Department of Transport (DOT), Philippines.

(continued)

Table 13.1 (continued)

Private Sector Players	The construction contract was awarded to Megawide-GMR consortium [3], with a timeline of construction set as 24 months, comprising: • Megawide Construction (Philippines) • GMR Infrastructure (India). The O&M contract has been awarded to North Luzon Airport Consortium (NLAC) comprising of below members: • Filinvest Development Corporation (Philippines) • JG Summit Holdings, Inc., (Philippines) • Philippine Airport Ground Support Solutions, Inc. (Philippines) • Changi Airport Group (Singapore) NLAC's financial bid offer of 18.25% annual gross revenue percentage share (to the government) was almost twice the minimum rate set at 10% as approved by the government. The project was completed in October 2020 and became operational in September 2021.

13.3 Risk Allocation

This section describes the risk allocation of the Clark International Airport (CIA) passenger terminal expansion project during the design, construction and operation phases of the project. For each risk parameter, a comparison is drawn with the Hybrid Annuity Model (HAM) based road PPP projects in India to enhance the understanding of the reader (Table 13.3).

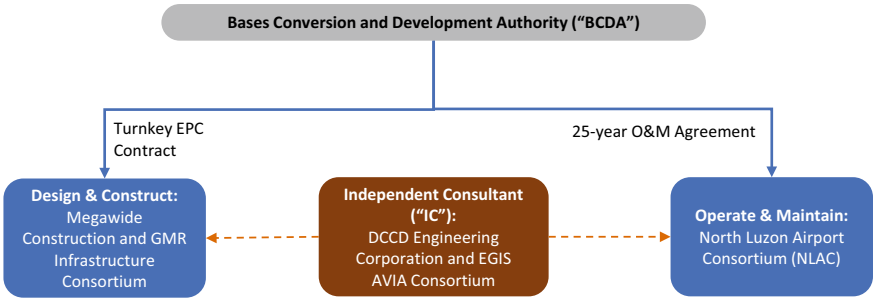

Fig. 13.2 Contractual Structure—Clark International Airport, Philippines

Table 13.2 Key Stakeholders—Clark International Airport, Philippines

Type	Stakeholder	Roles and Responsibilities
Government Authority	Bases Conversion and Development Authority (BCDA)	• Responsible for funding of the project during construction phase • Award and management of the tendering process • Overall responsibility for planning and supervision of construction and maintenance of the airport • Provide passenger security, customs, immigrations, health & quarantine, and air traffic control services
Design and Construct	Megawide-GMR Consortium	• Responsible for the design and construction of the New Terminal Building and support its commissioning • Undertake the supply and installation of all requisite facilities and equipment, and related landside developments in accordance with the EPC Contract
Independent Consultant (IC)	Consortium of DCCD Engineering Corporation; and EGIS AVIA	• The IC, procured by the PPP Center under the Project Development and Monitoring Facility (PDMF), has been tasked with providing feedback and services to BCDA and the EPC contractor at critical junctures in the EPC Agreement, such as design review, quality control during construction, acceptance and commissioning of the facility (including the handover). • The IC to review the design, construction, supply, and installation scope of the O&M Concessionaire as well as the operational phases vis-à-vis the prescribed minimum performance specifications and standards (MPSS).
Operate and Maintain	North Luzon Airport Consortium (NLAC)	• Operation of the existing terminal building until the handover of the New Terminal Building from the EPC contractor • Management, operations, and maintenance of the Clark International Airport (both the existing and New Terminal Building) as set out in the O&M contract, but not the airside facilities and air traffic control • Completion and fit-out of the New Terminal Building (i.e. internal structure such as baggage handling) upon its completion and successful commissioning by the EPC contractor • Manage the Operational Readiness, Activation and Transition (ORAT) process for the New Terminal Building

Table 13.3 Risk Allocation—Clark International Airport, Philippines

S. No.	Risk categories	Clark International Airport (CIA) expansion project	Comparison with HAM based PPP Projects
1	Design Risk – the risk potential for a design to fail to satisfy the requirements for a project.	***Borne by the private sector.*** • Megawide-GMR engaged BUDJI, ROYAL Architecture Design and Integrated Design Associates, Ltd. (IDA-HK) for the design of the New Terminal Building. • Hence, the private sector bears the design risk unless it is a government-initiated change in design leading to additional costs.	***Borne by the private sector.*** • The design risk is minimal in road projects since detailed project specifications are provided by the government. • If the private sector intends to use a new construction technology or material, they are allowed to do so provided it is already proven and successful in past projects.
2	Environmental and Social Risk – the risk of the damage to the environment or local communities by a project	***Shared between public and private sector.*** • Government is responsible to perform necessary studies relating to environmental and social aspects prior to the implementation of the project. • Megawide-GMR is responsible to make sure that their construction abides by the applicable recommendations to mitigate social and environmental impact, if any, of the project.	***Borne by the public sector.*** • Government is responsible to perform necessary studies relating to environmental and social aspects prior to the implementation of the project. • The nodal agency (e.g. NHAI in case of national highway projects) is also responsible for rehabilitation and resettlement (R&R) in case of displaced houses due to land acquisition.
3	Land purchase and Site risk – the risk of acquiring land for a project and geophysical conditions	***Borne by the public sector.*** • BCDA will deliver the Project Land for the new terminal and any required access roads free and clear.	***Borne by the public sector.*** • Availability of Project site and right of way for the 80% length of project before appointed date, with the remaining land to be provided within 90 days of the appointed date as per the concession agreement.

(continued)

Table 13.3 (continued)

S. No.	Risk categories	Clark International Airport (CIA) expansion project	Comparison with HAM based PPP Projects
4	Construction Risk – the risk associated with the construction cost increase and time delays for a project	***Borne by the private sector.*** • Megawide-GMR is required to construct the New Terminal Building under fixed price turnkey EPC Contract and as per the agreed timeline.	***Shared between public and private sector.*** • Project Capital Cost is inflation indexed (through a Price Index Multiple/PIM, which is the weighted average of Wholesale Price Index (WPI) and Consumer Price Index (CPI) (IW) in the ratio of 70:30.
5	Demand Risk – the risk of revenue variation linked to the demand or use of a project by end-users	***Shared between public and private sector.*** • O&M Concessionaire, now awarded to NLAC, will pay a fixed fee to BCDA and a variable component which is dependent on gross revenue, hence demand risk is shared. • However, if operating revenues fall much below the forecast, the O&M Concessionaire is more severely impacted.	***Borne by the public sector.*** • During operational phase, responsibility of toll collection is with government authority and hence, the demand risk is fully borne by the public sector/government authority • Cash flow to concessionaire is assured in the form of annuity payments on semi-annual basis covering 60% of the bid project cost; and interest shall be due and payable on the reducing balance of completion costs at an interest rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25%
6	Maintenance Risk – the risk of maintaining the asset to the appropriate standards and technical specifications	***Borne by the private sector.*** • O&M concessionaire may refuse to accept latent defect risk (related to design and/or construction quality). • Latent defect risk may result in higher than anticipated maintenance and refurbishments costs	***Borne by the private sector.*** • Concessionaire is responsible for the operation and maintenance of the project. • The concessionaire receives semi-annual inflation indexed O&M payments (as quoted during the bid stage). • The inflation index used of indexation of O&M payment is Price index multiple (PIM)

13.4 Key Learnings

The Clark International Airport PPP project is seen as a highly successful hybrid PPP project by the Government of Philippines, more specifically in terms of implementation since it was the fastest procurement process to be implemented by the government. The project broke ground in only 6 months (January 2018) after it was approved by the National Economic and Development Authority (NEDA) board in June 2017.

Listed below are the other key learnings from the implementation of this project for both public and private sector:

- The procuring authority needs to properly manage the timeline between the EPC and O&M tender, and ensure proper communication between the EPC contractor and O&M concessionaire during the construction phase to minimise interface risk.
- In this case, the government is keen to award the O&M contract as soon as possible in order to reduce the interface risk, so that the operator can work with the EPC contractor during the construction phase.
- Provide clear demarcation of roles and investments under O&M and EPC contract. If not, there is a potential conflict risk on investment allocation.
- In Clark airport, O&M player will invest in internal structures such as baggage handling systems and check-out areas. The main EPC contract entails construction of the main shell of the building.
- The operator should assess risk and perform due diligence on quality of construction before taking on the operation and maintenance of the asset.

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UK—Thames Tideway Tunnel

14

The Thames Tideway Tunnel (TTT) is the largest **water and sewerage infrastructure project** in the United Kingdom (UK) since the industry was privatized in 1989 [1]. The TTT is designed as 7.2-m wide and 25-km long sewer under the tideway of the Thames River with an objective to reduce instances of raw sewage spill events per year through diversion of combined rainwater runoff and raw sewage [1].

Figure 14.1 provides an illustration of the solution provided by Thames Tideway Tunnel, UK.

14.1 Thames Tideway Tunnel—Project Information

14.1.1 Introduction

London's inefficient and inadequate sewerage system led to cholera epidemic in 19th Century due which the government decided to build a new sewerage system named as Victorian sewer system, designed by chief engineer of the Metropolitan Board of Works—Joseph Bazalgette.

The Victorian sewer system was built in 1865. It was designed to serve 4 million people. Currently, population using this sewer system is 9 million. Due to which the sewer overflows the pollution into Thames River. These events occur when rainfall volumes surpass the limit of London sewerage framework (Mainly Bazalgette's and other sewerage systems). To overcome this problem a new sewerage (Thames Tideway Tunnel) was identified by British government.

A. Mittal et al., *Hybrid Annuity Model (HAM) of Hybrid Public-Private Partnership Projects*, Management for Professionals,
https://doi.org/10.1007/978-981-19-2019-6_14

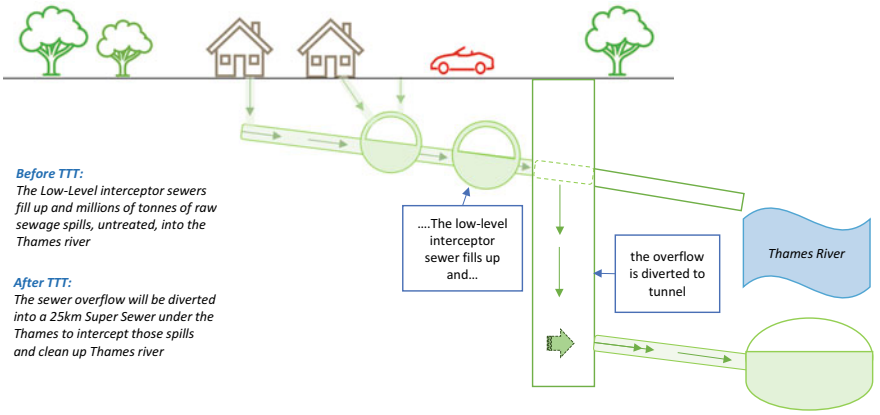

Fig. 14.1 Thames Tideway Tunnel, UK—An illustration

The Thames Tideway Tunnel will be a 25 km long under the tidal section (estuary) of the River Thames and 65 km below the ground, combined sewer running mostly covering Inner London that would capture, store and convey almost all the raw sewage and rainwater that that presently floods into the estuary. This contains all the residue that is developed during times of drier climate and causes the most harm.

The key information regarding the project is summarized in Table 14.1 [1].

14.2 Project Structure

This section describes the contractual structure for the project, key stakeholders and review of their roles and responsibilities in this project [1, 2] (Fig. 14.2 and Table 14.2).

Box: Joint Incentive Mechanism for multiple construction contracts

An alliancing agreement and joint incentive mechanisms were put in place to try to deal with the potential disadvantages of splitting construction into parcels. For the Thames Tideway Tunnel (TTT) project, having multiple contractors may have limited incentives for effective co-ordination across the project and created interface problems at the boundaries of each construction parcel. To give contractors incentives to work together to ensure the overall project succeeds, all construction contractors share in a GBP 1.6 billion bonus pool if the whole TTT is delivered early or below the target price.

Table 14.1 Project Information—Thames Tideway Tunnel, UK

Background	The Thames Tideway Tunnel (TTT) will be a 7.2 m wide and 25 km long sewer under the tideway of the Thames River in London, UK, due for completion in 2027. It is the largest water and sewerage infrastructure project in the UK since the industry was privatized in 1989. It will start at the Acton Storm Tanks in London's west and head towards the east of the city, then link with the Lee Tunnel at the north-east, which connects to the Beckton sewage treatment works.
Project Objectives	Along its path, the TTT will connect with 34 Combined Sewer Overflows (CSOs), diverting combined rainwater runoff and raw sewage from spilling into the tideway. CSOs spilling into the tideway prevent backing up of the sewerage system and overflows from manholes. Hence, reducing instances of raw sewage spilling into the tideway would in turn prevent raw sewage from flooding roads and buildings in built up areas of London. The TTT is expected to reduce spill events to a maximum of 4 per year which would be compliant with the European Union directives. It also ensures sufficient strategic sewer capacity to accommodate London's growth for at least the next 100 years.
Funding	Expected cost of project: GBP 4.2 bn (made up of GBP 3.2 bn to construct the TTT and GBP 1.0 bn to connect CSOs to the tunnel). • This is financed by investors who provided equity to Bazalgette (GBP 1.2 bn), loan from European Investment Bank (GBP 700 mn) and the balance is made up of a mix of bank debt and bonds (not all project debt secured at financial close due to length of construction period). • Additional consumer charges will ultimately fund the TTT.
Government Agency	Water Services Regulatory Authority (Ofwat), the independent economic regulator for the water and sewerage sectors in England and Wales.
Private Sector Players	1. Thames Water, the private company responsible for water and sewer services in the tideway. 2. Bazalgette Tunnel Limited (Bazalgette) • a special purpose vehicle whose investors include Allianz, Dalmore Capital, Amber Infrastructure, Swiss Life Asset Managers and International Public Partnerships. • Bazalgette owns the TTT, co-ordinates the TTT's financing and construction, and will ultimately operate it.

14.3 Risk Allocation

This section describes the risk allocation of the Thames Tideway Tunnel (TTT) project during the design, construction and operation phases of the project. For each risk parameter, a comparison is drawn with the Hybrid Annuity Model (HAM) based road PPP projects in India to enhance the understanding of the reader (Table 14.3).

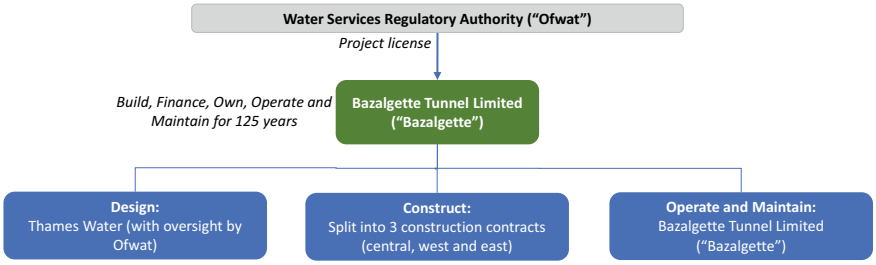

Fig. 14.2 Contractual Structure—Thames Tideway Tunnel, UK

Table 14.2 Key Stakeholders—Thames Tideway Tunnel, UK

Government Authority	Water Services Regulatory Authority (Ofwat) and UK Government	• Ofwat is responsible for making sure that Bazalgette comply with their licence conditions, and regulates the charges consumers pay to the private companies. • Ofwat will also monitor Bazalgette's performance to ensure it delivers the project both on time and budget. • The UK government has ultimate responsibility for compliance with environmental protection legislation. • The UK government also developed a government support package (GSP), under which they would provide contingent financial support in relation to exceptional, low-probability but high-impact risks.
Design	Thames Water (with Ofwat oversight)	• Thames Water developed detailed planning and cost estimations prior to tendering for construction contracts. • Greater detail about project plans educes uncertainty, which reduces risk and the need for construction bidders to have large contingency budgets. As a result, it placed downward pressure on price.

(continued)

Table 14.2 (continued)

Construct	Multiple Contractors	• Main works contractors are required to design, build and/or procure equipment including tunnel boring machines and diaphragm walling equipment to construct the relevant sections of the tunnel (main tunnel drive including shafts and connections). • The construction was split into three parcels (west, central and east). Splitting construction into parcels increased the number of companies that could realistically bid for any single parcel; and hence increased competition for the construction contracts, placing downward pressure on prices. – West Contract: BAM Nuttall, Morgan Sindall and Balfour Beatty Group JV – Central Contract: Ferrovial Agroman UK and Laing O'Rourke Construction JV – East Contract: Costain, Vinci Construction Grands Projets and Bachy Soletanche JV – System Integration Contract: Amey, who is responsible for providing process control, communication equipment and software systems for operation, maintenance and reporting across the Thames Tideway Tunnel system.
Operate and Maintain	Thames Water Utilities Limited (TWUL)	• The TTT will connect with and operate in conjunction with the sewer network. • Bazalgette is responsible for providing an effective and efficient public sewer. It is required under an Ofwat licence to comply with relevant legislation and to comply with the obligations set out in the Urban Waste Water Treatment Directive (UWWTD) for its area.

Table 14.3 Risk Allocation—Thames Tideway Tunnel, UK

S. No.	Risk categories	Thames Tideway Tunnel (TTT) Project	Comparison with HAM based PPP Projects
1	Design Risk – the risk potential for a design to fail to satisfy the requirements for a project	***Shared between public and private sector.*** • Thames Water provided detailed designs for the TTT, with oversight from Ofwat, hence removing a lot of the design responsibility from the construction bidders. • Ofwat scrutinizing and challenging the plans helped in placing downward pressure on some of Thames Water's proposed costings.	***Borne by the private sector.*** • The design risk is minimal in road projects since detailed project specifications are provided by the government. • If the private sector intends to use a new construction technology or material, they are allowed to do so provided it is already proven and successful in past projects.
2	Environmental and Social Risk – the risk of the damage to the environment or local communities by a project	***Shared between public and private sector.*** • The TTT must tunnel through ground conditions that cannot be known perfectly in advance under a large complex city in relatively close proximity to buildings and other challenging infrastructure. • Hence the GSP was developed, under which the UK government would provide contingent financial support in relation to such low-probability but high-impact risks.	***Borne by the public sector.*** • Government is responsible to perform necessary studies relating to environmental and social aspects prior to the implementation of the project. • The nodal agency (e.g. NHAI in case of national highway projects) is also responsible for rehabilitation and resettlement (R&R) in case of displaced houses due to land acquisition.
3	Land purchase and Site risk – the risk of acquiring land for a project and geophysical conditions	***Borne by the private sector.*** • Thames Water was responsible for acquiring land necessary for the construction of the tunnel, until Bazalgette took over.	***Borne by the public sector.*** • Availability of Project site and right of way for the 80% length of project before appointed date, with the remaining land to be provided within 90 days of the appointed date as per the concession agreement.

(continued)

Table 14.3 (continued)

S. No.	Risk categories	Thames Tideway Tunnel (TTT) Project	Comparison with HAM based PPP Projects
4	Construction Risk – the risk associated with the construction cost increase and time delays for a project	***Shared between public and private sector.*** • Individual construction firms are given a target price to aim for in relation to their section of the TTT. If a contractor delivers its section below the target price, it is rewarded with 50% of the underspend. Symmetrically, a contractor must absorb 50% of any costs above the target price.	***Shared between public and private sector.*** • Project Capital Cost is inflation indexed (through a Price Index Multiple/PIM, which is the weighted average of Wholesale Price Index (WPI) and Consumer Price Index (CPI) (IW) in the ratio of 70:30.
5	Demand Risk – the risk of revenue variation linked to the demand or use of a project by end-users	***Borne by the public sector.*** • Ofwat determines charges based on the regulatory capital value of the infrastructure rather than how often it is used. • This is similar to the way an availability-based PPP shields investors from demand risk and gives them substantial certainty that they will receive a return on their investment.	***Borne by the public sector.*** • During operational phase, responsibility of toll collection is with government authority and hence, the demand risk is fully borne by the public sector/government authority • Cash flow to concessionaire is assured in the form of annuity payments on semi-annual basis covering 60% of the bid project cost; and interest shall be due and payable on the reducing balance of completion costs at an interest rate equal to average of 1 year MCLR of top five scheduled commercial banks plus 1.25%
6	Maintenance Risk – the risk of maintaining the asset to the appropriate standards and technical specifications	***Borne by the private sector.*** • Bazalgette is responsible for the maintenance of the infrastructure.	***Borne by the private sector.*** • Concessionaire is responsible for the operation and maintenance of the project. • The concessionaire receives semi-annual inflation indexed O&M payments (as quoted during the bid stage). • The inflation index used of indexation of O&M payment is Price index multiple (PIM)

Source: Public Information, Author Analysis (the risk allocation is interpreted based on information collated from various publicly available information and news articles; and may require further verification from actual PPP contracts for completeness)

14.4 Key Learnings

The overall structure and mechanisms of the TTT's hybrid approach are a useful and innovative contribution to the field of infrastructure development. It is clear that substantial care has been taken to combine good practices from incentive regulation, project finance and alliancing to design measures that are capable of providing incentives for the private sector to finance and deliver large, new infrastructure efficiently. However, this model is likely to be replicated in jurisdictions with a sophisticated and robust regulatory capacity.

Listed below are the other key learnings from the implementation of this project for both public and private sector:

- Risk-based structuring of transactions brings value-of-money. Government support can be tailored to address project-specific risks that are difficult to quantify so as to encourage and facilitate private investment in infrastructure.
- As expenditure related to operations is usually a small proportion of overall cost, extracting efficiencies in the construction phase is central to delivering value for money to consumers.
- It is important to ensure highest quality construction and full consideration for whole life maintenance costs in selection of materials and construction techniques.
- Involving the O&M contractor in the detailed design of the construction can help to bring down overall project costs.
- Where many stakeholders are involved, alliancing agreement and joint incentive mechanisms should be considered to encourage effective co-ordination across the project.

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